KANSAS STORMWATER 2024 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

	Permittee [Agency Name] Mailing Address 1:	City of Lawrence, 6 E 6th Street
	Mailing Address 2:	PO Box 708
	Municipality:	Lawrence
	State:	Kansas
	Zip Code:	66044
☐	MS4 Program Contact - Person:	Jonathan Gutierrez, Environmental Manager
☐	Contact E-Mail Address:	jgutierrez@lawrenceks.org
☐	Contact Phone Number:	785-832-7808
☐	MS4 Program Construction Contact - Person	Jonathan Gutierrez, Environmental Manager
☐	Construction E-Mail Address:	stormwater@lawrenceks.org
☐	Contact Phone Number:	785-832-7808
	Kansas Permit Number: — Ex. M-MC21-SU01	M-KS31-SU01

Reporting period covers activities from January 1, 2024 through December 31, 2024.

This annual report must be submitted to the Kansas Department of Health and Environment (KDHE) by February 28th, 2025. The annual report is to be submitted as PDF files to KDHE via Kansas Environmental Information Management System (KEIMS). There is no requirement to provide hard copies of any documents.

IN ADDITION, provide the following:

1. 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.

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

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.

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.

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.

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.

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

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

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

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.

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.

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 (BMPs) 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 BMPs 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.

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:

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

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. BMPs to prevent or minimize adverse water quality impacts;

b. Strategies which include a combination of structural and/or non-structural BMPs 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 BMPs

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	
☑	☐	☐	Has the Stormwater Management Program (SMP) been developed and implemented?
☑	☐	☐	Has the SMP been modified or updated during this reporting period?
☑	☐	☐	Has the current SMP been submitted to KDHE via KEIMS?

If the answer to item 3 is a "NO," a copy of the updated SMP must be uploaded to KEIMS. 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 BMPs and/or revised goals to avoid being in a position of non-compliance. However, reasonable BMPs with reasonable goals must be implemented or KDHE may require the permittee to modify the SMP to include additional or better BMPs and/or more reasonable goals.

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

1. Public Education and Outreach

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

YES	NO	N/A	
☑	☐	☐	Has a program been developed and implemented to educate the public about stormwater topics?

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

1. Public Education and Outreach (Table)

List all of the public education and outreach BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **7** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp P Ed & O - 01	Maintain a stormwater webpage for the permittee.	The City of Lawrence Stormwater webpage received a total of 765 visitors (up 1,242% from 2023) and 1,020 page views, an average of 85 views/month, in 2024. Items updated/added to the Stormwater webpage in 2024 included: • Updated Lawn and Landscaper information (added native planting resources) in conjunction with sapling giveaway at St. Patrick's Day parade (March) • Website link updates (included updated SMP and 2023 Annual Report-March) • Added updated HHW rack card to HHW and Stormwater pages (June) • Seasonal banner changes for deicer/sidewalk salt, pet waste pickup and fall leaves reminders, • Corrections to Watershed Map (June) Additional website corrections were requested by Stormwater staff for the general Recycling, Electronics Recycling, HHW and Yard Waste/Compost pages throughout 2024.	2
Lbmp P Ed & O - 02	Distribute educational materials (either flyers, brochures, catalog mailings, handouts, or e-mails) addressing various pertinent stormwater public education topics.	The City prints and mails approximately *19,500 utility bills each month, which include the City newsletter (The Flame) as a standalone insert. “Important Messages” are printed directly onto utility bills and seen on emailed customer invoices. Educational materials distributed in 2024 for customers receiving eBills with on-bill messaging totaled 15,925 per month. Mailed educational materials distributed in 2024 included: • March Flame article "You've Tote-ally Got This," highlighted details and suggested tips for the City's new plastic bag ban.	2

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

		• June Flame article “Use Your Water Wisely This Summer" featured rain capture and rain barrels to reduce residential runoff. • October on-bill ‘Important Message’ section provided “Keep Leaves out of the Street” guidelines for managing fall leaves. • November Flame IDDE article: "Keep Our Stormwater System Clean: Manage Your Leaves This Fall" (*Approximate mailout total messaging reach of 19,500 x 4 = 78,000) Physical distribution of education materials in 2024 included: • St. Patrick’s Day parade, 03/17/24: EHS provided 1,000 Stormwater flyers stapled to tree saplings distributed to parade attendees. • E-waste Event, 06/08/24: participant handout packets included Recycling Cart Inlay (yes/no items image) Flyer, "15 Items" Recycling Flyer, Battery Stickers, FOG, and HHW rack cards; approximately (800x4 +200x2) 3,600 pieces distributed • 998 educational pet waste flyers were distributed by the Lawrence Humane Society with dog adoption packets • Approximately 75 doorhangers with targeted stormwater pollution concern messages/guidance were distributed to residents in neighborhoods with identified problems (i.e. paint waste, leaves in the street) • In September and December, Solid Waste and EHS delivered 1,900 recycling tote bags and 1,360 reusable cups to apartment dwellers in Lawrence, to educate them on proper recycling procedures, FOG, HHW and Stormwater topics. • Stormwater, Recycling, HHW, FOG materials were distributed at various fairs and festivals: Earth Day, Prairie Park Nature Center 25-year celebration, Electric Vehicle Showcase, 10 Years of Lawrence Curbside Recycling Celebration, among others. Approximately 500 pieces of literature and/or branded City items (t-shirts, tote bags) were given away during these events. (*Approximate per piece distribution of physical materials: 9,200) Emailed education materials in 2024 included: • Utilities e-bill message, October: “Keep Leaves Out of the	

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

		Street"; 15,925 recipients • Online versions of the Flame newsletter contained an environmental messaging/stormwater-related article in October, reaching approximately 16,000 (avg. 2024 subscription) recipients. Total educational piece distribution: 78,000+9,200+31,925 = 119,258 This total exceeds 42,421 total housing units estimated per 2020 US Census Bureau data.	
Lbmp P Ed & O - 03	Provide either training or educational materials to permittee identified businesses at high risk of contributing to stormwater pollution. Such businesses can include, but are not limited to, food service, auto service, disaster response and janitorial services. The training or educational materials shall address best management practices they can employ to minimize or avoid adverse stormwater impacts due to their operations.	In 2024, City staff provided training or educational materials to more than 100 high-risk businesses: • Builders/Developers: On 12/06/24, City staff provided stormwater training to 53 area builders and developers through the Lawrence Home Builders Association. Topics covered included background on federal, state, and local stormwater regulations, MS4 permit requirements, state and local SWPPP requirements for preparation and implementation, construction site BMPs, and City construction site inspection and enforcement processes. • Lawn Service: Stormwater BMPs related to lawn care/landscaping were emailed to 54 lawn/landscape companies on 7/17/24. • On a case-by-case basis, City staff distributed educational or counsel documents to various businesses [e.g., MCM, Penny Concrete (concrete washout), Triangle Fraternity (SSO) and building contractors (track-out issues)] in 2024.	2
Lbmp P Ed & O - 04	Apply notification, placard, covers/hatches with message, or stencil, on stormwater inlets to provide a message similar to "No Dumping – Drains to River"	In 2024, 5,137 (78%) of the 6,591 City-owned inlets bore stamps or decals with the message; an increase of 12% from 2023.	2

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

Lbmp P Ed & O - 05	Post the municipality's MS4 permit and SMP document on either the stormwater web page or the municipal webpage.	The City of Lawrence MS4 Permit and Stormwater Management Plan have been available on the city's website throughout 2024.	1
Lbmp P Ed & O - 07	Provide educational material annually to at least four groups, including each of the following types: Residents, Businesses/Institutions, Commercial entities/Developers, and Industrial facilities. The educational material may be provided as any of the following: • Brochures • Flyers • E-mails • Press release	• Lawncare Businesses: Stormwater BMPs related to lawncare/landscaping were e-mailed to 54 lawn/landscape companies on 07/17/2024. • Residents/Businesses: In October/November, customer utility bills and the City newsletter insert, The Flame, contained information regarding illicit discharge detection. These were mailed to approximately 19,500 residential and business utility customers. • Construction Businesses: On 12/06/24, City staff presented to 53 Lawrence Homebuilders' Association Members; "Construction Site BMPs for Stormwater Pollution Prevention", which included background on federal, state, and local stormwater regulations, MS4 permit requirements, state and local SWPPP requirements for preparation and implementation, construction site BMPs, and City construction site inspection and enforcement processes • Pet Owners: Throughout 2024, 998 educational pet waste flyers were distributed via Lawrence Humane Society dog adoption packets. •Municipal Employees:**182** o IDDE/power washing BMP training provided to 13 Parking/City Staff (07/24) o Stormwater Educational/IDDE booth engaged at least 100 utilities/public works staff at MSO Dept. Safety Fair (10/09) o Qualified Inspector of Stormwater training completed by 25 MSO staff (10/24-10/25/24) o Facility SWPPP training completed by 44 wastewater treatment plant staff (2024) •Multi-Family (apartment) Dwellers: In September and December of 2024, Solid Waste and EHS delivered 1,900 recycling totes with educational information, and 1,360 reusable cups to educate apartment residents on proper recycling procedures, as well as FOG, HHW and Stormwater topics.	3

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

Lbmp P Ed & O - 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 City of Lawrence entered into a service agreement with Friends of the Kaw (FOK) for Kids About Water (KAW) programming to be provided to Lawrence students at Lawrence High School and Free State High School for the 2023-2024 and 2024-2025 school years. The overall focus of this hands-on, interactive program is to develop an understanding of water quality, watersheds, and stormwater runoff in the school community and the relationship between runoff, pollution, and water quality. In spring of 2024, six classes, at least 150 students (9% of 23/24 enrollment at Lawrence High School), participated in program classroom learning, stormwater runoff calculations and demonstration, as well as stream sample collection and data analyses. In the fall of 2024, five classes, an additional 116 students (6.7% of 24/25 enrollment at Lawrence Free State High School), completed the same training program. Additional classes at the LHS campus are being planned for spring of the current school year.	3
Lbmp P Ed & O - 09	Operate an information booth at a large public event, (such as a sports event, fair, or music festival) where at least an estimated 1,000 or more individuals attend. Alternately, operate an information booth at multiple public events, (such as a sports event, fair, or music festival) where a cumulative estimated total of 3,000 or more individuals attend. And finally, a single point can be claimed for operating an information booth at a public event where at least an estimated 200 or more individuals attend.	The City hosted an e-waste recycling event, (estimated attendance of 1,080 vehicles) on 6/8/24. During a four-hour period, 83,860 lbs. of electronics were collected from area residents and businesses for recycling. All attendees were engaged and offered educational materials or packets including Stormwater, Recycling, HHW and FOG (Fat, Oil and Grease) topics. Approximately 3,500 stormwater educational pieces were distributed to area residents. 7 City staff members worked at the event for 100% of the open hours (9AM - 1PM). An eighth staff member worked for two hours.	2

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

<table>
<tr><td>Lbmp P Ed & O - 10</td><td>Provide either training or educational materials to lawn/turf care service entities addressing best management practices they can employ to minimize or avoid adverse stormwater impacts due to their operations.</td><td>Municipal Services & Operations Compost Facility emailed best management practices for lawn and landscape companies to 54 local companies on 07/17/24.</td><td>2</td></tr>
<tr><td>Lbmp P Ed & O - 15</td><td>Develop or participate in an ongoing social media program on pertinent stormwater public education topics.</td><td>Throughout 2024, monthly educational posts were made through the City’s Facebook and X social media accounts. Posts included topics of lawncare, deicer use, fall leaves, recycling, FOG, and HHW. Ten targeted stormwater posts received 48,043 views or impressions.

Overall, the City posted at least 24 environmentally themed messages (including E-waste and Earth Day event notifications), which received more than 89,000 impressions or views. A new video, "10 Years of Recycling In Lawrence", was posted on 12/03/2024 and received 1,400 views.</td><td>2</td></tr>
<tr><td>Lbmp P Ed & O - 16</td><td>Operate an information booth at a public event or hold a public event which is intended to improve public understanding of issues related to water quality. The event may be associated with any environmental related issue including but not limited to an environmental expo, earth day, world wetlands day, international day of action for rivers, world fish migration day, world biodiversity day, world oceans day, world cleanup day, world water monitoring day, world rivers day, and America recycles day.</td><td>The City hosted an electronic waste recycling event, (estimated attendance of 1,080) on 6/8/24. All attendees were engaged and offered educational materials or packets including Stormwater, Recycling, HHW and FOG (Fat, Oil and Grease) topics. Approximately 3,600 stormwater educational pieces were distributed to area residents. Eight City staff members attended the event for 100% of the open hours (9AM - 1PM).

Additional environmental events tabled by Stormwater Staff included:
<table>
<tr><th>Event</th><th>Date</th><th>Approx. Attendance</th></tr>
<tr><td>Lawrence Earth Day Celebration</td><td>04/20/2024</td><td>600</td></tr>
<tr><td>Prairie Park Nature Ctr, 25 Anniversary</td><td>09/14/2024</td><td>500</td></tr>
<tr><td>Electric Vehicle Showcase</td><td>10/06/2024</td><td>“Several Hundred”</td></tr>
<tr><td>America Recycles Day/ 10th Anniversary of Lawrence Curbside Recycling</td><td>11/16/2024</td><td>200-300</td></tr>
</table></td><td>2</td></tr>
<tr><td colspan="3">TOTAL POINTS CLAIMED FOR PUBLIC EDUCATION AND OUTREACH ⟶</td><td>23</td></tr>
</table>

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

1. Public involvement and Participation

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

YES	NO	N/A	
☑	☐	☐	Has a public involvement and participation program been developed and implemented to solicit public comments and recommendations regarding BMPs and measurable goals utilized to comply with the permit?

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

2. Public Involvement and Participation (Table)

List all public involvement and participation BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **6** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp 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.	The City was a major sponsor of the Friends of the Kaw River Cleanup event on 4/20/24. Over 100 volunteers (including City staff) participated in removing trash from the Kansas River riverbanks. City Parks and Recreation coordinated park cleanups with at least 3 civic groups, student organizations, and neighborhood associations. Most groups have 'adopted' a park or area, including Burrough's Creek Linear Park, South Park, and Edgewood Park in areas that are known to collect waste. Throughout 2024, at least 10 clean up events took place in parks and waterside areas on a one time or recurring basis. The Parks dept. provides trash bags, gloves, sticks, and safety vests for volunteers. In mid-October 2024, City workers bulldozed and cleaned wooded areas used for camping for unhoused residents near the Amtrak Station along the Kansas River, as they were re-directed to supported living sites. Due to safety concerns, volunteers were not used. The intent was to remove significant waste near the river and restore the area as a bald eagle habitat. The City donated dumpster service to both Friends of the Kaw and the Kansas River cleanup efforts.	3
Lbmp P I/P - 05	Provide at least two events for residents to engage in cleanup activities and improve water quality in the municipality.	The City was a major sponsor of the Friends of the Kaw River Cleanup event on 4/20/24. Over 100 volunteers participated in removing trash from the Kansas River riverbanks. Additionally, the City's Prairie Park Nature Center and Preserve, was the site of multiple "Community Prairie Restoration Days" throughout the year. Volunteer workdays included the removal of invasive trees and plants, seeding native plants, and education activities. The events, co-sponsored by Grassland Heritage and Native Lands Restoration, in partnership with Lawrence Parks & Recreation and others, were held on May 11, June 1, September 28, and October 27, 2024.	3

Lbmp P I/P - 06	Establish a program to encourage residents to install stormwater treatment best management practices on their property.	For its Residential Native Tree Outreach Program, the Lawrence Parks and Recreation Dept.'s Horticulture and Forestry Program gave away 1,000 saplings (redbud and lilac) to area residents on 3/17/24 at the City's St. Patrick's Day parade. 2024 was the first year Environment staff coordinated with Parks to attach a "Protect our Stormwater" message and QR code (which linked to Stormwater BMPs for lawncare) to the trees. The trees come from the Kansas Forest Service's Conservation Tree Program and are primarily natives.	2
Lbmp P I/P - 07	Enact either an ordinance, a resolution, or other enforceable requirement that requires pet owners or their keepers to immediately and properly dispose of their pet's solid waste deposited at parks or rest areas owned by the permittee.	City Code 9-902(C)(7) requires that pet waste be disposed of as solid waste or sanitary sewage. This ordinance is also referenced in Park Regulations 6(a) on the City's Parks & Recreation webpage, which states, "Owners are required to dispose of pet waste properly," with reference to applicable City Code. Pet waste bag dispensers and signs are installed at the City's two dog parks.	1
Lbmp P I/P - 09	Distribute stormwater educational materials to the public within this permit area. Alternately, the permittee may provide stormwater educational materials, e.g. brochures, flyers, or pamphlets that address various stormwater topics. Other nearby municipalities may distribute these materials to the public. The nearby municipalities must be within 30 miles from this permit area.	City Environment staff distributed information packets to over 1,080 attendees of the Lawrence Electronic Waste Recycling event (open to all area residents and businesses) on June 8, 2024. Packets included information on 3 topics: • Stormwater rack cards (678 @.31824 ea. =$215.77) • Household Hazardous Waste info cards (678 @.31824 ea. = 215.77) and 678 "battery bag" stickers, (unknown value) • Recycling cart inlay handout (678@.25 ea. = $169.50) • 15 Items 'deep dive' recycling handout (500 @.41ea = $214.02) EHS staffed a table at the Prairie Park Nature Center's 25th Anniversary Celebration on 09/14/2024. The event drew around 500 attendees. EHS' table provided a fun, interactive recycling game for kids and handed out about 20 pieces of environmental literature, 12 t-shirts, and multiple tattoos and stickers for the children. The total value of distributed materials ($816.06) was >$50 for each topic. These materials were also distributed at outreach events and the Lawrence Earth Day event on 04/20/24. Throughout 2024, MSO Environment and Field staff distributed additional Stormwater ("Pollution found in your area" and "Leaves don't belong in the street") doorhangers to various residents/neighborhoods, on a case-by-case basis.	3

Lbmp P I/P - 10	Establish a program to employ (either paid or unpaid) high school or college age environmental interns in an environmental related program including but not limited to either the wastewater utility, stormwater utility, potable water utility or solid waste utility.	The MSO department employed four (college) student interns for its Construction & Engineering Management (3) and Water Quality/Regulatory Compliance programs (1), respectively, for at least 8 weeks starting in the summer of 2024. Notably, three Engineering Student interns have been hired for an extended timeframe. They continue to work on Stormwater and Wastewater Utility Programs, Sanitary Sewer analysis, GIS information requests and have researched BMPs for the City's adoption of new Stormwater Management Criteria and the MARC BMP manual.	2
TOTAL POINTS CLAIMED FOR PUBLIC INVOLVEMENT AND PARTICIPATION ⟶			14

C. SMP Requirements (Six Minimum Control Measures)

3. Illicit Discharge Detection and Elimination

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

YES	NO	N/A	
☑	☐	☐	Has a program/plan been developed and is it presently implemented to detect and address illicit/prohibited discharges into the MS4, including dry weather monitoring?
☑	☐	☐	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? If yes, attach map.
☑	☐	☐	Have ordinances, or resolutions, or regulations to prohibit non-stormwater discharges into the storm sewer system been enacted? If yes, list ordinances/resolutions and their effective dates below: • Ordinance 7373 for Stormwater Pollution Prevention, Sept. 1, 2001 • Plumbing code modification, July 1, 2019 • Ordinance 9887 for Fat, Oil, or Grease storage, Dec. 21, 2021
☐	☑	☐	Have the ordinances, resolutions, or regulations been modified? If yes, list ordinances/resolutions and their effective dates below:

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

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

3. Illicit Discharge Detection and Elimination (Table)

List all illicit discharge detection and elimination BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **7** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp I D 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.	In 2024, EHS staff inspected 6 (or 10%) of the City's 57 known MS4 outfalls for dry weather discharge. No dry weather discharges indicating possible illicit discharges were observed during inspections.	1
Lbmp I D 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.	During the months of October and November of 2024, the City conducted a Fall Leaves IDDE awareness campaign: • All residential and business customers (35,4215; paper +eBilling) received an 'on-bill' message in October regarding managing fall leaves for stormwater protection. • "Keep Our Stormwater System Clean: Manage Your Leaves This Fall!," was a full page article mailed to 19,500 ratepayers via the November Flame newsletter, which was included in City utility bills. An additional November Flame article, "Beware of the FOG this Thanksgiving" provided tips for residents to avoid clogged drains. • Finally, on November 05, 2024, a City press release concluded the campaign with, "Help Us Keep Lawrence's Stormwater System Clean this Fall!", which discussed the importance of stormwater (with an emphasis on fall leaves), illicit discharges, and how to report them. Links were provided to the City's Reporting App and Stormwater webpages.	2

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

Lbmp I D D & E - 06	Inspect, by televising pipelines or direct visualization of open channel drainage, 2% of the MS4 system within the permit area all conducted within a 12-month period to aid in identifying illicit discharges as well as evaluate the condition of the storm sewer lines/drainage channels-ditches. If in a 12-month period 10% of the MS4 system is inspected a higher point value may be claimed.	City field operators perform CCTV inspection of stormwater lines and channels as part of regular workflow. In 2024, staff inspected and televised 84,302 ft. of stormwater lines, representing 5% of the total storm system. City staff also investigated 32 stormwater pollution concerns in the field, including response to 2 SSOs.	3
Lbmp I D 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.	During 2024, the HHW facility logged 4,801 total visits. There were 3,421 household drop-off appointments and 37 business hazardous waste drop-offs. There were 1,343 product reuse appointments. This resulted in 124,380 lbs. of waste processed and shipped for proper disposal, and 29,017 lbs. of reusable items distributed to the public.	3
Lbmp I D D & E - 08	Implement a program to increase the reliability of sanitary sewer pump stations above the minimum standard design requirements.	All wastewater lift stations are currently connected to the City's SCADA system to indicate near real time notification of pump functions and failures, and wet well levels. Stations also have bypass pumping ability and can be hooked up to the force main. Three lift stations currently have backup generators on site. A bump-out generator hookup was added to lift station #10 in 2023. These improvements remained operational throughout 2024. In 2024, lift station #4 underwent a rehabilitation project (2299121-MS) that included coating of the wetwell, replacement of motor control centers and mechanical equipment, replacement of hatches, and replacement of the upstream manhole structure.	4
Lbmp I D D & E - 09	Provide a contribution to area recycle programs or programs (such as household hazardous waste disposal facilities, e-cycle facilities, paper shred facilities, pharmaceutical disposal facilities etc.) designed to properly dispose of types of waste or materials which have previously been discarded	**Total value of materials distributed in 2024**: at least **$9,500.** Total contributions (materials and in-kind labor) were greater than $500. • The City funds and operates an HHW program open to all City and County residents. The City also operates and maintains open hours at its Compost Facility on Saturdays, March – December. All area residents may drop-off brush and lawn waste, thus keeping these materials out of storm sewers.	2

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

	to or adjacent to either the MS4, streams, or lakes within or adjacent to the permittee's permit area. The area program must be within 30 miles from this permit area.	• On St. Patrick's Day, 03/17/24, a stormwater educational message was added to 1,000 tree saplings distributed to parade attendees. Printed flyers cost $89. • The City provided printed materials for distribution at the E-Waste collection event on 06/08/24, open to all area residents. 800 each of HHW and FOG info cards, and 1.000 each HHW "battery collection" stickers and 900 recycling flyers (total of 3,500 pieces) were distributed. New handouts purchased for the event totaled $709. 8 EHS staff members worked a total of 37 hours at the City-operated event. • During 2024, Solid Waste and Environment staff delivered 1,900 recycling totes (@$1.44 each), and 1,360 reusable cups (@$4.38 each) to apartment dwellers in Lawrence, to educate them on proper recycling procedures, FOG, HHW and stormwater topics. Recycling outreach materials distributed in 2024 totaled > $8,700.	
Lbmp I D D & E - 10	Inspect, 5% of the MS4 system Stormwater inlets and/or outfalls within the permit area all conducted within a 12-month period to aid in identifying illicit discharges. If in a 12-month period 15% of the MS4 system inlets and/or outfalls are inspected a higher point value may be claimed in the year the required percentage of inspections are completed.	In 2024, EHS staff inspected 6 (or 10%) of the City's 57 known MS4 outfalls for dry weather discharge. No dry weather discharges were observed during inspections. City field operators regularly inspect stormwater inlets, cleaning the interior as needed, as part of regular workflow. In 2024, staff inspected 1,129 inlets (17%) and cleaned and vacuumed out 87 inlets.	5
TOTAL POINTS CLAIMED FOR ILLICIT DISCHARGE DETECTION AND ELIMINATION →			20

C. SMP Requirements (Six Minimum Control Measures)

4. Construction Site Stormwater Runoff Control

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

YES	NO	N/A	
☑	☐	☐	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?
			If yes, list ordinances/resolutions and their effective dates below: • Ordinance 7373 for Stormwater Pollution Prevention, Sept. 1, 2001
☑	☐	☐	Has a procedure or program been developed requiring construction site owners and/or operators to implement appropriate erosion and sediment control best management practices?
☑	☐	☐	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?
☑	☐	☐	Has a procedure been developed and implemented requiring site plan review which includes consideration of potential water quality impacts?
☑	☐	☐	Has a procedure been developed for the receipt and consideration of information submitted by the public?
☑	☐	☐	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 BMPs as identified in the SMP and provide the requested information in the following table

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

4. Construction Site Stormwater Runoff Control (Table)

List all construction site stormwater runoff control BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **6** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp C S S R 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.	On 12/6/2024, City staff provided stormwater training to 53 area builders and developers and their contractors through the Lawrence Home Builders Association (LHBA). Topics covered included background on federal, state, and local stormwater regulations, MS4 permit requirements, state and local SWPPP requirements for preparation and implementation, construction site BMPs, and City construction site inspection and enforcement processes.	3
Lbmp C S S R 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.	The City's Stormwater Engineer performs a review of site plans for SWPPP and NOI using a written stormwater plan review process. The Environmental Program Administrator reviews food service-specific site plans for FOG/grease interceptor compliance with international plumbing code as adopted by the City as City Code Chapter 5, Article 5.	2
Lbmp C S S R C - 05	Establish effective requirements for construction sites to control wastes. Develop through ordinance or other enforceable means requirements for construction site Operators or owners to control wastes. At a minimum control shall be imposed to prevent entry into the MS4 for the following wastes: • discarded building materials • concrete • truck washout chemicals • litter, • and sanitary waste	City code Chapter 5-1, 131 and Chapter 9, Article 9 support stormwater pollution prevention by addressing construction site maintenance, general stormwater pollution prevention provisions, and enforcement of notice of violations. City staff monitored for and enforced these code parameters on sites throughout 2024. City Planning & Development staff indicated sediment and erosion controls as a condition of issued building permits and also provide a sediment control brochure to building permit applicants. Additionally, the City's Erosion and Sediment Control standard detail sheet is available on the City's website.	2

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

Lbmp C S S R C - 06	Develop written procedures for inspection of construction sites. Develop a Stormwater Construction Site Inspection Guide for use by municipal inspectors.	A written procedure describing the City's construction site inspection and enforcement process for sediment and erosion controls and best practices was completed and approved in 2024.	3
Lbmp C S S R C - 07	Acquire or develop a software tracking system to track inspections and related tasks.	City staff used the Lucity Asset Management program throughout 2024 to document construction site inspections, as well as subsequent follow-up inspections, requests for corrective actions or compliance assistance, issuance of Notice of Violation letters, and any other subsequent activities related to the construction site inspection and enforcement process.	1
TOTAL POINTS CLAIMED FOR CONSTRUCTION SITE STORMWATER RUNOFF CONTROL →			11

C. SMP Requirements (Six Minimum Control Measures)

5. 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	
☑	☐	☐	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?
			If yes, list ordinances/resolutions and their effective dates below: • Ordinance 7373 for Stormwater Pollution Prevention (Sept. 2001) • Ordinance 6778 adopted Stormwater Management Criteria (Feb. 1996) • Ordinance 7985 adopted City's Land Development Code (July 2006)
☑	☐	☐	Has a post-construction stormwater runoff program been implemented?
☑	☐	☐	Have post-construction sites been inspected this past year?
☐	☑	☐	Are BMPs specified to minimize adverse water quality impacts?
☑	☐	☐	Have strategies been developed to include a combination of structural and/or non-structural BMP appropriate for the municipality?
☑	☐	☐	Have measures been implemented to ensure adequate long-term operation and maintenance of structural BMPs?

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.

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

5. Post-Construction Stormwater Management (Table)

List all post-construction stormwater management BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **7** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp P-C S M - 03	Develop and implement a program to ensure adequate long-term cleaning, operation and maintenance of all municipally owned or operated post-construction structural stormwater BMP facilities. The program shall address several different types of these BMP systems. The systems, which are addressed, shall include any type of post-construction structural BMP system, contained in the MS4. These shall include, if so present, at a minimum the following: • detention ponds • retention ponds • grass swales • wetlands • pervious paving systems • vegetative filter strips • manufactured stormwater treatment devices (swirl separators, screens, etc.) • drop inlet-catch basin	In 2023, City staff created a written program document addressing required maintenance activities for existing types of City-owned post-construction structural BMPs. In 2024, City staff inspected 6 of 49 (12%) identified City-owned structural BMPs per the documented municipal BMP inspection and maintenance program. Written plans were completed for each inspected BMP indicating necessary maintenance activities and time frame.	2
Lbmp 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.	All known City-owned structural BMPs within the MS4 are identified by the BMP Structure icon in the Stormwater Device layer of the City's Stormwater Program Map. In 2024, City staff inspected 6 of 49 (12%) identified City-owned structural BMPs per the documented municipal BMP inspection and maintenance program. Written plans were completed for each inspected BMP indicating necessary maintenance activities and time frame.	2

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

Lbmp P-C S M - 06	Develop and implement a program for inspection of known privately owned structural BMPs which includes providing the owner of the BMPs an inspection report which specifies needed maintenance to ensure long-term operation of the BMPs.	All known privately owned structural BMPs within the MS4 are identified by the BMP Structure icon in the Stormwater Device layer of the City's Stormwater Program map. City Code states that operation and maintenance of private detention facilities is the responsibility of the property owner and successors. In 2024, City staff inspected 25 of 244 (10%) identified privately owned structural BMPs. EHS staff mailed notification letters to property owners for each inspected BMP stating maintenance requirements and a timeline for completion of any needed maintenance activities.	3
Lbmp P-C S M - 07	Enact either an ordinance, a resolution, or other enforceable requirement which requires the installation of pervious surfaces on property.	City Code Chapter 20, Article 9 - 20-901 C. (adopted July 2006, revised via ordinance 9772, July 2020) states that all new developments must mitigate impervious parking surface when offering additional parking area over a certain threshold. The City uses Development Code Chapter 20, Article 9, 901(c), which states that "Developments that provide parking in excess of the required standards must mitigate the impacts of the increased Impervious Surface through use of storm drainage Best Management Practices (BMPs) as provided in the City's adopted BMP manual (MARC)."	2
TOTAL POINTS CLAIMED FOR POST-CONSTRUCTION STORMWATER MANAGEMENT →			9

C. SMP Requirements (Six Minimum Control Measures)

6. Municipal Pollution Prevention/Housekeeping

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

YES	NO	N/A	
☑	☐	☐	The permit requires the permittee to enact a program to address pollution prevention/good housekeeping for Municipal Operations. Has such a program been enacted?
☑	☐	☐	Is there a program to ensure proper use and storage of pesticides, herbicides, and fertilizers at permittee owned facilities?

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

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

6. Municipal Pollution Prevention/Housekeeping (Table)

List all municipal pollution prevention/housekeeping BMPs as identified in the SMP and provide the requested information in the following table. The BMPs listed in the below table should add up to a minimum of **6** points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp P P/G H - 02	Implement a recycle and proper waste disposal program for municipal staff to reduce potential for litter, to recycle waste oil, batteries, glass containers, plastic containers, and paper products.	All City facilities utilize or can access the City's single-stream recycling collection and/or cardboard-only collection programs, which are collected and transported to the recycling facility via weekly routes. Individual departments (IT, MSO -Solid Waste, Central Maintenance, Field, Parks & Recreation) recycle electronics, scrap trash carts, metals, tires, auto fluids, batteries and organics on a routine basis. In 2024, City departments recycled: • approximately 96 tons of cardboard and 181 tons of single-stream materials (based on route volume & frequency), • 98.5 tons of metals (combined fleet/departmental and residential), and 4.4 tons of scrap plastic carts by Solid Waste, • 2.7 tons of electronic waste, • 9.92 tons of paper for shredding, • 1.9 tons of hazardous waste, • 2,767 gallons (10.5 tons) of oil and antifreeze and 1.01 tons of batteries were recycled from the City's garage facility • 3.5 tons of re-cap tires purchased by garage • City Departments (Streets & Parks) collected and delivered 5,604 tons of organic material for mulching or composting at the City's Compost Facility. Overall in-house Recycling by the City is estimated at approximately **6,013** tons for 2024.	2
Lbmp P P/G H - 03	Develop a guidance document for municipal staff or third-party contractors which apply pesticides. The guidance shall require any municipal staff, who apply restricted use pesticides, to have a commercial applicator certification from the Kansas Department of Agriculture if required by that	City Parks & Recreation requires all staff/contractors who apply pesticides to be properly licensed as applicators, and since its 2008 adoption, uses the Integrated Pest Management Policy Manual for guidance. Per the policy, restricted-use pesticides are not on the Allowed Pesticide List (2021), and when used, can only be applied under direct supervision of or by a trained, certified applicator. The policy also	1

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

	Department.	stipulates that applicators must comply with all label instructions.	
Lbmp 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 City streets were swept approximately 1-2 times in 2024 for a total of 2,467 lane miles swept and 6,475 cubic yards of sweepings collected. 1,969 cubic yards (443 tons) of the sweepings collected in 2024 were leaves hauled to the City's compost facility. In 2024, the City purchased multiple roll-off containers specifically designated for collected street sweeping materials. Additionally, 1,604 tons of trees and brush were collected from roads and right of ways and delivered by Parks and Rec. for composting, as a result of a large July storm event.	3
Lbmp P P/G H - 07	Implement a program to inspect stormwater inlets to identify illicit discharges and clean drop inlets of accumulated debris.	City field operators regularly inspect stormwater inlets, cleaning the interior as needed, as part of regular workflow. In 2024, staff inspected 1,129 inlets (17%) and cleaned and vacuumed out 87 inlets. City staff also inspected and cleaned the throat openings of 2,693 inlets (not unique inlets) for storm response and routine maintenance in 2024.	2
Lbmp P P/G H - 08	Develop, implement and keep updated an online storm sewer map accessible to the public.	A public Stormwater Program Map remains available throughout the year on the City Stormwater webpage under the Stormwater Collection heading - https://lawrenceks.org/mso/stormwater/. The map shows MS4/City boundaries, stormwater assets and infrastructure (including pipes, open streams, inlets, outfalls, etc.), and indicates impaired [303(d), TMDL] streams/rivers with links to information regarding the impairment(s).	2
Lbmp P P/G H – 09	Identify permittee owned facilities, open space and buildings that can be retrofitted for stormwater BMPs.	Lawrence Parks and Recreation partnered with Grassland Heritage Foundation and Native Lands Restoration Collaborative for the Prairie Education and Restoration Project at the City's Prairie Park Nature Center. Project activities include the removal of invasive trees and plants, and reestablishing native prairie plants on a five-acre piece of parkland. In 2024, Prairie Park Native Restoration workdays included invasive species removal and wildflower planting. Workdays took place April 30, May 11, June 1, and June 11, 2024, at Prairie Park in Lawrence.	2

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

		The Parks and Recreation department (in conjunction with Native Lands Restoration Collaborative and Kansas Biological Survey) also maintains a ten-acre restoration area at the City-owned Mutt Run Dog Park, 1330 E 902 Rd. The restoration project started in July of 2021 and continues to provide a mix of native grasses and flowering plants that will provide nectar and habitat resources for pollinators, birds, and other wildlife.	
Lbmp P P/G H - 10	Install and operate a constructed wetland at a municipal facility such as at a parking lot, shop, maintenance facility, rest area or any other industrial/commercial type facility, e.g. recycling facility, transfer station, kennel, or airport.	Constructed City-owned wetlands currently in operation: • Located directly south of 711 E. 23rd Street (USD 497 Facilities and Operations Dept.). The area covers approximately 49,059 ft^2 • Located north of the Sandra J Shaw Community Health Park at 110 Maine St. The area covers approximately 4 acres.	1
Lbmp P P/G H - 11	Install a canopy or other covered area for load-out of salt or other de-icing chemicals where such de-icing materials are stored either within the permit area or a storage facility located within 30 miles of this permit area. The canopy or other covered area for load-out of salt or other de-icing materials may be installed at a facility owned by the permittee or at a facility owned by an entity the permittee contracts with as long as the facility is located within 30 miles of this permit area.	The City continues to operate from three covered storage areas for de-icing materials: • Farmland salt building (1608 N 1400 Rd) • Dome at Streets division (1120 Haskell Ave) • Dome at West 40 Fueling site (1901 Wakarusa Dr)	2
Lbmp P P/G H - 12	Install a stormwater treatment system for capture of either trash, sediment, or debris. Systems may include any proprietary stormwater treatment system including CDS, Hancor, Enviro 21, etc. or similar custom designed systems. A system can be installed at a single municipal storm sewer outfall or on the storm sewer line immediately upstream of the outfall to reduce the discharge of	In 2023, two Hydro International Downstream Defender vortex separator systems were installed at the city's Central Transit Station facility. The separators were maintained and operational throughout 2024. City staff also continue to maintain a filter basket to capture trash and debris inside a grate inlet in a curb-side parking area southwest of the intersection of 11th and Rhode Island St.	2

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

	floatables or other objects to receiving waters. Alternately, a system may be installed on a stormwater line to provide treatment at problem locations.		
TOTAL POINTS CLAIMED FOR MUNICIPAL POLLUTION PREVENTION / HOUSEKEEPING →			**17**

D. Total Maximum Daily Load (TMDL) Best Management Practices (BMPs)

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	
☑	☐	☐	Were any BMPs intended to reduce 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).

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

D. TMDL BMP Table

The BMPs listed in the below table should add up to a minimum of 6 points.

BMP ID NUMBER	BRIEF BMP DESCRIPTION	REGULATED TMDL PARAMETERS	PROGRESS ACHIEVING GOAL(S) (MEASURED RESULT)	POINTS CLAIMED
Lbmp T M D L - 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.	Bacteria, nutrients	The City currently maintains five pet waste bag stations that include signage and waste cans: • 4 - Mutt Run Dog Park (1330 E 902 Rd) • 1 - Riverfront Dog Park (North Second St. and Highways 24 and 40)	1
Lbmp T M D L - 03	Install and operate a constructed wetland.	Nutrients, sediment	In 2001, the City began constructing a wetland mitigation area in response to an expansion of the Lawrence Municipal Airport. This wetland, still in operation, is located north of the Sandra J Shaw Community Health Park at 110 Maine St. and covers approximately 4 acres. A constructed City-owned wetland is also currently in operation directly south of 711 E. 23rd Street (USD 497 Facilities and Operations Dept.). The area covers approximately 1 acre.	2
Lbmp T M D L - 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.	Bacteria, nutrients	The City's pet waste flyer is provided to all new adoptive dog owners at the Lawrence Humane Society. In 2024, 998 flyers were distributed. The document is also available on the City's stormwater program webpage throughout the year. Additionally, Municipal Services & Operations staff posted an educational pet waste social media post in June via the City's Facebook and X handles. The post received 4,039 impressions or views.	1

D. TMDL BMP Table

Lbmp T M D L - 06	Distribute “Only Rain Down the Drain” door hangers or similar document.	Any/all	A stormwater informational rack card was distributed at outreach events and made available at public meetings and other public locations (e.g., City Hall, Lawrence Public Library) throughout the year. Combined distribution of general stormwater (03/09, 04/17, 07/01, 09/13, 09/14) and fall leaves doorhangers (10/18, 10/30) and information rack cards during 2024 was estimated to be at least 35. Information from the general stormwater and fall leaves documents was also included in various City social media posts (IDDE and National Stormwater Day) and both remained accessible via the City’s stormwater webpage throughout the year (> 3 months).	2
Lbmp T M D L - 07	Inspect 10% of all known MS4 outfalls for dry weather discharges either annually or twice per year to identify potential illicit discharges.	Any/all	In 2024, EHS staff inspected 6 (or 10%) of the City’s 57 known MS4 outfalls for dry weather discharge. No dry weather discharges were observed during inspections.	3
Lbmp T M D L - 08	Implement an Alternative Stormwater Offsite Pollution Reduction Program.	Any/all	In 2021, the City received KDHE approval for an offsite pollution reduction project with the Upper Wakarusa Watershed Restoration and Protection Strategy (WRAPS) group. The City signed a cost-sharing agreement for $50,000 with Ducks Unlimited for the Shadden Marsh South Wetland project for source water protection work in the Upper Wakarusa Watershed to reduce nutrient and sediment runoff into Clinton Reservoir. The City pledged an additional $10,000 in-kind towards this project in 2022, including lab analysis of 36 samples. The Shadden Marsh project was completed in 2024.	4

D. TMDL BMP Table

Lbmp T M D L - 09	Implement a program to collect and properly dispose of litter, on four separate occasions per calendar year, within areas where littering has been identified as a problem. Such areas may include municipal parks, trails, rest areas, or other public lands owned by the permittee.	Any/all	The City was a major sponsor of the Friends of the Kaw River Cleanup event on 4/20/24. Over 100 volunteers (including City staff) participated in removing trash from the Kansas River riverbanks and Levee trail area. City Parks and Recreation coordinated park cleanups with at least 3 civic groups, student organizations, and neighborhood associations throughout the year. Most groups have 'adopted' a park or area, including Burrough's Creek Linear Park, South Park, and Edgewood Park in areas that are known to collect waste. As of 11/01/24 at least 10 clean up events took place in parks and waterside areas on either a one time or recurring basis. The Parks Division provides trash bags, gloves, sticks, and safety vests for volunteers. In mid-October 2024, City workers bulldozed and cleaned wooded areas used for camping for unhoused residents near the Amtrak Station along the Kansas River, as they were re-directed to supported living sites. Due to safety concerns, volunteers were not used. The intent was to remove significant waste near the river and restore the area as a bald eagle habitat. The City donated dumpster service to both Friends of the Kaw and the Kansas River cleanup efforts.	2
Lbmp T M D L - 11	Construct and maintain a structural BMP to reduce loadings of sediment and nutrients, including bioretention, detention basins, porous pavement, retention ponds, media filters and any composite treatment trains of multiple BMPs.	Any/all	In 2023, two Hydro International Downstream Defender vortex separators were installed at the City's new Transit Central Station (2315 Bob Billings Pkwy). The separators receive and treat flow via curb inlets at the station before draining into a newly constructed detention basin. In 2024, a stormwater retention basin BMP was constructed along the north side of the City's compost facility asphalt pad. The BMP consists of	6

D. TMDL BMP Table

			a wet storage (retention) basin, graded to receive stormwater runoff from the compost pad. There are three (3) rock check dam sediment traps along the north side of the compost pad.	
Lbmp T M D L - 12	Construct a stream bank stabilization project.	Sediment	In 2021, the City constructed over 550 linear feet of riverbank protection as part of the City's Kansas Riverbank Stabilization project (PW17-E9).	2
TOTAL POINTS CLAIMED FOR TMDL →				23

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

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

Upstream Site: Farwell Street Bridge over Charles River

Downstream Site: ArsenalStreet Bridge over Charles River

KEIMS Feature Name	*001A - Farwell*	*001B - Arsenal*
Local Description	*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.*	*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.*
Lat/Long Data Decimal & Degree Format		
Latitude	*42.367056°*	*42.358910°*
Longitude	*-71.218089°*	*-71.161087°*

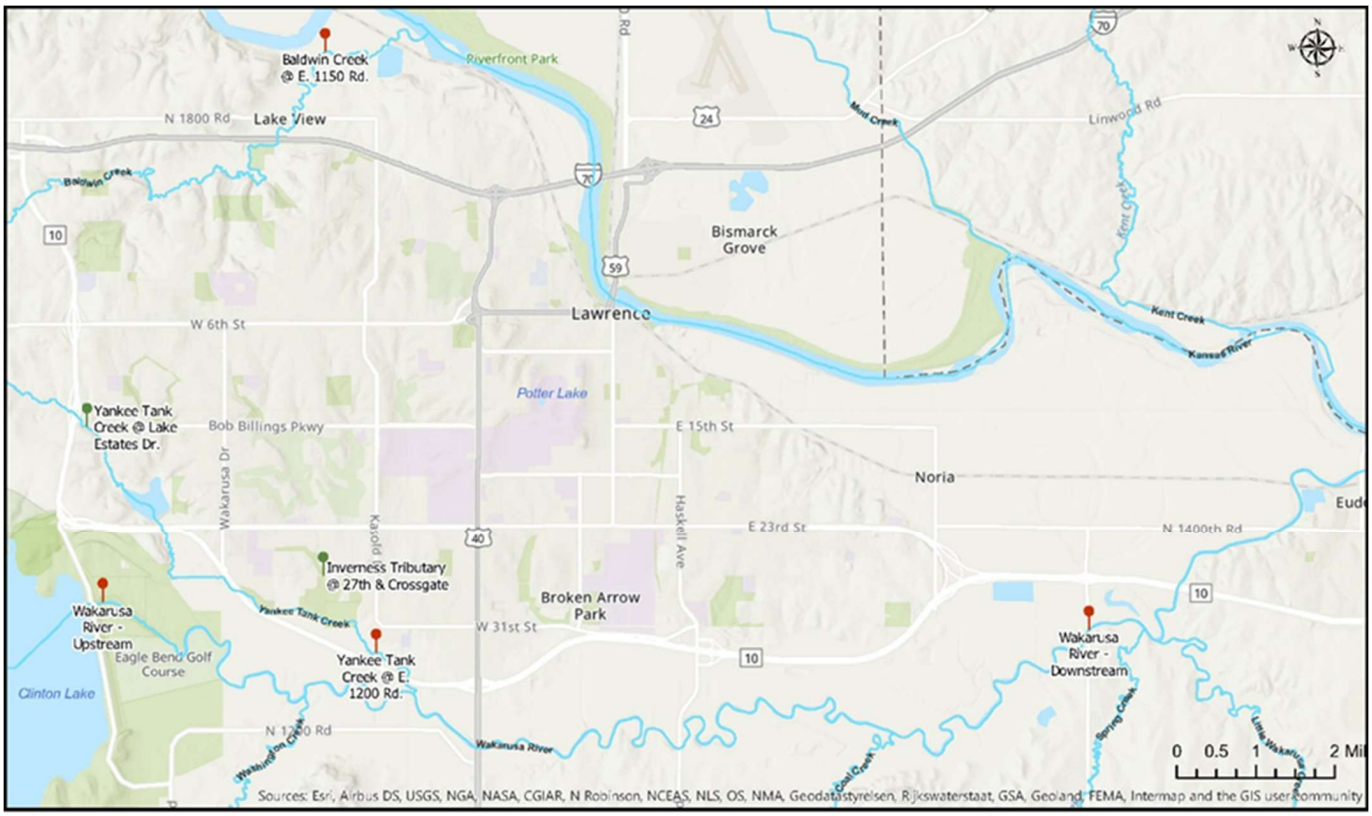
Please fill out table on the next page accordingly and review the example map and table on the previous page for reference. The Feature Names can be viewed in KEIMS under Discharge Monitoring Reports.

*Clearly label sites as upstream or downstream which are on the same stream/river.

Sample Site Information Tables

2024 City of Lawrence MS4 Stormwater Monitoring Summary:
The City of Lawrence performed stormwater sampling for five separate storm events during 2024 at six sampling sites. City staff collected samples during qualifying events (as described in the permit) from the four permit-required locations and two optional sites between March and October.

Under the current permit, wet weather surface water quality monitoring is required on Yankee Tank Creek, Wakarusa River, and Baldwin Creek. However, the Stormwater Management Plan indicates the City will also sample two optional locations, one on Inverness Creek and one upstream on Yankee Tank Creek, to supplement the required sampling data.



Legend

Stormwater Sample Points - Required
- Baldwin Creek @ E. 1150 Rd.
- Wakarusa River - Downstream
- Wakarusa River - Upstream
- Yankee Tank Creek @ E. 1200 Rd.

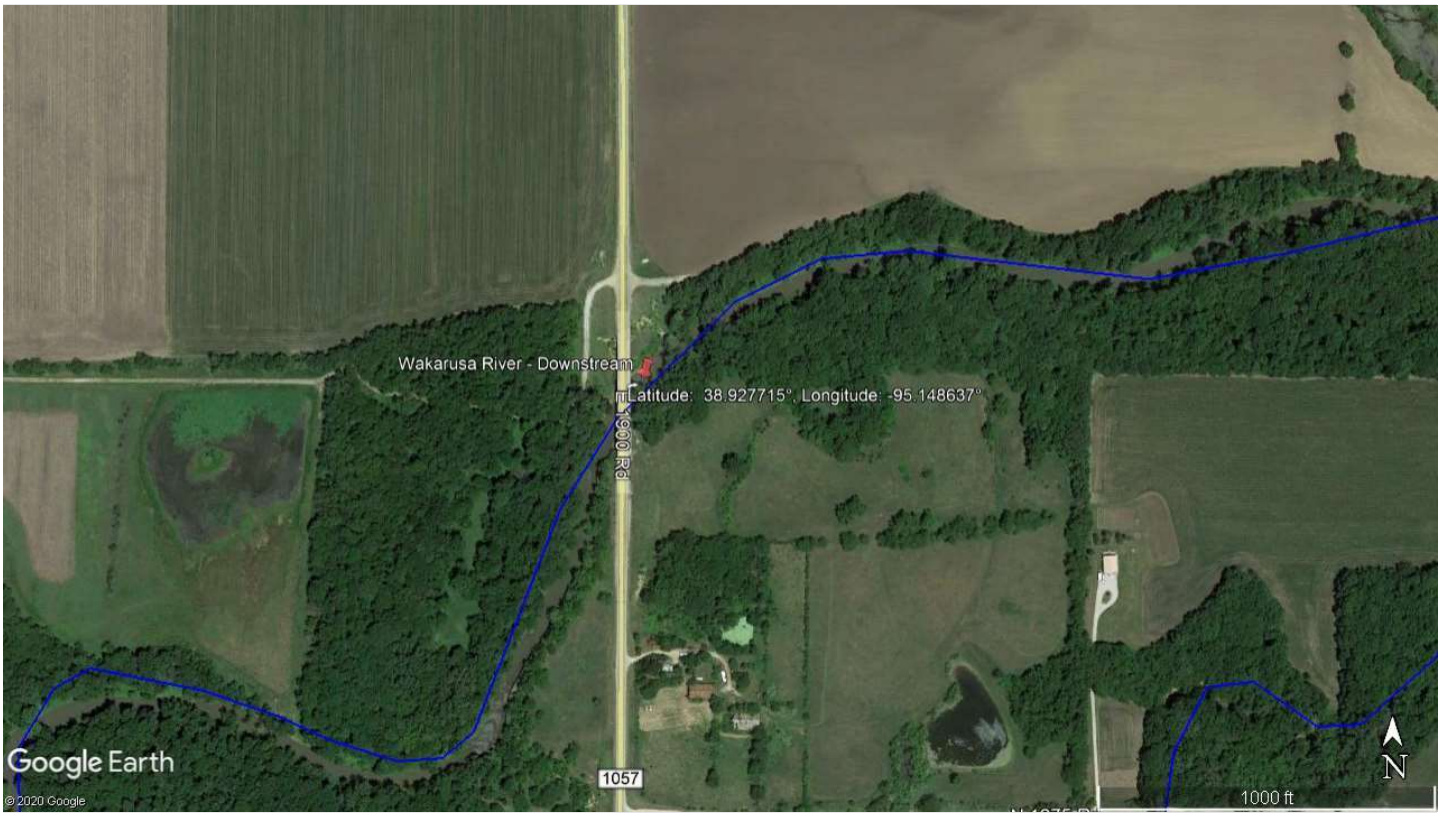
Stormwater Sample Points - Optional
- Inverness Tributary @ 27th & Crossgate
- Yankee Tank Creek @ Lake Estates Dr.

City of Lawrence
MUNICIPAL SERVICES & OPERATIONS

Stormwater Sampling Points 2020

Permit Required Sampling Locations:

KEIMS Feature Name	006A: Wakarusa River Upstream	
Local Description	Wakarusa River upstream at the outfall of Clinton Lake Reservoir.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	38.931568°	°
Longitude	-95.329182°	°



KEIMS Feature Name	006B: Wakarusa River downstream	
Local Description	Wakarusa River downstream at E. 1900 Rd.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	38.927715°	°
Longitude	-95.148637°	°

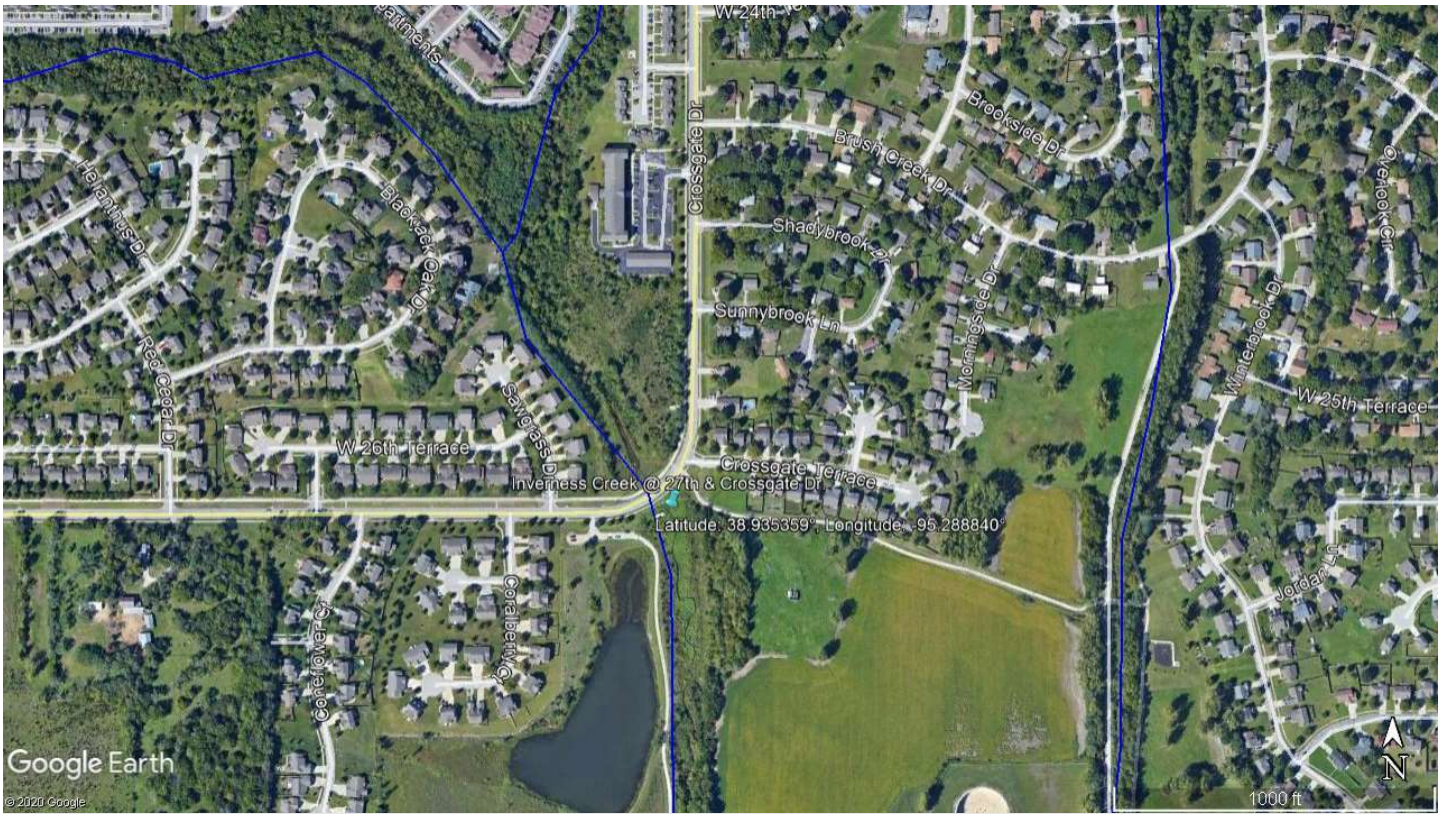
KEIMS Feature Name	007B: Baldwin Creek at E 1150 Rd	
Local Description	Baldwin Creek at E. 1150 Rd.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	39.010013°	°
Longitude	-95.288642°	°

KEIMS Feature Name	008B: Yankee Tank Creek at E 1200 R	
Local Description	Yankee Tank Creek at E. 1200 Rd.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	38.924441°	°
Longitude	-95.279076°	°

Copy and paste additional sample site information tables below as necessary.

City of Lawrence Optional Sampling Locations:

KEIMS Feature Name		
Local Description	Yankee Tank Creek at N.1500 Rd.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	38.956799°	°
Longitude	-95.332140°	°



KEIMS Feature Name		
Local Description	Inverness Creek at 27th and Crossgate Dr.	
Lat/Long Data Decimal Degree Format (not degree-minutes-seconds)		
Latitude	38.935359°	°
Longitude	-95.288840°	°

Municipal Services & Operations

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Municipal Separate Storm Sewer System Permit Executive Summary
Kansas Permit No.: M-KS31-SU01

The City of Lawrence is designated a Phase II community by the National Pollutant Discharge Elimination System (NPDES). Throughout 2024, the City continued to make progress in meeting the MS4 permit conditions in effect from December 1, 2019, through November 30, 2024.

The following summary covers the major aspects of the MS4 enacted during 2024.

1. **Were there any aspects of the program that appeared especially effective at reducing pollutants in your stormwater discharge?**

   - *City Parks and Recreation coordinated park cleanups throughout the year with civic groups, student organizations, and neighborhood associations. Most groups 'adopted' a park or area known to collect waste. In 2024, at least 10 clean up events took place in parks and waterside areas on either a one time or recurring basis.*

   - *Stormwater training for City staff in 2024 included 25 MSO staff completing a specialized training course for inspecting erosion and sediment controls on construction sites, with 21 staff earning qualified inspector credentials. Environmental staff also provided stormwater training to 13 City Transit and Parking Staff to increase awareness and reporting of potential illicit discharges from the field. Additionally, Environment staff presented proper power washing procedures for Parking staff performing downtown cleaning. Environment staff also engaged approximately 100 MSO employees regarding stormwater basics, pollution, and how to recognize and report illicit discharges at the department Safety Fair on 10/09/24.*

   - *All City streets were swept approximately 1-2 times in 2024 for a total of 2,485 lane miles swept and 6,789 cubic yards of sweepings collected. 1,969 cubic yards (443 tons) of the sweepings collected were leaves hauled to the City's compost facility. Also in 2024, the City purchased multiple roll-off containers specifically designated for collected street sweeping materials.*

2. **Were there any aspects of the program that provided unsatisfactory results?**
   No, the City implemented sufficient BMPs and programs as required for compliance.

3. **What was the most successful part of the program?**
   - *Continuing to improve communication, awareness, and collaboration across City departments about stormwater programs, concerns, and best practices.*
     - *Regular meetings and software collaboration groundwork has been established with Planning and Development Services regarding Construction site management and workflow.*
     - *Opportunities presented themselves to team up with Parks & Recreation (Native Tree Giveaway, Nature Center events, IPM discussion), as well as Solid Waste and Sustainability Departments for education and outreach events.*
   - *Continuing stormwater training for City staff, including the specialized erosion and sediment control training course completed by 25 MSO staff.*
   - *Hiring two new full-time Stormwater Program Administrator positions focusing on*

the Construction Site Runoff Control and Post-Construction/Redevelopment programs.

- *Partnering with Friends of the Kaw for interactive educational programming for area high school students.*
- *Hosting an electronic waste recycling event for over 1,000 participants.*
- *Providing targeted educational materials to high-risk businesses and MS4 residents.*
- *Hiring 4 interns to work in the City's Construction & Engineering and Water Quality/Regulatory Compliance divisions.*

4. **What was the most challenging aspect of the program?**
   - *Collaborating across City departments and contractors to prepare to implement and integrate new software programs into stormwater programs and tasks.*
   - *Preparing to implement the new Land Development Code, adopted in 2024, before it goes into effect in 2025.*

5. **Describe any City/County area MS4 clean-ups and the participation.**
   The City was a major sponsor of the annual Friends of the Kaw River Cleanup event on 4/20/24. Over 100 volunteers (including City staff) participated in removing trash from the Kansas River riverbanks and levee trail area.

   City Parks and Recreation coordinated park cleanups throughout the year with at least 3 civic groups, student organizations, and neighborhood associations. Most groups have 'adopted' a park or area, which included Burrough's Creek Linear Park, South Park, and Edgewood Park, in areas that are known to collect waste. In 2024, at least 10 clean up events took place in parks and waterside areas on either a one time or recurring basis. The Parks Dept. provides trash bags, gloves, sticks, and safety vests for volunteers.

   Additionally, Lawrence's Prairie Park Nature Center and Preserve, was the site of multiple "Community Prairie Restoration Days" throughout the year. Volunteer workdays included the removal of invasive trees and plants, seeding native plants, and education activities. These events, co-sponsored by Grassland Heritage and Native Lands Restoration, in partnership with Lawrence Parks & Recreation and others, were held on May 11, June 01, September 28, and October 27, 2024.

   In mid-October 2024, City workers bulldozed and cleaned wooded areas used for camping for unhoused residents near the Amtrak Station along the Kansas River, as they were re-directed to supported living sites. Due to safety concerns, volunteers were not used. The intent was to remove significant waste near the river and restore the area as a bald eagle habitat.

   The City donated dumpster service to both Friends of the Kaw and the Kansas River cleanup efforts.

6. **Describe the elected officials' participation in the stormwater pollution elimination.**

   The Lawrence City Commission review and approve municipal ordinances and budgets and receive regular updates from City staff on stormwater programs and projects. In 2021, Commissioners authorized the ongoing, multi-year stormwater system identification, assessment, and model creation program, which will include inspecting, mapping, and evaluating the condition of all storm sewer infrastructure via CCTV. Data and modeling from this project aim to improve the accuracy of City stormwater mapping, condition, and hydraulic capacity data and will guide the prioritization of future stormwater improvement projects.

Additionally, the two new full-time positions approved by the Lawrence City Commission in 2023 to support the Stormwater program were both filled in 2024. One position focuses on Construction Site Stormwater Runoff Control program administration, including erosion and sediment control, designs, training, site plan reviews, inspections, and enforcement. The second position focuses on program administration for Post-Construction Stormwater Management in New Development and Redevelopment, including inspection and maintenance programs, code revisions, site plan reviews, and Storm Water Pollution Prevention Plan reviews. Both positions will serve as technical experts for their respective areas and additionally assist with Pollution Prevention/ Good Housekeeping for Municipal Operations BMP implementation and inspection activities.

7. **Describe the collaboration with other organizations to eliminate stormwater pollution.**

   The City of Lawrence collaborates with the KAWS Upper Wakarusa Watershed Restoration and Protection Strategy (WRAPS) workgroup on source water protection and load reductions for Clinton Lake. Specifically, the City received KDHE approval in 2021 for an offsite pollution reduction project with the WRAPS workgroup, signing a cost-sharing agreement for $50,000 with Ducks Unlimited for the Shadden Marsh South Wetland project to reduce nutrient and sediment runoff into Clinton Reservoir. The pledged cost-share amount was paid in 2023. The City pledged an additional $10,000 in-kind towards this project in 2022, including analysis of 36 samples. Construction of the project began in 2023 and was completed in 2024.

   The City of Lawrence also entered into a service agreement with Friends of the Kaw (FOK) to provide Kids About Water (KAW) programming to Lawrence students at Lawrence High School and Free State High School for the 2023-2024 & 2024-2025 school years. The overall focus of this hands-on, interactive program is to develop an understanding of water quality, watersheds, and stormwater runoff in the school community and the relationship between runoff, pollution, and water quality. In spring of 2024, six classes, at least 150 students, (9% of 23/24 enrollment at Lawrence High School) participated in program classroom learning, stormwater runoff calculations and demonstration, as well as stream sample collection and data analyses. In the fall, five classes, an additional 116 students (6.7% of 24/25 enrollment) at Lawrence Free State High School completed the same training program.

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 City's MS4 program was not audited or inspected in 2024.

Municipal Services & Operations

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Municipal Separate Storm Sewer System Recordkeeping and Reporting
Kansas Permit No.: M-KS31-SU01

The City of Lawrence is designated a Phase II community by the National Pollutant Discharge Elimination System (NPDES). Throughout 2024, the City continued to make progress in meeting the MS4 permit conditions in effect from December 1, 2019, through November 30, 2024.

The following summary addresses the Recordkeeping and Reporting section of the Stormwater MS4 Annual Report submission form in KEIMS.

1. **A general assessment of the appropriateness of the various BMPs included for each of the major program elements as follows:**

   The City of Lawrence pursued implementation of BMPs for each MCM based on the appropriateness of the BMP to the size and specified TMDL pollutants of our MS4. See tables in the City's annual report for details regarding implementation of BMPs.

   a. **TMDL regulated pollutants**
   b. **Public Education and Outreach**
   c. **Public Involvement and Participation**
   d. **Illicit Discharge Detection and Elimination**
   e. **Construction Site Stormwater Runoff Control**
   f. **Post-Construction Site Stormwater Management in New Development and Redevelopment**
   g. **Pollution Prevention/Good Housekeeping for Municipal Operations**
   h. **A map of surface water sampling locations with an information table is to be attached with this report (if surface water monitoring is required by the permit). An example map and table is included with this report to illustrate the preferred method of completion.**

      See page 40 of the City of Lawrence annual report for maps and tables of sampling site locations.

   Issues which may be addressed include:
   a. **Are the BMPs appropriate for the local population?**
   b. **Are the BMPs appropriate for the pollution sources?**
   c. **Are there specific concerns related to the local receiving waters that may justify a change in BMPs?**

2. **An assessment of the effectiveness of the BMPs towards achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP).**

   Based on implemented BMPs as noted in our SMP, we are achieving progress towards the statutory goal of reducing the discharge of pollutants to the MEP. Assessment of surface water monitoring data is on-going.

3. **Provide a summary of results of information collected and analyzed, if any, during the reporting period, including any monitoring data used to assess the**

success of the SMP.

See 2024 City of Lawrence Wet Weather Monitoring Summary Report.

4. **Provide a summary of the planned changes in stormwater activities which are scheduled to be undertaken during the next annual reporting cycle. This should address the implementation of new BMPs and/or the deletion of BMPs and include a projected schedule for the month or quarter when the BMP will be either implemented or discontinued. Please note a revised SMP should be submitted for KDHE review if BMPs are revised.**

   In the next permit cycle, the City of Lawrence plans to enact additional requirements for sediment and erosion control plans, land disturbances, post-construction maintenance agreements, and stream drainage setbacks as part of a newly adopted Land Development Code that will go into effect in 2025 (BMP 4.01, 5.04). The City also plans to adopt design manuals for erosion and sediment control BMPs and post construction BMPs, including a list of structural and non-structural BMPs that will be required for any development or re-development projects (BMP 4.02, 5.01, 5.02). These planned changes will be reflected in a revised SMP, which the City will submit to KDHE once completed. The SMP submitted with the 2024 annual report has been updated to reflect points earned for BMP implementation in 2024.

5. **Provide a list of other municipalities/contractors, if any, which will be responsible for implementing any of the program areas of the SMP.**

   KAWS Upper Wakarusa WRAPS group, Ducks Unlimited, and Friends of the Kaw. See 2024 City of Lawrence Executive Summary Report.

Municipal Separate Storm Sewer System Permit Annual Summary
Kansas Permit No.: M-KS31-SU01

The City of Lawrence is designated a Phase II community by the National Pollutant Discharge Elimination System (NPDES), with its original Municipal Separate Storm Sewer System (MS4) Permit taking effect on October 1, 2004.

Municipal Services & Operations

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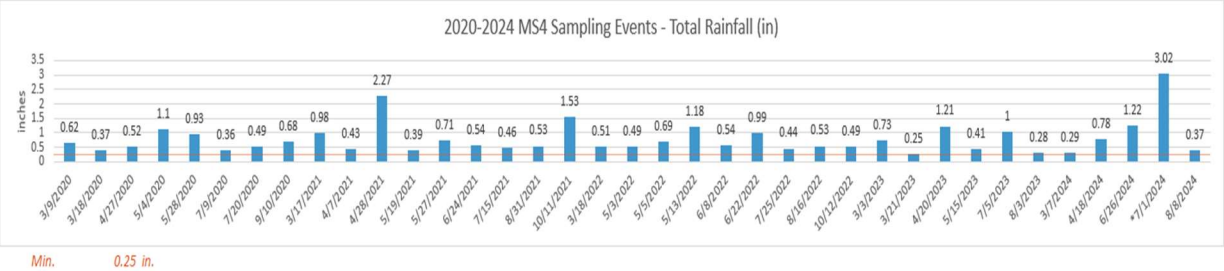
In late 2019, the Environment, Health, and Science (EHS) section of the Municipal Services and Operations (MSO) department became the point of contact for all the City's MS4 permit implementation and compliance efforts, including wet weather surface water monitoring. This report covers wet weather monitoring events and data from March 2020, through August 2024, and serves as an update to the summary report submitted for 2023.

2020-2024 City of Lawrence MS4 Stormwater Monitoring Data Summary:

From 2020 through 2024, the City of Lawrence performed wet weather sampling for 37 separate storm events with at least 0.25" of rainfall. EHS staff collected samples during qualifying events (as described in the permit) from the four permit-required locations and two optional sites between March and October of each year. Under the current permit, Lawrence no longer conducts wet weather surface water quality monitoring on the Kansas River.

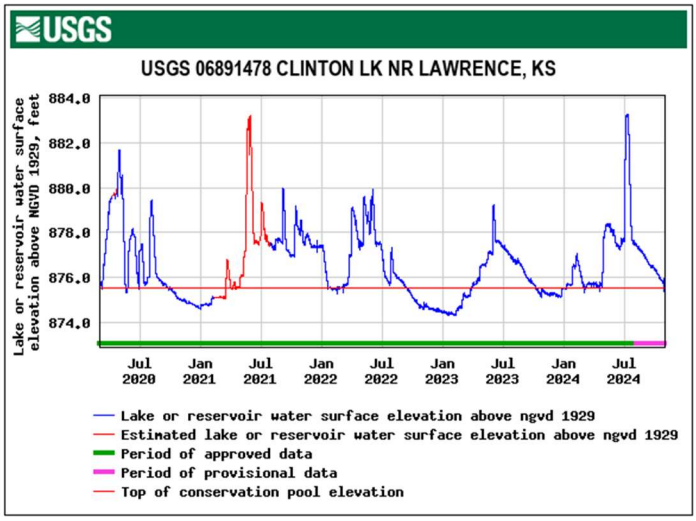
Figure 1. 2020-2024 Rainfall Totals by MS4 Sampling Event.



Permit Required (and Optional) Site Sampling Data:

Wakarusa River: Comparison data between the upstream and downstream sampling sites on the Wakarusa River for samples collected on the same day show significant differences in the upstream and downstream data. With few exceptions, downstream concentrations are higher than the upstream concentrations during all sampling events for all parameters. The downstream data is highly reflective of the loadings contributed by the City of Lawrence and the contributing agricultural areas (nonpoint sources) outside of the Lawrence jurisdictional boundary. The upstream site reflects the water quality of the controlled discharge of Clinton Lake and does not characterize wet weather impacts on streams within the watershed.

Figure 2. Clinton Lake surface water elevations from March 2020 through October 2024.



Figures 3 through 12 show a comparison summary of the Total Phosphorous (TP), Total Nitrogen (TN), Total Suspended Solids (TSS), and *E. coli* data on the Wakarusa River:

Figure 3. Wakarusa River Total Phosphorus Data.

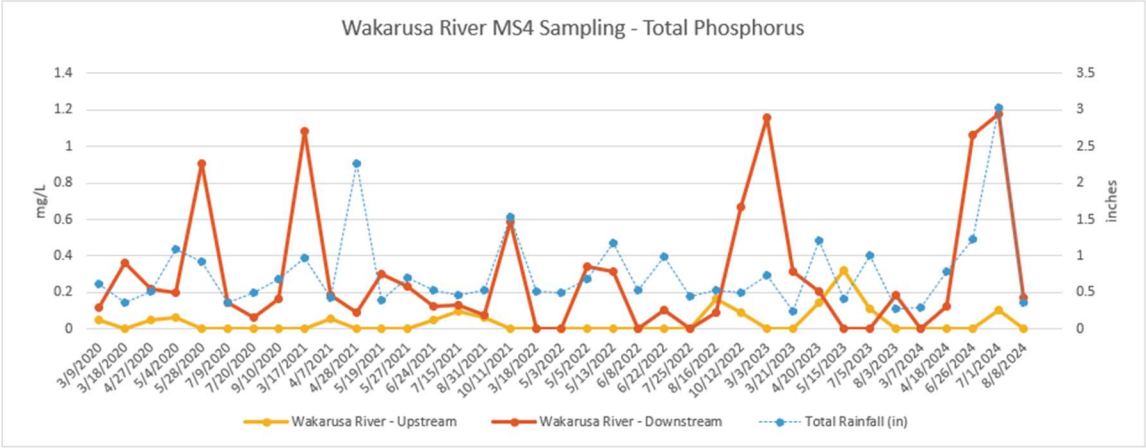
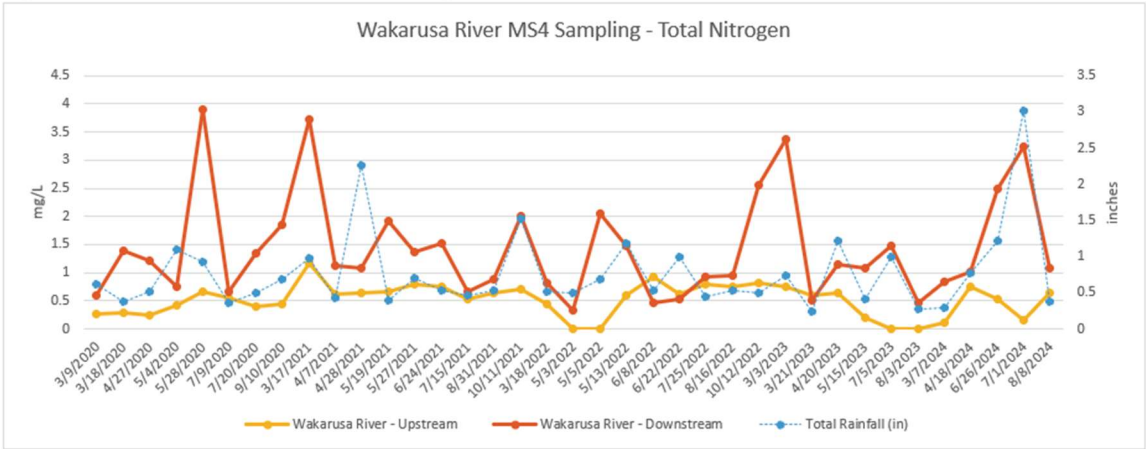
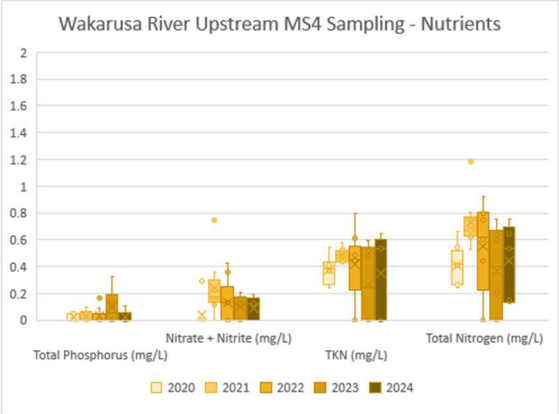


Figure 4. Wakarusa River Total Nitrogen Data.



Figures 5 and 6. Wakarusa River Upstream and Downstream Nutrient Data by Year



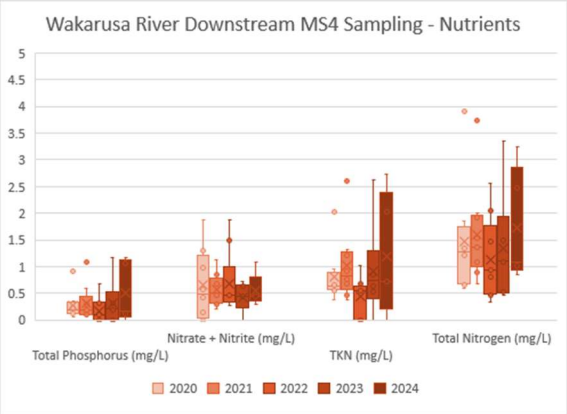
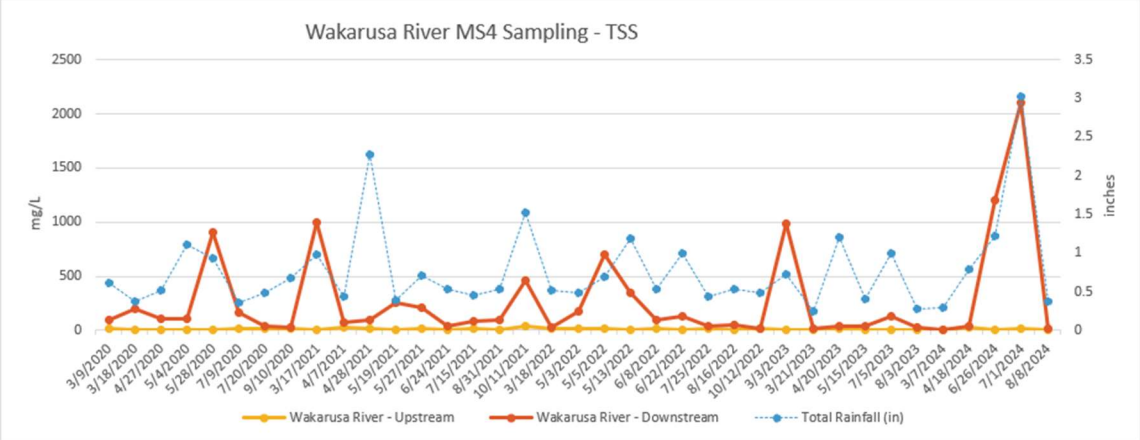
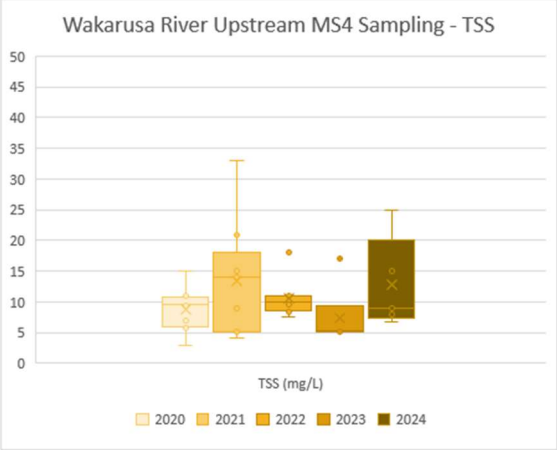


Figure 7. Wakarusa River Total Suspended Solids Data.



Figures 8 and 9. Wakarusa River Upstream and Downstream Total Suspended Solids Data by Year.



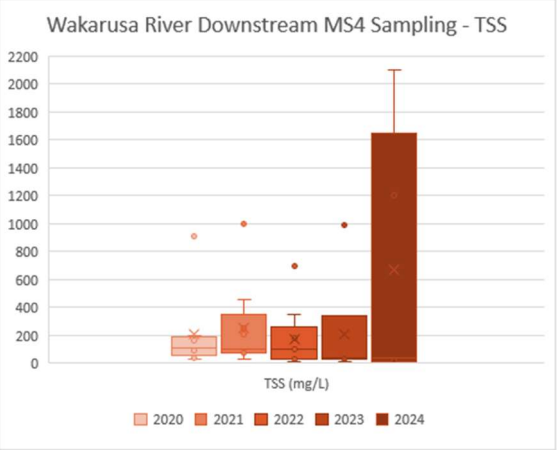
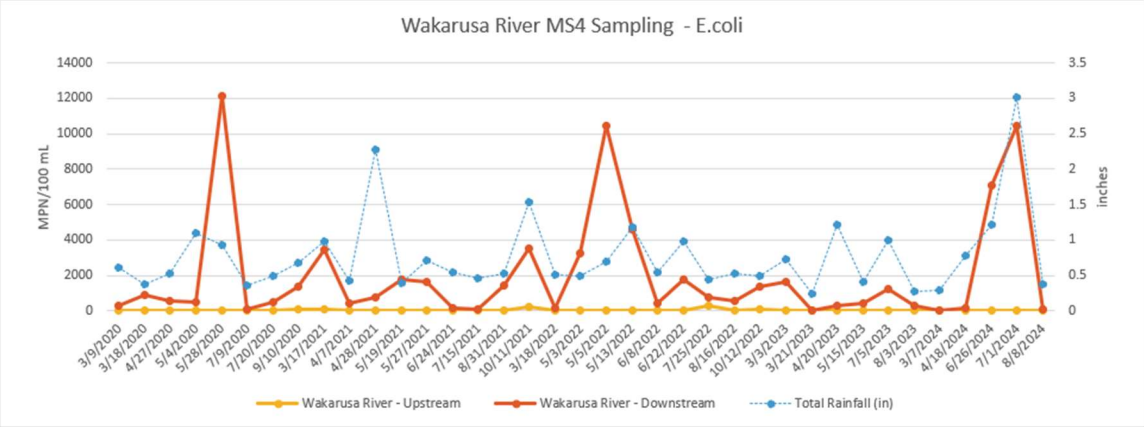
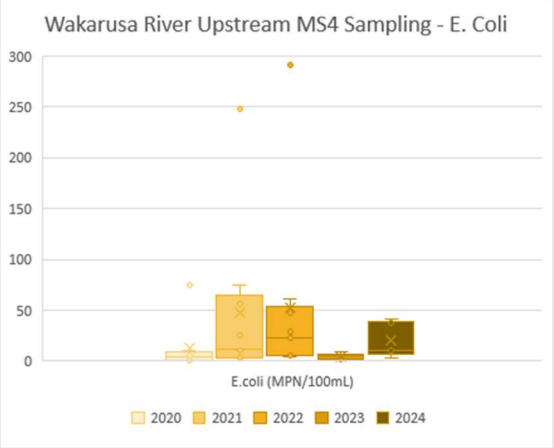
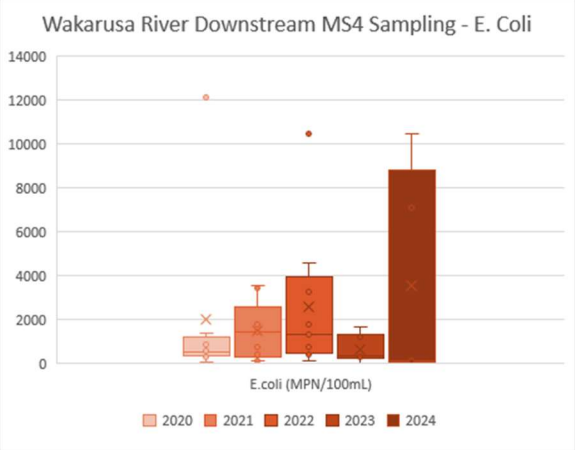


Figure 10. Wakarusa River E. coli Data



Figures 11 and 12. Wakarusa River Upstream and Downstream E. coli Data by Year





Baldwin Creek: Sampling data for the Baldwin Creek site shows general increases in nutrients and bacteria corresponding with higher rainfall events, apart from the March 17 sampling event in 2021, which showed an uncharacteristically high *E. coli* concentration compared to all other sampling events at this site.

Located to the northwest of the MS4 permit area, concentrations at this site are generally reflective of loadings contributed from sources outside of the Lawrence jurisdictional boundary. The addition of this sampling site during 2020 helps differentiate the MS4 and nonpoint source load contributions to the Wakarusa River during stormwater runoff events. No sample was collected from Baldwin Creek on 7/1/2024, as the sample site was inaccessible due to flooding over the roadway.

Figures 13 through 17 show a comparison summary of the TP, TN, and *E. coli* data on Baldwin Creek:

Figure 13. Baldwin Creek Total Phosphorus Data

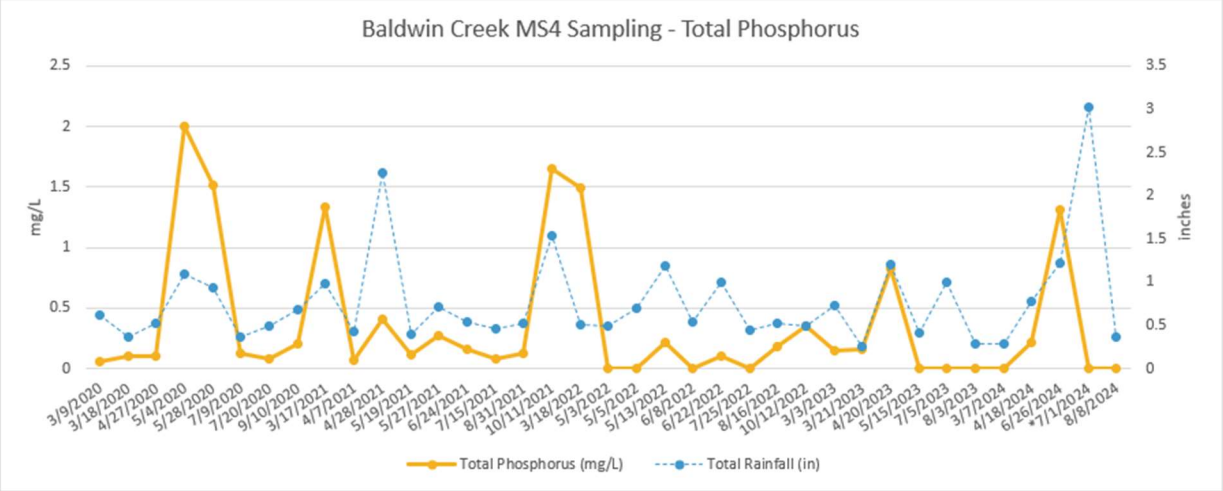


Figure 14. Baldwin Creek Total Nitrogen Data

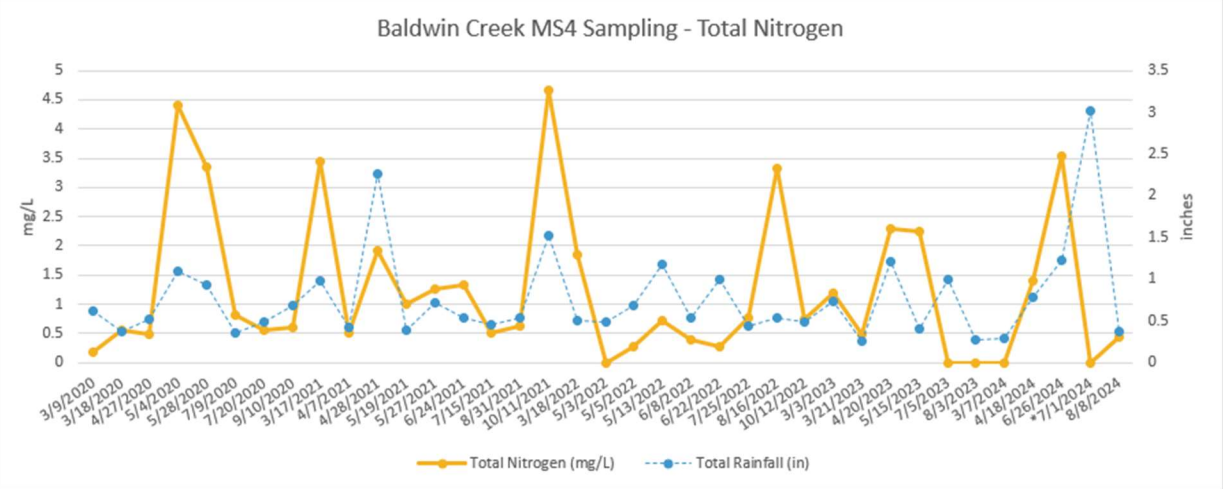


Figure 15. Baldwin Creek Nutrient Data by Year

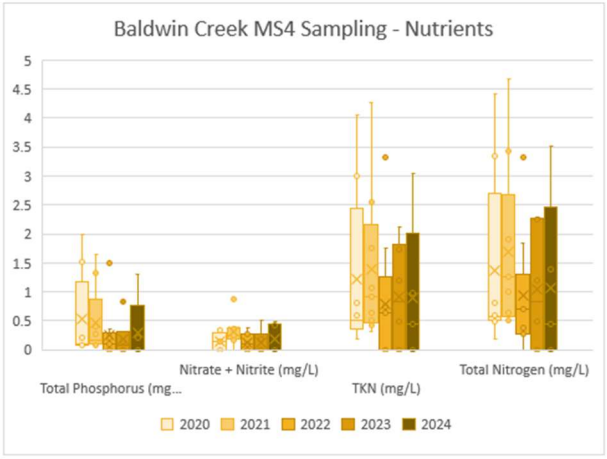


Figure 16. Baldwin Creek E. coli Data

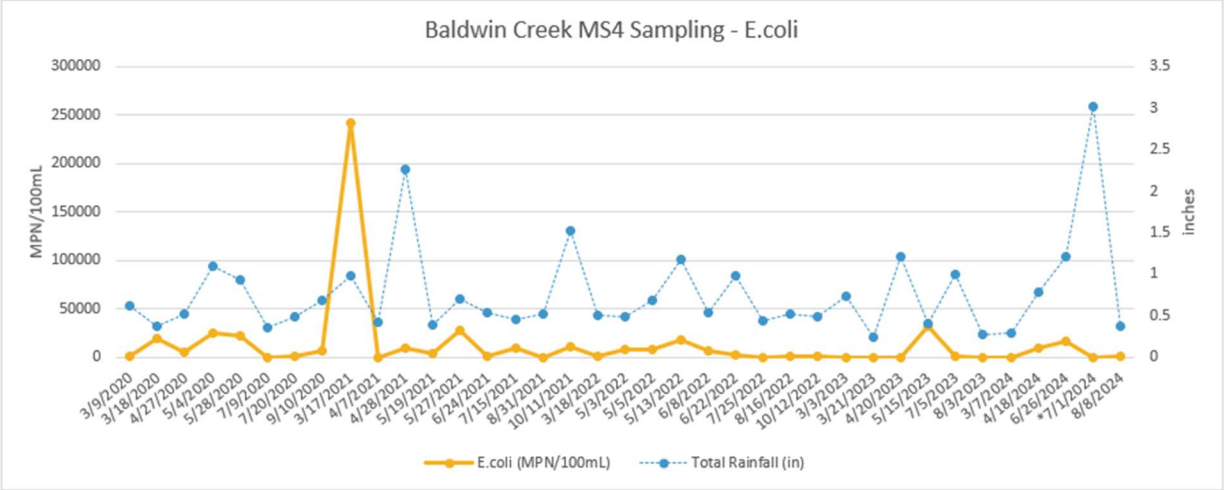
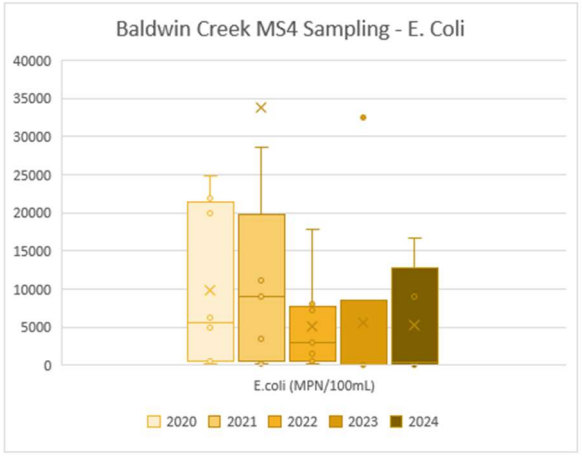


Figure 17. Baldwin Creek E. coli Data by Year



Yankee Tank Creek: Comparison data between the downstream and (optional) upstream sampling sites on Yankee Tank Creek for samples collected on the same day show similar trends in upstream and downstream data. However, average upstream concentrations generally remain lower than downstream concentrations across all parameters except for total phosphorus concentrations on two sampling events, total nitrogen concentrations on seven sampling events, and *E. coli* concentrations on four sampling events.

The addition of this sampling site during 2020 helps differentiate the MS4 and nonpoint source load contributions to the Wakarusa River during stormwater runoff events.

Figures 18 through 26 show a comparison summary of the TP, TN, and *E. coli* data for Yankee Tank Creek, and the two optional sampling sites, Yankee Tank Creek-Upstream and Inverness Creek:

Figure 18. Yankee Tank Creek, Inverness Creek Total Phosphorus Data

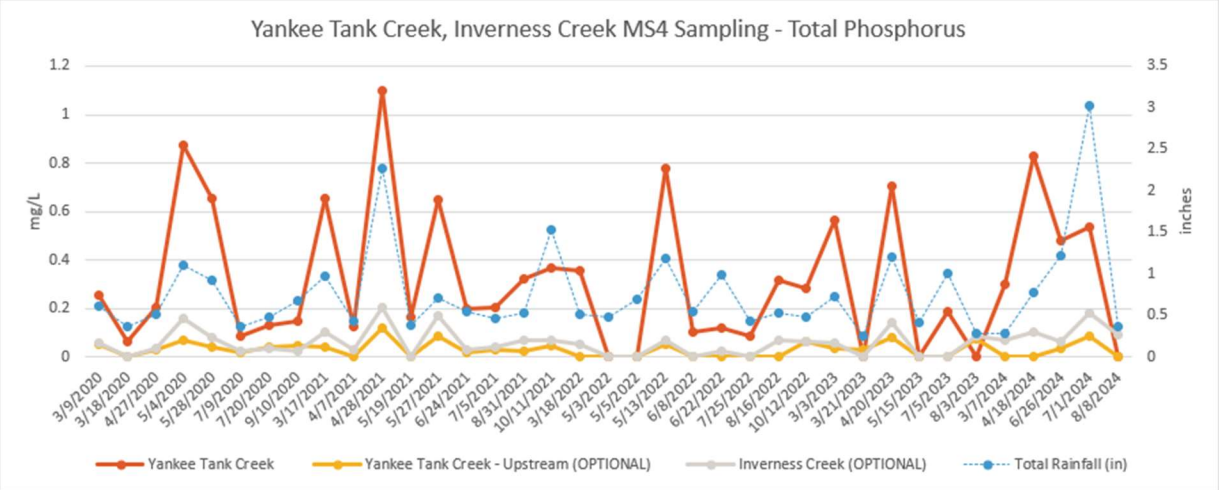
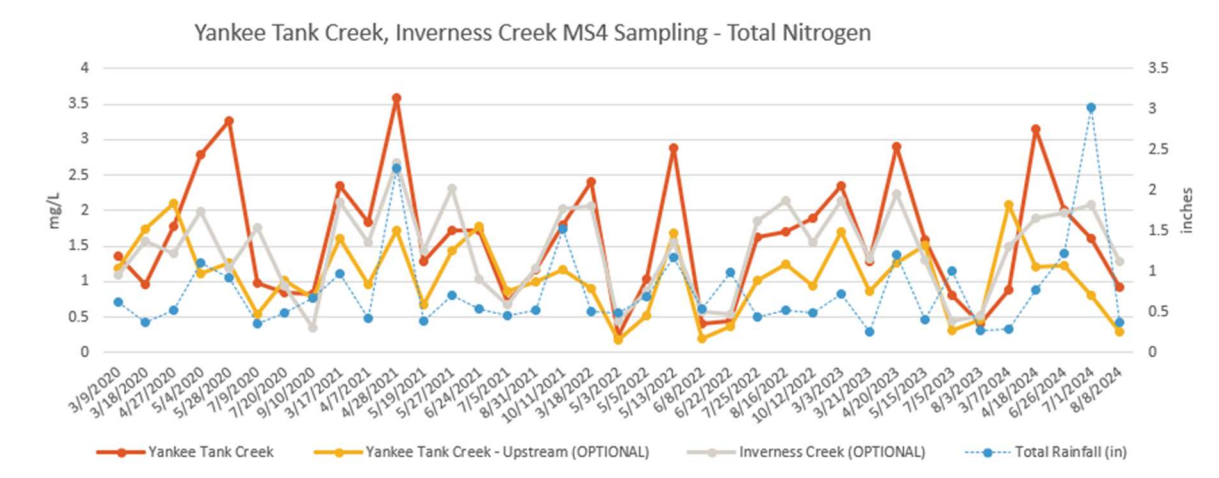
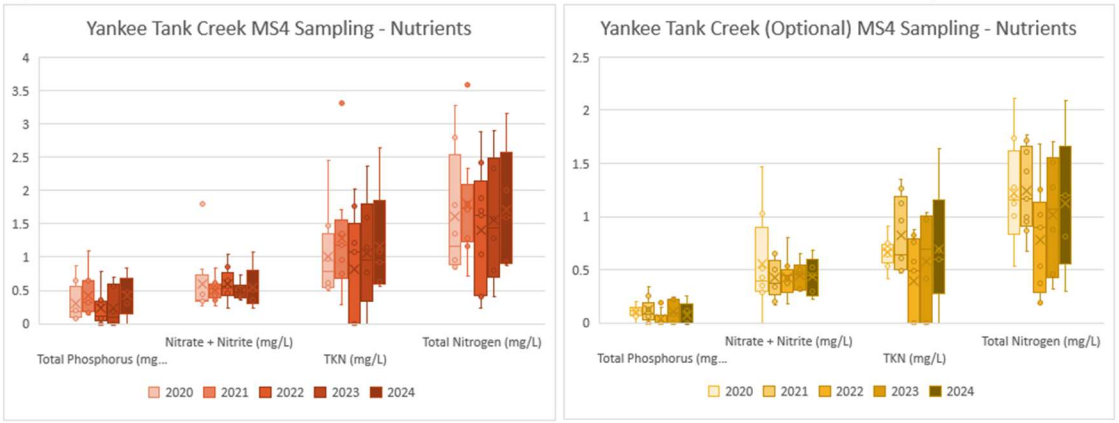


Figure 19. Yankee Tank Creek, Inverness Creek Total Nitrogen Data



Figures 20, 21, and 22. Yankee Tank Creek, Inverness Creek Nutrients Data by Year



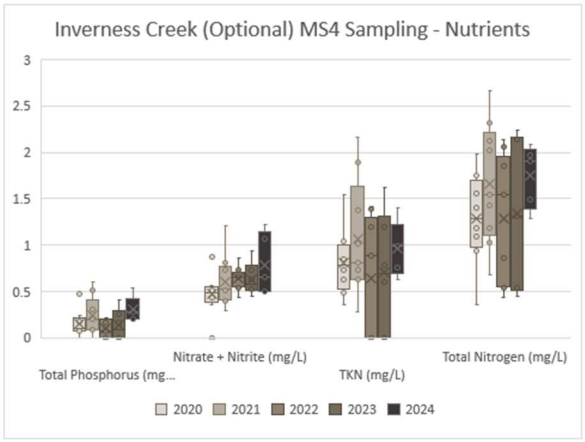
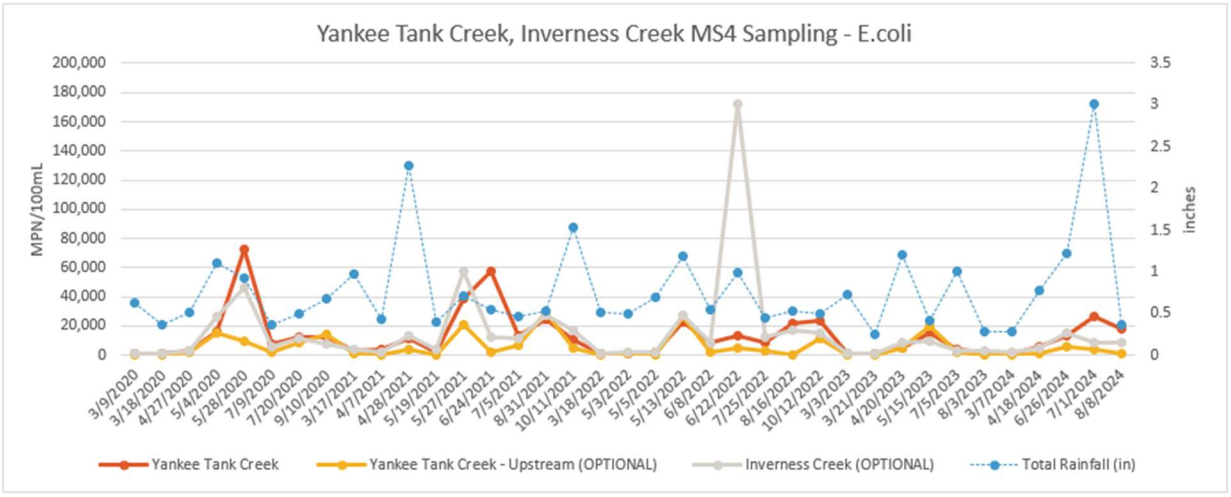
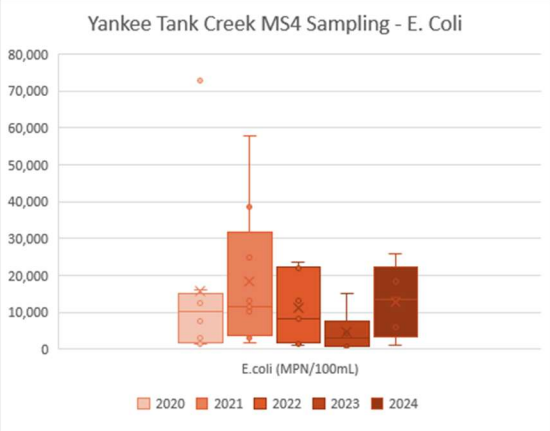
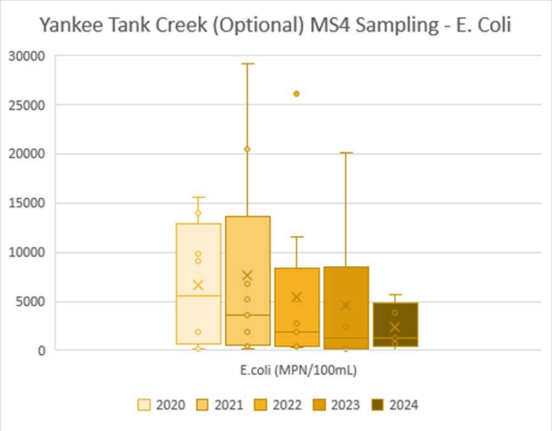


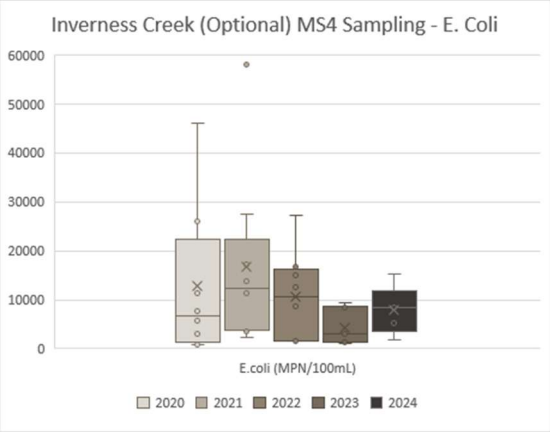
Figure 23. Yankee Tank Creek, Inverness Creek E. coli Data



Figures 24, 25, and 26. Yankee Tank Creek, Inverness Creek E. Coli Data by Year.







An outlying E. coli concentration of 172,3000 MPN/100mL from the June 22, 2022, sampling event has been omitted from the Inverness Creek graph.

Tables of MS4Sampling Data

Wakarusa River - Upstream												
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	TSS (mg/L)	Turbidity (NTU)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.049	<=0.100	0.263	0.263	15	12	1	0.62	7.14	250	Steady	Normal
3/18/2020	<=0.0400	<=0.100	0.286	0.286	5.7	6.5	1	0.37	5.83	7	Steady	Still
4/27/2020	0.048	<=0.100	0.24	0.24	3	6	6	0.52	5.86	21	Steady	Normal
5/4/2020	0.0620	<=0.100	0.422	0.422	9.30	16	2	1.1	15.4	2,000	Steady	Rapid
5/28/2020	<=0.0400	0.294	0.368	0.662	6.90	6.6	10	0.93	10.4	21	Steady	Still
7/9/2020	<=0.0400	<=0.100	0.548	0.548	11.00	8.7	1	0.36	10.7	1000	Steady	Rapid
7/20/2020	<=0.0400	<=0.100	0.408	0.408	9.90	10	6	0.49	4.99	21	Steady	Normal
9/10/2020	<=0.0400	<=0.100	0.439	0.439	10.00	9.9	75	0.68	5.22	21	Steady	Normal
3/17/2021	<=0.0400	0.743	0.438	1.18	5.1	5.9	75	0.98	7.67	7	Steady	Still
4/7/2021	0.057	0.139	0.480	0.619	21	19	3	0.43	4.97	50	Steady	Normal
4/28/2021	<=0.0400	0.156	0.483	0.639	14	14	10	2.27	6.39	306	Steady	Normal
5/19/2021	<=0.0400	0.239	0.434	0.673	4.10	5.8	12	0.39	5.99	243	Steady	Normal
5/27/2021	<=0.0400	0.363	0.439	0.802	14.00	8.5	25	0.71	19.15	3410	Steady	Rapid
6/24/2021	0.051	0.173	0.574	0.747	5.10	8.3	1	0.54	4.56	21	Steady	Normal
7/15/2021	0.099	<=0.100	0.527	0.527	15.00	14	3	0.46	8.06	611	Rising	Rapid
8/31/2021	0.066	0.117	0.513	0.63	9.00	13	56	0.53	5.1	79	Steady	Normal
10/11/2021	<=0.0400	0.222	0.486	0.708	33.00	15	248	1.53	7.1	420	Rising	Rapid
3/18/2022	<=0.0700	<0.100	0.445	0.445	10	7.4	4	0.51	5.19	25	Steady	Normal
5/3/2022	<=0.0700	<0.100	<=0.400	<=0.100	11	15	6	0.49	4.87	21	Falling	Rapid
5/5/2022	<=0.0700	<0.100	<=0.400	<=0.100	11	14	6	0.69	7.66	21	Steady	Normal
5/13/2022	<=0.0700	0.145	0.454	0.599	9	12	29	1.18	13	1,000	Steady	Rapid
6/8/2022	<=0.0700	0.426	0.496	0.922	11	9.2	10	0.54	14	2000	Steady	Rapid
6/22/2022	<=0.0700	0.139	0.484	0.623	8.30	8.5	23	0.99	4.71	21	Steady	Still
7/25/2022	<=0.0700	<0.100	0.798	0.798	9.50	8.4	291	0.44	5.03	21	Steady	Normal
8/16/2022	0.166	0.133	0.615	0.748	7.60	7.2	47	0.53	4.86	21	Rising	Normal
10/12/2022	0.088	0.358	0.452	0.810	18.00	20	61	0.49	4.79	7	Steady	Normal
3/3/2023	<=0.0700	0.16	0.591	0.751	5.2	4.8	4	0.73	6.92	7	Steady	Normal
3/21/2023	<=0.0700	0.113	0.479	0.592	6.8	7.3	6	0.25	4.82	7	Rising	Rapid
4/20/2023	0.143	0.115	0.523	0.638	17	16	9	1.21	5.96	21	Steady	Normal
5/15/2023	0.32	0.21	<=0.400	0.21	5.2	5.2	6	0.41	5.29	21	Steady	Normal
7/5/2023	0.109	<0.100	<=0.400	<=0.100	5.1	7.4	2	1	4.69	21	Falling	Normal
8/3/2023	<=0.0700	<0.100	<=0.400	<=0.100	5.50	6.7	<1	0.28	4.64	21	Rising	Rapid
3/7/2024	<=0.0800	0.12	<=0.400	0.12	9	6.4	3	0.29	4.57	7	Steady	Normal
4/18/2024	<=0.0800	0.191	0.564	0.755	25	15	11	0.78	4.88	21	Steady	Normal
6/26/2024	<=0.0800	<0.100	0.535	0.535	6.7	6	38	1.22	5.98	258	Steady	Normal
7/1/2024	0.106	0.147	<=0.400	0.147	15	9.6	41	3.02	18.5	3,250	Steady	Normal
8/8/2024	<=0.0800	<0.100	0.642	0.642	8	8.8	10	0.37	4.72	39.3	Rising	Rapid

Wakarusa River - Downstream												
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	TSS (mg/L)	Turbidity (NTU)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.119	<=0.100	0.596	0.596	97	52	308	0.62	7.21	404	Rising	Rapid
3/18/2020	0.363	0.421	0.966	1.39	200	140	882	0.37	5.88	195	Steady	Normal
4/27/2020	0.221	0.567	0.653	1.22	110	72	579	0.52	5.84	189	Steady	Normal
5/4/2020	0.199	0.147	0.594	0.741	110	52	517	1.1	15.5	2,170	Rising	Rapid
5/28/2020	0.909	1.88	2.03	3.91	910	470	12,100	0.93	10.5	1.05	Rising	Normal
7/9/2020	0.145	<=0.100	0.663	0.663	160	64	111	0.36	10.69	1,090	Steady	Normal
7/20/2020	0.061	0.969	0.381	1.35	40	27	479	0.49	5.06	73	Rising	Normal
9/10/2020	0.166	1.3	0.558	1.86	29	23	1,374	0.68	5.17	87	Steady	Normal
3/17/2021	1.08	1.13	2.6	3.73	1,000	950	3,450	0.98	7.8	369	Rising	Rapid
4/7/2021	0.186	0.293	0.834	1.13	72.0	53	435	0.43	4.96	76.6	Steady	Normal
4/28/2021	0.0900	0.323	0.763	1.09	99	26	794	2.27	7.54	498	Rising	Normal
5/19/2021	0.301	0.698	1.21	1.91	250	130	1,785	0.39	5.99	242	Rising	Normal
5/27/2021	0.232	0.462	0.906	1.37	210	110	1,607	0.71	19.2	3490	Rising	Rapid
6/24/2021	0.122	0.857	0.669	1.53	33	24	167	0.54	4.59	39	Rising	Normal
7/15/2021	0.134	0.21	0.461	0.671	86	36	114	0.46	8.07	613	Rising	Rapid
8/31/2021	0.076	0.503	0.386	0.889	90	37	1,467	0.53	5.15	85	Steady	Normal
10/11/2021	0.583	0.675	1.33	2	460	220	3,550	1.53	7.1	420	Rising	Rapid
3/18/2022	<=0.0700	0.264	0.547	0.811	27	16	148	0.51	5.15	90.5	Steady	Normal
5/3/2022	<=0.0700	0.331	<=0.400	0.331	180.0	100	3,255	0.49	4.87	57.7	Falling	Normal
5/5/2022	0.340	1.49	0.564	2.05	700	370	10,460	0.69	7.56	497	Falling	Rapid
5/13/2022	0.314	0.461	1.01	1.47	350	190	4,611	1.18	12.9	1,680	Steady	Rapid
6/8/2022	<=0.0700	0.456	<=0.400	0.456	100	49	439	0.54	14	1960	Steady	Normal
6/22/2022	0.105	0.524	<=0.400	0.524	130	96	1,789	0.99	4.73	40	Steady	Normal
7/25/2022	<=0.0700	0.380	0.557	0.937	40	34	754	0.44	5.23	93.9	Rising	Normal
8/16/2022	0.0920	0.339	0.603	0.942	55	41	554	0.53	4.87	54	Rising	Normal
10/12/2022	0.669	1.88	0.680	2.56	14	12	1,354	0.49	4.71	38.5	Falling	Normal
3/3/2023	1.16	0.727	2.63	3.36	990	660	1,670	0.73	6.98	434	Rising	Rapid
3/21/2023	0.314	<0.100	0.519	0.519	16.0	13	37	0.25	4.78	53.9	Steady	Normal
4/20/2023	0.209	0.309	0.842	1.15	41	38	326	1.21	5.89	218	Steady	Normal
5/15/2023	<=0.0700	0.44	0.642	1.08	43	24	435	0.41	5.25	99	Falling	Normal
7/5/2023	<=0.0700	0.625	0.86	1.48	130	94	1,250	1	4.66	36	Falling	Normal
8/3/2023	0.185	0.46	<=0.400	0.46	31	27	308	0.28	4.65	35	Steady	Normal
3/7/2024	<=0.0800	0.432	0.412	0.844	8.20	16	56	0.29	4.63	32	Rising	Normal
4/18/2024	0.126	0.295	0.73	1.02	38.0	21	142	0.78	4.95	60.8	Steady	Normal
6/26/2024	1.060	0.45	2.03	2.48	1200	660	7,120	1.22	5.66	186	Falling	Normal
7/1/2024	1.180	0.503	2.74	3.24	2100	1700	10,460	3.02	18.8	3,300	Rising	Rapid
8/8/2024	0.172	1.090	<=0.400	1.09	18	15	122	0.37	4.75	41.8	Steady	Normal

Baldwin Creek										
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.061	<=0.100	0.188	0.188	573	0.62	2	44	Rising	Rapid
3/18/2020	0.097	0.14	0.408	0.548	19,890	0.37	2	53	Steady	Rapid
4/27/2020	0.097	0.151	0.332	0.483	4,884	0.52	4	48	Rising	Rapid
5/4/2020	2.00	0.351	4.06	4.41	24,810	1.1	4.5	31	Rising	Rapid
5/28/2020	1.51	0.340	3.00	3.34	21,870	0.93	5	225	Rising	Rapid
7/9/2020	0.123	<=0.100	0.81	0.805	219	0.36	2	25	Steady	Normal
7/20/2020	0.08	0.133	0.42	0.552	816	0.49	1	12	Rising	Rapid
9/10/2020	0.205	<=0.100	0.61	0.605	6,240	0.68	0.5	23	Steady	Rapid
3/17/2021	1.33	0.877	2.56	3.44	242,000	0.98	2	76	Rising	Rapid
4/7/2021	0.0710	<=0.100	0.504	0.504	178	0.43	0.25	11	Rising	Rapid
4/28/2021	0.41	0.164	1.75	1.91	9,060	2.27	3	4.92	Rising	Normal
5/19/2021	0.11	0.355	0.648	1	3,448	0.39	2	66.45	Rising	Rapid
5/27/2021	0.268	0.339	0.92	1.26	28,510	0.71	1.75	127	Rising	Rapid
6/24/2021	0.162	0.260	1.06	1.32	816	0.54	0.5	5	Falling	Normal
7/15/2021	0.079	0.192	0.33	0.517	9,060	0.46	1.5	12	Rising	Rapid
8/31/2021	0.124	0.215	0.417	0.632	291	0.53	0.25	2.4	Falling	Still
10/11/2021	1.65	0.401	4.270	4.67	11,120	1.53	3.25	125	Rising	Rapid
3/18/2022	1.49	0.102	1.75	1.85	677	0.51	0.25	20	Steady	Normal
5/3/2022	<=0.0700	<0.100	<=0.400	<=0.100	7,490	0.49	0.5	10.7	Rising	Rapid
5/5/2022	<=0.0700	0.280	<=0.400	0.280	7,980	0.69	1	151	Rising	Rapid
5/13/2022	0.214	<0.100	0.709	0.709	17,850	1.18	2	167	Rising	Rapid
6/8/2022	<=0.0700	0.389	<=0.400	0.389	7,270	0.54	1	55	Steady	Rapid
6/22/2022	0.103	0.275	<=0.400	0.275	3,076	0.99	0.25	4	Steady	Rapid
7/25/2022	<=0.0700	0.131	0.636	0.767	308	0.44	<0.25	6	Steady	Normal
8/16/2022	0.183	<0.100	3.33	3.33	602	0.53	<0.5	3.6	Steady	Normal
10/12/2022	0.353	<0.100	0.753	0.753	1,500	0.49	0.25	<1	Falling	Still
3/3/2023	0.148	<0.100	1.19	1.19	3	0.73	0.25	<1	Falling	Normal
3/21/2023	0.1570	<0.100	0.481	0.481	4	0.25	0.5	13.3	Steady	Normal
4/20/2023	0.83	0.181	2.11	2.290	178	1.21	1	45	Steady	Normal
5/15/2023	<=0.0700	0.519	1.73	2.25	32,550	0.41	1.5	19	Rising	Rapid
7/5/2023	<=0.0700	<0.100	<=0.400	<=0.100	545	1	0.5	6	Falling	Normal
8/3/2023	<=0.0700	<0.100	<=0.400	<=0.100	84	0.28	0.5	2.38	Steady	Normal
3/7/2024	<=0.0800	<0.100	<=0.400	<=0.100	26	0.29	0.25	3	Steady	Normal
4/18/2024	0.2120	0.417	0.979	1.4	9,080	0.78	0.25	5	Steady	Normal
6/26/2024	1.31	0.487	3.04	3.527	16,640	1.22	0.5	99	Steady	Rapid
*7/1/2024	NA	NA	NA	NA	NA	3.02	NA	NA	NA	NA
8/8/2024	<=0.0800	<0.100	0.434	0.434	435	0.37	0.25	3	Falling	Still

**No sample was collected from Baldwin Creek on 7/1/2024. The sample site was inaccessible due to flooding over the roadway.*

Yankee Tank Creek										
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.258	0.364	0.983	1.35	1,371	0.62	4	37	Rising	Rapid
3/18/2020	0.066	0.348	0.617	0.965	1,376	0.37	2	46	Steady	Rapid
4/27/2020	0.205	0.818	0.967	1.78	3,076	0.52	2	41	Rising	Rapid
5/4/2020	0.872	0.333	2.46	2.79	15,970	1.1	5	27	Rising	Rapid
5/28/2020	0.654	1.80	1.47	3.27	72,700	0.93	6	194	Rising	Rapid
7/9/2020	0.084	0.45	0.538	0.987	7,701	0.36	2	22	Steady	Rapid
7/20/2020	0.132	0.36	0.493	0.853	12,590	0.49	1.5	11	Rising	Rapid
9/10/2020	0.151	0.28	0.547	0.822	12,740	0.68	1.5	19	Rising	Rapid
3/17/2021	0.656	0.620	1.72	2.34	3,180	0.98	3	65	Rising	Rapid
4/7/2021	0.124	0.489	1.35	1.84	4,352	0.43	1	10	Rising	Rapid
4/28/2021	1.1	0.27	3.32	3.59	11,620	2.27	3.5	92	Rising	Rapid
5/19/2021	0.168	0.532	0.759	1.29	1,785	0.39	2.5	57.13	Rising	Rapid
5/27/2021	0.647	0.351	1.38	1.73	38,730	0.71	5	109	Rising	Rapid
6/24/2021	0.198	0.543	1.18	1.72	57,940	0.54	0.5	4	Rising	Rapid
7/15/2021	0.207	0.427	0.291	0.718	13,090	0.46	3	10	Rising	Rapid
8/31/2021	0.324	0.566	0.603	1.17	24,810	0.53	2.5	12	Rising	Rapid
10/11/2021	0.365	0.844	0.956	1.8	10,100	1.53	2.5	106	Rising	Rapid
3/18/2022	0.359	0.649	1.76	2.41	1,046	0.51	1	18	Rising	Rapid
5/3/2022	<=0.0700	0.229	<=0.400	0.229	1,553	0.49	1	9.19	Steady	Rapid
5/5/2022	<=0.0700	1.04	<=0.400	1.04	1,860	0.69	1.5	130	Rising	Rapid
5/13/2022	0.777	0.857	2.03	2.89	22,470	1.18	4	168	Rising	Rapid
6/8/2022	0.104	0.413	<=0.400	0.413	8,164	0.54	2	51	Steady	Rapid
6/22/2022	0.118	0.452	<=0.400	0.452	13,340	0.99	1	4	Steady	Rapid
7/25/2022	0.084	0.558	1.07	1.63	8,420	0.44	1	10	Rising	Rapid
8/16/2022	0.318	0.456	1.24	1.7	21,870	0.53	1	7	Rising	Rapid
10/12/2022	0.285	0.672	1.22	1.89	23,590	0.49	0.5	10	Rising	Rapid
3/3/2023	0.565	0.742	1.6	2.34	882	0.73	1.5	99	Rising	Rapid
3/21/2023	<=0.0700	0.518	0.764	1.28	771	0.25	0.5	11.40	Rising	Rapid
4/20/2023	0.707	0.532	2.37	2.9	5,172	1.21	2	51	Steady	Rapid
5/15/2023	<=0.0700	0.435	1.14	1.58	15,150	0.41	2.5	21	Steady	Rapid
7/5/2023	0.187	0.359	0.45	0.809	4,350	1	0.5	5	Steady	Normal
8/3/2023	<=0.0700	0.401	<=0.400	0.401	2,143	0.28	0.5	2.04	Rising	Rapid
3/7/2024	0.299	0.238	0.636	0.874	1,153	0.29	0.5	4	Rising	Rapid
4/18/2024	0.83	0.514	2.64	3.15	5,910	0.78	1	7	Rising	Rapid
6/26/2024	0.478	1.08	0.921	2.001	13,540	1.22	0.5	62	Steady	Rapid
7/1/2024	0.534	0.527	1.07	1.6	26,030	3.02	5	785	Rising	Rapid
8/8/2024	<0.0800	0.360	0.56	0.92	18,420	0.37	0.5	4	Rising	Rapid

Yankee Tank Creek - Upstream (OPTIONAL)										
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.156	0.283	0.905	1.19	206	0.62	2	13	Rising	Rapid
3/18/2020	<=0.0400	1.03	0.713	1.74	160	0.37	1.5	16	Steady	Rapid
4/27/2020	0.088	1.47	0.642	2.11	2,098	0.52	1	15	Rising	Rapid
5/4/2020	0.204	0.425	0.698	1.12	15,530	1.1	2	10	Rising	Rapid
5/28/2020	0.114	0.517	0.750	1.27	9,880	0.93	2	69	Rising	Rapid
7/9/2020	0.062	<=0.100	0.534	0.534	1,860	0.36	1	8	Steady	Normal
7/20/2020	0.118	0.352	0.661	1.01	9,080	0.49	1	4	Rising	Rapid
9/10/2020	0.13	0.365	0.413	0.778	13,960	0.68	0.5	7	Rising	Rapid
3/17/2021	0.127	0.648	0.958	1.61	771	0.98	1	23	Rising	Rapid
4/7/2021	<=0.0400	0.342	0.611	0.953	435	0.43	0.5	4	Rising	Rapid
4/28/2021	0.345	0.375	1.35	1.72	3,654	2.27	1.5	4.7	Rising	Rapid
5/19/2021	<=0.0400	0.196	0.472	0.668	148	0.39	1	20.42	Rising	Rapid
5/27/2021	0.252	0.171	1.260	1.43	20,460	0.71	1.5	39	Rising	Rapid
6/24/2021	0.062	0.654	1.120	1.77	1,904	0.54	0.25	2	Steady	Normal
7/15/2021	0.084	0.376	0.494	0.87	6,830	0.46	2.5	4	Rising	Rapid
8/31/2021	0.078	0.497	0.507	1	29,090	0.53	1	1.7	Steady	Normal
10/11/2021	0.137	0.53	0.640	1.17	5,200	1.53	1.5	39	Rising	Rapid
3/18/2022	<=0.0700	0.463	0.757	0.903	448	0.51	0.5	6	Rising	Rapid
5/3/2022	<=0.0700	0.177	<=0.400	0.177	650	0.49	1	3.28	Rising	Rapid
5/5/2022	<=0.0700	0.531	<=0.400	0.531	308	0.69	0.5	46	Rising	Rapid
5/13/2022	0.148	0.802	0.880	1.68	26,130	1.18	1	55	Rising	Rapid
6/8/2022	<=0.0700	0.194	<=0.400	0.194	1,904	0.54	1	17	Steady	Rapid
6/22/2022	<=0.0700	0.373	<=0.400	0.373	5,172	0.99	0.5	1	Steady	Normal
7/25/2022	<=0.0700	0.449	0.573	1.02	2,755	0.44	0.5	2	Rising	Rapid
8/16/2022	<=0.0700	0.422	0.828	1.25	461	0.53	0.25	2	Rising	Rapid
10/12/2022	0.190	0.453	0.487	0.940	11,530	0.49	0.25	4.3	Steady	Normal
3/3/2023	0.103	0.655	1.04	1.7	222	0.73	1	34	Rising	Rapid
3/21/2023	0.084	0.457	0.415	0.872	16	0.25	1	4.08	Steady	Rapid
4/20/2023	0.24	0.295	0.976	1.27	4,611	1.21	1	17	Steady	Rapid
5/15/2023	<=0.0700	0.506	1.000	1.51	20,140	0.41	1.5	7	Rising	Rapid
7/5/2023	<=0.0700	0.318	<=0.400	0.318	2,410	1	0.5	2	Steady	Normal
8/3/2023	0.222	0.463	<=0.400	0.463	260	0.28	0.5	0.729	Steady	Rapid
3/7/2024	<=0.0800	0.447	1.64	2.09	77	0.29	0.5	1	Rising	Rapid
4/18/2024	<=0.0800	0.523	0.682	1.2	703	0.78	0.5	2	Steady	Rapid
6/26/2024	0.112	0.681	0.552	1.233	5,710	1.22	0.5	26	Steady	Normal
7/1/2024	0.255	0.217	0.598	0.815	3,876	3.02	3	281	Rising	Rapid
8/8/2024	<=0.0800	0.292	<=0.400	0.292	1,296	0.37	0.25	1	Falling	Still

Inverness Creek (OPTIONAL)										
Date	Total Phosphorus (mg/L)	Nitrate + Nitrite (mg/L)	TKN (mg/L)	Total Nitrogen (mg/L)	E.coli (MPN/100 mL)	Total Rainfall (in)	Stream Depth (ft)	Stream Flow (CFS)	Stream Level	Stream Velocity
3/9/2020	0.173	0.358	0.732	1.09	759	0.62	2	*No data*	Rising	Rapid
3/18/2020	<=0.0400	0.516	1.04	1.56	789	0.37	1.5	*No data*	Steady	Rapid
4/27/2020	0.104	0.552	0.843	1.4	3,130	0.52	1.5	*No data*	Rising	Rapid
5/4/2020	0.473	0.439	1.54	1.98	26,130	1.1	2	*No data*	Rising	Rapid
5/28/2020	0.236	0.558	0.623	1.18	46,110	0.93	2	70	Rising	Rapid
7/9/2020	0.076	0.872	0.878	1.75	5,794	0.36	1	4	Steady	Normal
7/20/2020	0.101	0.458	0.484	0.942	11,450	0.49	1	2	Rising	Rapid
9/10/2020	0.067	<=0.100	0.359	0.359	7,710	0.68	1	4	Rising	Rapid
3/17/2021	0.306	0.736	1.38	2.12	3,448	0.98	3	12	Rising	Rapid
4/7/2021	0.0900	0.519	1.02	1.54	2,382	0.43	1	2	Steady	Normal
4/28/2021	0.602	0.511	2.16	2.67	13,760	2.27	3.5	15	Rising	Rapid
5/19/2021	<=0.0400	0.804	0.63	1.43	4,106	0.39	2.25	10.92	Steady	Rapid
5/27/2021	0.505	0.419	1.89	2.31	57,940	0.71	3	21	Rising	Rapid
6/24/2021	0.092	0.291	0.736	1.03	12,230	0.54	1	1	Steady	Normal
7/5/2021	0.129	0.394	0.285	0.679	11,370	0.46	2.5	2	Rising	Rapid
8/31/2021	0.209	0.552	0.625	1.18	27,550	0.53	2	1.7	Rising	Rapid
10/11/2021	0.2	1.21	0.814	2.02	17,220	1.53	3	21	Rising	Rapid
3/18/2022	0.162	0.670	1.39	2.06	1,515	0.51	2.5	3	Rising	Rapid
5/3/2022	<=0.0700	0.438	<=0.400	0.438	1,789	0.49	2	1.76	Steady	Normal
5/5/2022	<=0.0700	0.862	<=0.400	0.862	1,597	0.69	2.5	25	Rising	Rapid
5/13/2022	0.208	0.650	0.892	1.54	27,230	1.18	3	32	Rising	Rapid
6/8/2022	<=0.0700	0.570	<=0.400	0.570	8,664	0.54	1.5	13	Steady	Normal
6/22/2022	0.072	0.540	<=0.400	0.540	172,300	0.99	2	1	Steady	Rapid
7/25/2022	<=0.0700	0.650	1.20	1.85	12,590	0.44	2.5	10	Rising	Rapid
8/16/2022	0.211	0.727	1.41	2.14	16,640	0.53	2	1	Rising	Normal
10/12/2022	0.189	0.655	0.890	1.54	15,000	0.49	2	2	Rising	Rapid
3/3/2023	0.165	0.940	1.2	2.14	1,017	0.73	3	19	Rising	Rapid
3/21/2023	<=0.0700	0.727	0.598	1.32	1,281	0.25	3.5	2.18	Rising	Rapid
4/20/2023	0.412	0.622	1.62	2.24	8,360	1.21	3	10	Steady	Rapid
5/15/2023	<=0.0700	0.523	0.783	1.31	9,330	0.41	2.5	4	Steady	Rapid
7/5/2023	<=0.0700	0.453	<=0.400	0.453	3,076	1	1	1	Steady	Normal
8/3/2023	0.258	0.531	<=0.400	0.531	3,130	0.28	2	0.39	Rising	Rapid
3/7/2024	0.207	0.502	0.984	1.49	1,872	0.29	2	1	Rising	Rapid
4/18/2024	0.305	0.500	1.4	1.9	5,172	0.78	2.5	1	Rising	Rapid
6/26/2024	0.186	1.220	0.753	1.973	15,150	1.22	1	13	Steady	Rapid
7/1/2024	0.536	1.060	1.03	2.09	8,360	3.02	3	150	Rising	Rapid
8/8/2024	0.277	0.652	0.63	1.280	8,650	0.37	0.5	1	Steady	Normal

Stormwater Management Plan

2021 - 2024

Submitted in Compliance with

Kansas Permit No. M-KS31-SU01

February 2021

Last Revised February 2025

CONTENTS

1.0 INTRODUCTION

The Stormwater Management Plan (SMP or "Plan") outlines the programs and practices the City of Lawrence (“City”) will implement to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit effective December 1, 2019. The focus of the SMP is to document how the City will manage and reduce the discharge of pollutants from its storm system to the maximum extent practicable by implementing best management practices (BMPs) consistent with the provisions of the permit. Programs outlined herein will best enable the City to protect water quality and satisfy the requirements of the Clean Water Act and Kansas surface water quality standards. The Plan components will be described in clear, specific, and measurable terms to comply with new EPA regulations published in the MS4 General Permit Remand Rule (Remand Rule), as finalized and effective January 9, 2017.

This SMP will guide the City’s stormwater programs to implement BMPs for Total Maximum Daily Load (TMDL) regulations and each of the six minimum control measures: Public Education, Public Involvement and Participation, Illicit Discharge Detection and Elimination, Construction Site Runoff Control, Post Construction Discharge from new Development and Redevelopment, and Pollution Prevention and “Good Housekeeping” in municipal operations. The Kansas Department of Health and Environment (KDHE) established a point system associated with a list of BMP options, tasks, or other conditions for each control measure to be implemented to demonstrate compliance with the permit control measures and Remand Rule. The City will implement these BMPs to achieve the necessary point requirements sufficient for permit compliance for each year within the permit cycle beginning in 2021.

The Plan includes tables of BMPs for each control measure along with measurable goals and the corresponding point value. The tables indicate the BMP options for the City to implement during this permit cycle, with the BMPs the City plans to perform identified with the personnel responsible for implementing the measure. While the various BMPs provide the City flexibility in implementing the stormwater management program, a critical and challenging component will be documenting and tracking the wide array of actions associated with this five-year permit.

Additional sections of the Plan include measures for monitoring and controlling pollutants from industrial and high-risk areas, flood control projects, and water quality monitoring. Also included are maps and sampling requirements to address TMDL impairments in the receiving waters adjacent to Lawrence’s permitted jurisdiction through wet weather stream sampling and testing during qualifying precipitation events. The SMP additionally serves as an important resource for other needs of the City, such as multilayer capital improvement and integrated plans.

The City will modify the SMP as needed to meet the conditions of the permit through any of the following methods as laid out in the permit:

1. If the SMP document is updated during the permit cycle, the City will submit the Plan to KDHE for review and approval along with the annual report, which is due after the first of the calendar year but before the 28th of February. In this case, the City can begin implementing the new SMP as soon as the SMP is submitted to KDHE. The City is required to implement the approved SMP to meet the conditions of the permit. If KDHE finds the SMP is not approvable, requirements for modification and resubmittal will be addressed by the City.

2. If it becomes necessary to modify the SMP at some time other than when the annual report is submitted to KDHE, the City will make the modifications to the SMP document and submit the SMP document to KDHE for approval. The City will not begin the implementation of the modified SMP until KDHE has provided approval.

3. KDHE may require the City to modify the SMP at any time. Requirements for modification and resubmittal will be addressed by the City promptly for KDHE approval.

This Plan was prepared in compliance with Kansas Permit Number: M-KS31-SU01

SMP Effective Date: February 24, 2021
SMP Expiration Date: January 31, 2025

Section 1.1 summarizes the basic requirements of the stormwater permitting program for the benefit of users of this document. Subsequent sections provide the details of the SMP itself.

1.1 Overview of Stormwater Permit Requirements for MS4s

The Federal Water Pollution Control Act (i.e., the Clean Water Act) requires permits for both municipal and industrial stormwater dischargers, developed under the National Pollutant Discharge Elimination System (NPDES). Permits for stormwater discharges from municipal urbanized areas are regulated under the Municipal Separate Storm Sewer Systems (MS4) permitting program,

An MS4 is defined as “a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)” that are (1) designed or used for collecting or conveying stormwater and (2) owned or operated by a city, county, or other governmental entity (including federal and state entities). The term “MS4” specifically excludes (1) combined sewers and (2) systems that are part of a publicly owned treatment works.

KDHE has developed two general MS4 permits for small municipalities with separate storm sewer systems; one for entities receiving an MS4 permit for the first time and another for entities receiving a re-issued permit. The City is currently in the third MS4 permit cycle, implementing the permit effective on December 1, 2019. The City’s original MS4 permit was issued on October 1, 2004, and was superseded by a second permit issued on February 1, 2014.

The general permits establish standardized requirements for entities across the state engaged in similar activities and discharging stormwater of similar quality. Permits issued to regulated cities or counties may include supplemental conditions in addition to the standardized requirements in the general permits. The following description of the MS4 permit program was compiled from KDHE fact sheets:

The small MS4 general permit program addresses MS4s that serve populations less than 100,000 in urbanized areas, as well as MS4s located outside of urbanized areas that have or may have the potential to negatively impact surface water quality as a result of their discharges.

A general permit requires the permittee to develop, implement, and enforce a Stormwater Management Plan (SMP) designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy water quality requirements of the Clean Water Act and Kansas law.

The SMP must include the six minimum stormwater control measures that are required of all plans. The City will demonstrate compliance through a point system and a list of various BMPs, tasks, or other conditions with associated point values that will be tallied and compared with the total point requirement for each of the Six Minimum Control Measures and TMDL BMPs when required.

The SMP must also address the implementation of BMPs with measurable goals, designate the parties responsible for implementing the BMPs, and provide appropriate maps and procedures for conducting stormwater/receiving stream sampling and testing based upon the TMDL impairments for reducing pollutants in stormwater discharges from the municipality. Particular emphasis is placed on drainage basins and stormwater pollutants that discharge to designated Total Maximum Daily Load (TMDL) streams and lakes within or immediately downstream of the municipality.

“Impaired Waters” are streams or lakes that do not attain or maintain minimum water quality standards. They may result from individual or multiple pollutants. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. TMDLs are developed for impaired streams and lakes that are identified on the State’s 303(d) list of impaired waters

TMDL water bodies and pollutants of concern are identified in permits issued for individual municipalities if impaired waters exist within or immediately downstream of that jurisdiction. Monitoring requirements and water quality protection initiatives may then focus primarily on those pollutants.

2.0 PARTIES RESPONSIBLE FOR COMPLIANCE WITH THIS PLAN

The City of Lawrence Municipal Services and Operations Department (MSO), Environment, Health & Science (EHS) Section will assume the overall responsibility for coordinating activities and the reporting outlined in this Plan. EHS will provide education and communicate regulatory requirements of the MS4 permit to all City departments. Other MSO sections and staff will take part in the implementation of best management practices required under the six minimum control measures. EHS will collaborate with other City departments such as Parks and Recreation and Planning and Development Services in some cases. The plan designates lead staff for each BMP that the City chooses to implement under each minimum control measure.

3.0 COMPLIANCE - NPDES SIX MINIMUM CONTROL MEASURES

This section describes the six minimum water quality protection control measures that are required by all MS4 permits. Effective implementation of these minimum control measures is expected to result in a significant reduction of pollutants discharged into receiving water bodies. The City will continue to develop and implement adequate BMPs with measurable goals for each of the control measures selected to claim at least the minimum required points in the calendar years for the duration of this management plan.

In cases where the City is already implementing a BMP that qualifies for points, continued implementation of that BMP will earn the listed points as allowed for the first year of implementation under this permit as well as allowable for subsequent years.

Additionally, because multiple BMPs involve holding public hearings or public forums, the City may hold a public hearing or forum that addresses various topics and claim points for all applicable BMPs.

The City is not limited to the implementation of the BMPs listed in the MS4 permit. However, while other BMPs may be implemented, only those listed in the permit will count towards the required annual point total.

EHS staff will maintain a schedule on file to claim the associated points and document compliance with the goal and implementation schedule to report on the extent of compliance (i.e., equaling, exceeding, or failing to reach the required annual point total) in the annual report submitted to KDHE.

The permit describes the six minimum control measures as follows:

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

Sections 3.1 – 3.6 provide the following information for each control measure:

- A summary description of the control measure and the City's applicable practices and programs
- The benefits of the control measure
- A table listing BMPs with measurable goals, point values, and responsible parties
- Program assessment activities for evaluating the success of the control measure
- Lead staff for each BMP that the City chooses to implement under each minimum control measure.

3.1 Control Measure 1: Public Education and Outreach

Description

This minimum control consists of implementing a public education program to inform residents, businesses, and organizations about the impacts of stormwater discharge on surface water quality and how they can help reduce pollutants in stormwater runoff. This minimum control includes distributing educational materials to the community and conducting outreach activities.

The City renewed emphasis on internal and external communication capabilities by establishing an expanded Communications Division staffed with full-time employees, including a Public Information Officer (PIO) within MSO to assist with stormwater initiatives. A full-time MSO Technician additionally focuses specifically on water quality and community education efforts and messaging as an Outreach Coordinator in EHS.

Additionally, EHS coordinates with the City's Planning & Development Services (PDS) department to educate developers on meeting applicable MS4 permit requirements. If a contractor or developer fails to follow stormwater pollution prevention BMPs during construction, PDS can help EHS address erosion control maintenance as part of the permitting process. EHS staff actively participate in new development project meetings to provide information and guidance to PDS staff regarding MS4 requirements.

The City of Lawrence operates the Lawrence/Douglas County Household Hazardous Waste (HHW) facility for all county residents and participates in regional efforts to keep hazardous materials out of the environment. Public education related to HHW focuses primarily on the proper use and disposal of these materials. EHS and the PIO emphasize HHW in messaging through various media to educate the public about issues related to HHW as a threat to water quality. Improper disposal of HHW can result in the introduction of concentrated quantities of hazardous material into waterways or water bodies through the storm sewer system.

In addition to the Public Education and Outreach program described above, the City will implement sufficient BMPs with measurable goals listed in the table below to achieve the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 4 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 7 points for each calendar year beginning in 2023.

Benefit

An informed and knowledgeable community is crucial to the success of a stormwater management program. Public awareness helps to ensure greater support and compliance. As the public gains a good understanding of the importance of water quality issues in both residences and businesses, they become more aware of the personal responsibilities expected

of them and others in the community, including the individual actions they can take to protect and improve water quality.

BMPs, Goals, and Staff

No. 1 - Public Education and Outreach					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, etc.**		
			Schedule	**Planned Points**	**Notes**
1.01	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 the website as necessary on a minimum monthly basis. Document monthly checks in the logbook and indicate changes with logged summaries.	2021	3	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.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: MSO Environment, Health & Science Staff (EHS) & MSO Public Information Officer (PIO)					
1.02	Distribute educational materials (either flyers, brochures, catalog mailings, handouts, or e-mails) addressing various pertinent stormwater public education topics.	The 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.	2021	2	Either flyer, 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,
			2022	2	
			2023	2	
			2024	2	

					brochures, catalog mailings, handouts, or e-mails are distributed.
Lead Staff: EHS and PIO					
1.03	Provide either training or educational materials to permittee identified businesses at high risk of contributing to stormwater pollution. Such businesses can include but are not limited to, food service, auto service, disaster response and janitorial services. The training or educational materials shall address best management practices they can employ to minimize or avoid adverse stormwater impacts due to their operations.	Training or educational materials must be provided, within the year, to at least five separate businesses if the population of the municipality is greater than 10,000, or three businesses if the population of the municipality is between 3,000 and 9,999, or two separate businesses if the population of the municipality is less than 3,000.There is no requirement to provide training to business in separate business categories, although it is allowed.	2021	2	The required amount of training or distribution of educational materials must occur within the year for which points are claimed. 2 points may be claimed in any year in which the required amount of training or distribution of educational material occurs.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS					
1.04	Apply notification, placard, covers/hatches with message, or stencil, on stormwater inlets to provide a message similar to “No Dumping – Drains to River”	Apply this notification on at least 10% of all known stormwater inlets in the MS4.	2021	2	The required number of placards, covers/hatches with message, or stencils must be placed within the year for which points are claimed. Alternately, points may be claimed in any subsequent year when an additional 5% of all known stormwater inlets in the MS4 bear the placard, covers/hatches with message, or stencil. 2 points may be claimed in years when the required number of inlets (10%) receives placards, covers/hatches with message, or stencils or in subsequent years when an additional 5% of all known stormwater inlets in the MS4 bear the placard, covers/hatches with message, or stencil.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS & MSO Field Operations & Inspections staff (FOI)					

1.05	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.	2021	1	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).
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS & PIO					
1.06	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 a 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.	2021		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.
			2022	4	
			2023		
			2024		
Lead Staff: EHS					
1.07	Provide educational material annually to at least four groups, including each of the following	Identify and educate at least 4 groups/entities from the listed types annually, developing topics	2021	3	All the requirements for sending educational material to the various

	types: Residents, Businesses/Institutions, Commercial entities/Developers, and Industrial facilities. The educational material may be provided as any of the following: • Brochures • Flyers • E-mails • Press release	that are group-specific and address activities and or pollutants of concern.	2022	3	groups must occur in a single year to qualify for the points in that year. 3 points may be claimed each year; this BMP is implemented in compliance with the specified requirements.
			2023	3	
			2024	3	
Lead Staff: EHS					
1.08	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 who will reach at least 5% of the K-12 students who 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 • Construction of rain gardens on school property • Rain barrel workshops • Rain garden workshops	2021		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 the installation or observe the operation of the BMPs. Any of the items listed under measurable 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).
			2022		
			2023	3	
			2024	3	
Lead Staff: EHS					
1.09	Operate an information booth at a large public event (such as a sports event, fair, or music festival) where at least an estimated 1,000 or more individuals attend. Alternately, operate an information booth at multiple public events	Provide information about stormwater topics of current interest.	2021		All events shall have the booth staffed by the permittee for at least 50% of the days the event occurs. 2 points may be claimed each year this BMP is implemented in compliance with the specified
			2022		

	(such as a sports event, fair, or music festival) where a cumulative estimated total of 3,000 or more individuals attend. Finally, a single point can be claimed for operating an information booth at a public event where at least an estimated 200 or more individuals attend.		2023	1	requirements for alternative 1. (1,000 or more attendees) or alternative 2. (3,000 attendees). Finally, 1 point may be claimed each year this BMP is implemented in compliance with the specified requirements for alternative 3 (200 attendees).
			2024	1	
Lead Staff: EHS					
1.10	Provide either training or educational materials to lawn/turf care service entities addressing best management practices they can employ to minimize or avoid adverse stormwater impacts due to their operations.	Training or educational materials must be provided, within the year, to at least five lawn/turf care service entities or at least 20% of the lawn care service entities located in the municipality, whichever is least.	2021	2	The required amount of training or distribution of educational materials must occur within the year for which points are claimed. 2 points may be claimed in any year in which the required amount of training or distribution of educational material occurs.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS					
1.11	Adopt a public education program to reduce littering.	Install and/or maintain signs to discourage littering. Signs are to be located in areas where littering has been a problem.	2021		Credit can be claimed for any year in which signs are installed and in place for greater than six months or in cases where signs have previously been installed in any year where the signs remain posted for the full year. 1 point may be claimed for the year when signs are posted for six months or more, or 1 point may be claimed in subsequent years where the signs remain posted throughout the year.
			2022		
			2023		
			2024		
Lead Staff:					
1.12	Create a stormwater information brochure to provide to the public at public meetings and/or hearings	Have multiple copies of the brochure available during at least 10 meetings or hearings open to the public during the year. Provide the brochures to the public at no charge.	2021	1	The brochures shall address stormwater topics of concern. 1 point may be claimed in any year the brochures are made available to the public at meetings and/or hearings as required.
			2022	1	
			2023	1	
			2024	1	

Lead Staff: EHS					
1.13	Operate an adopt-a-highway program to utilize public volunteers to clean road right-of-way.	The volunteers shall clean at least a two-mile segment of road either within the permit area or adjacent to the permit area. Alternately multiple spots (such as roadways, parks, and waterways) which are cleaned and equate to or exceed a two-mile road clean-up can qualify for a point."	2021		The road right-of-way shall be cleaned at least once per year. Points may be claimed for any year in which cleaning has occurred. 1 point may be claimed in any year a two-mile road segment is cleaned, or alternately, multiple spots are cleaned which equate to or exceed a two-mile road clean-up.
			2022		
			2023		
			2024		
Lead Staff: EHS					
1.14	Hold a media campaign addressing various pertinent stormwater public education topics.	Estimated media exposure during prime-time broadcasting for the duration of the campaign shall be 10 times the most recent U.S. Census Bureau decennial population value for the permit area. The date, time, and estimated media exposure for each spot broadcast shall be documented and kept on file along with the applicable U.S. Census population value.	2021		The media campaign shall be run within the year for which points are claimed. A new media campaign shall be run for each year points are claimed. 2 points may be claimed in a year in which the media campaign meeting the minimum exposure rate is conducted.
			2022		
			2023		
			2024		
Lead Staff: EHS & PIO					
1.15	Develop or participate in an ongoing social media program on pertinent stormwater public education topics.	Publish or share social media content on the permittee's social media accounts at least six times per year. Record post topic, the number of impressions and engagement for each post. Include link to permittee's stormwater education website.	2021	2	The required number of social media posts must occur within the year for which the posts are claimed. 2 points can be claimed in a year in which the required number of content is shared.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS & PIO					
1.16	Operate an information booth at a public event or hold a public event, which is intended to improve public	At least an estimated 800 or more individuals must attend the event.	2021		The booth must be staffed at least 50% of the time the event is open to the public.

	understanding of issues related to water quality. The event may be associated with any environmental related issue including but not limited to an environmental expo, earth day, world wetlands day, international day of action for rivers, world fish migration day, world biodiversity day, world oceans day, world cleanup day, world water monitoring day, world rivers day, and America recycles day.		2022	2	2 points may be claimed each year this BMP is implemented in compliance with the specified requirements. Municipal staff from multiple permittees may staff the both and claim points for their municipality for this BMP if their staff meet the 50% of the time staffing requirement.
			2023	2	
			2024	2	
Lead Staff: EHS					
1.17	Operate an adopt-a-street program to utilize public volunteers to clean street right-of-way.	The volunteers shall clean at least a two-mile segment of street, either a single street or multiple streets, either within the permit area or adjacent to the permit area.	2021		The street right-of-way shall be cleaned at least once per year. Points may be claimed for any year in which cleaning has occurred. 1 point may be claimed in any year at least two miles of street right-of-way is cleaned by volunteers.
			2022		
			2023		
			2024		
Lead Staff: EHS					

BMP Summary Table:		**Year**	**Points Earned**	**Note**
Public Education and Outreach The City of Lawrence will earn a minimum of 4 points annually for years 2021 and 2022, and 7 points in 2023 and 2024.		2021	18	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
		2022	22	
		2023	21	
		2024	23	

BMP POINT SUMMARY GOALS TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
1.01	3	2	2	2
1.02	2	2	2	2
1.03	2	2	2	2
1.04	2	2	2	2

1.05	1	1	1	1
1.06		4		
1.07	3	3	3	3
1.08			3	3
1.09			1	1
1.10	2	2	2	2
1.11				
1.12	1	1	1	1
1.13				
1.14				
1.15	2	2	2	2
1.16		2	2	2
1.17				
YEARLY TOTAL	18	23	23	23

Program Assessment

The City will be responsible for implementing adequate BMPs to comply with the minimum points required on Public Education and Outreach control measure of this permit and will work to claim additional points in the calendar years as specified above as a goal. The program's overall success will be measured through the successful implementation of the program's components. The City will document compliance and report the extent of progress with annual milestones and point totals achieved for the previous program year in the annual NPDES report submitted to KDHE in accordance with the permit.

Strategies of performance measurement can leverage the results of public engagement activities in Stormwater Management. The success of each BMP will be noted in the City's annual report based on the activities completed in the previous year and will be measured potentially by the following:

- Number of site visits to City website
- Number of community involvement events and participants
- Number of water quality presentations conducted by City staff
- The number of post-construction site violations in comparison to the previous year

3.2 Control Measure 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 utilized by the City to comply with the MS4 permit. Public participation in the development and implementation of BMPs should result in the reduction of stormwater pollution. Program implementation will also comply with state and local public notice requirements.

To implement a Public Involvement and Participation program as required in the permit, the City will implement sufficient BMPs with measurable goals listed in the table below to qualify for the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 3 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 6 points for each calendar year beginning in 2023 for the remainder of the permit cycle.

Benefit

An active and involved community is crucial to the success of a stormwater management program because it allows for broader public support and participation, faster results, and a broader base of expertise with economic benefits. As such, the community deserves the opportunity to voice opinions on the content of the Plan. Further, input into decisions builds support and ownership of the desired outcomes. Public involvement and participation can create a conduit to other environmental and water quality programs. The goal of the SMP is to improve water quality in local lakes and rivers by reducing pollutants in runoff originating within our community, which provides benefits to the entire community.

BMPs, Goals, and Staff

No. 2 - Public Involvement and Participation					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, etc.**		
			Schedule	**Planned Points**	**Notes**
2.01	Hold a public hearing or public forum to notify the public about stormwater program activities and to solicit public comments regarding stormwater issues.	Provide public notice of the hearing/forum, invite local news media, either newspaper, radio or TV, and document the hearing with attendance sign-in sheet and minutes of the hearing which include public comments and responses.	2021		Retain copies of the notices to public, invitations to attend, attendance sign-in sheets, and minutes. Points may be claimed in year which hearing is held. 2 points may be claimed each year this BMP is implemented in compliance with the specified requirements.
			2022		
			2023		
			2024		
Lead Staff: EHS, MSO Stormwater Engineering Program Manager, & PIO					
2.02	Establish a citizens advisory committee.	Host the citizens advisory committee meetings twice yearly and receive comments and guidance from the committee regarding the SMP. Retain on file copies of the attendance list and minutes of the meetings.	2021		The citizens advisory committee must hold at least two meetings in the year which points are claimed. 3 points may be claimed each year this BMP is implemented in compliance with the specified requirements.
			2022		
			2023		
			2024		
Lead Staff: EHS					
2.03	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 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	2021		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.
			2022		
			2023	3	
			2024	3	
Lead Staff: EHS					

2.04	Train either citizen watch groups, homeowner associations (HOAs), or public service groups to recognize illicit discharge activities and communicate observations to appropriate municipal staff.	Provide training or distribute training materials to the group participants like HOA at least once annually.	2021	2	At least one such training activity or distribution of training materials must be provided to the group 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.
			2022	2	
			2023		
			2024		
Lead Staff: EHS					
2.05	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.	2021		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.
			2022		
			2023	3	
			2024	3	
Lead Staff: EHS					
2.06	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.	2021	2	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.
			2022	3	
			2023		
			2024		
Lead Staff: EHS					
2.07	Enact either an ordinance, a resolution, or other enforceable requirement that requires pet owners or their keepers to immediately and properly	The ordinance or resolution or other enforceable measure shall be enacted, and signs posted informing the public of their obligation at the park. The	2021	1	In the year the Measurable Goal requirement is implemented the point may be claimed and for each year thereafter.
			2022	1	

	dispose of their pet's solid waste deposited at parks or rest areas owned by the permittee.	installation of a pet waste bag dispenser in the public area qualifies as adequate signage.	2023	1	1 point may be claimed for the year in which the Measurable Goal requirements are enacted, and 1 points may be claimed for each subsequent year the Measurable Goal requirements remain in effect.
			2024	1	
Lead Staff: EHS & MSO Engineering					
2.08	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 that can result in water pollution control.	A $500 contribution in a year is the minimum acceptable amount to achieve this goal.	2021		The donation must be made in the year the points are claimed. 2 points may be claimed each year this BMP goal is achieved.
			2022		
			2023		
			2024		
Lead Staff: EHS					
2.09	Distribute stormwater educational materials to the public within this permit area. Alternately, the permittee may provide stormwater educational materials, e.g. brochures, flyers, or pamphlets that address various stormwater topics. Other nearby municipalities may distribute these materials to the public. The nearby municipalities must be within 30 miles from this permit area.	The educational materials that are distributed or supplied for each topic must have a value of at least $50. Topics may be anything related to stormwater including but not limited to clean-up guidance following flooding, discouraging littering, explaining and discouraging illicit discharges to the storm sewers, guidance on constructed BMPs for home owners (rain gardens, rain barrels, etc.) guidance on area household hazardous waste receiving centers, and guidance on area recycling programs.	2021	1	For educational materials distributed or provided to nearby municipalities each year points may be claimed when materials are provided with equal or greater value as required for each separate topic. 1 point may be claimed per topic addressed in compliance with the requirements, up to a total of 5 points/topics.
			2022	1	
			2023	3	
			2024	3	
Lead Staff: EHS					
2.10	Establish a program to employ (either paid or unpaid) high school or college age environmental interns in an environmental related program including but not limited to either the wastewater utility,	The intern must receive the same environmental related training a new full-time employee would receive, within the first six months of the full-time employee's employment, during their internship.	2021	2	The internship must last at least 8 weeks in the year when points are claimed. 2 points may be claimed each year this BMP goal is achieved per intern.
			2022	2	
			2023	2	

	stormwater utility, potable water utility or solid waste utility.		2024	2	
Lead Staff: EHS & MSO Engineering					

BMP Summary Table:		**Year**	**Points Earned**	**Note**
Public Involvement and Participation The City of Lawrence will earn a minimum of 3 points annually for years 2021 and 2022 and 6 points in 2023 and 2024.		2021	14	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
		2022	15	
		2023	15	
		2024	14	

BMP POINT GOAL SUMMARY TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
2.01				
2.02				
2.03			3	3
2.04	2	2		
2.05			3	3
2.06	2	3		
2.07	1	1	1	1
2.08				
2.09	1	1	3	3
2.10	2	2	2	2
YEARLY TOTAL	8	9	12	12

Program Assessment

Like Public Education and Outreach, the overall success of the Public Involvement and Participation Program will be measured through the successful implementation of the program's components. The City will document and report program progress with each annual NPDES report, discussing the activities completed in this section for the previous program year.

Success will also be measured by the following:

- Number of public education meetings held
- Number and type of stormwater educational materials provided to the public within the permit area
- Numbers of students in an internship program and the type of work they get assigned to with the training they received
- Number of workshops or trainings completed

3.3 Control Measure 3: Illicit Discharge Detection and Elimination

Description

This minimum control consists of developing, implementing, and enforcing a program to detect and eliminate illicit discharges or other non-stormwater discharges into the storm sewer system. As part of this program, the City continues to implement and enforce Stormwater Pollution Prevention Ordinance No. 7373, adopted on July 17, 2001, which prohibits non-stormwater discharges into the MS4, and promotes awareness among public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

The City also maintains a storm sewer map of the MS4, indicating outfalls, as well as the names and locations of all streams or lakes receiving discharges from the outfalls.

Additionally, City staff will develop and implement a plan to identify and address prohibited non-stormwater discharges, including illegal dumping to the storm sewer system by evaluating dry weather MS4 discharges.

In addition to implementing an Illicit Discharge Detection and Elimination program as described above, the City will implement sufficient BMPs with measurable goals listed in the table below to qualify for the required number of points in each year within the permit cycle.

The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 5 points total on an annual basis for calendar years 2021 and 2022. The point total requirement increases to 7 points for each calendar year beginning in 2023 for the duration of the permit cycle.

The City has embraced the regional chapter of the American Public Works Association (APWA) cooperative efforts through participation in the processes and adoption of standards.

Benefit

A community should understand the extent of water quality problems caused by illicit discharges as direct discharges of waste into 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. The City will emphasize the elimination of inappropriate discharges into storm drains by identifying sources of non-stormwater discharges and instituting appropriate actions for their elimination.

BMPs, Goals, and Staff

No. 3 - Illicit Discharge Detection and Elimination					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, Etc.**		
			Schedule	**Planned Points**	**Notes**
3.01	Hold a public hearing or public forum to educate the public about illicit discharges and alternate acceptable methods of disposal or reuse of substances and/or materials.	Provide public notice of the hearing/forum, invite local news media (either newspaper, radio or TV), and document the hearing with attendance sign-in sheet and minutes of the hearing which include questions/comments from the attendees and answers/comments from the permittee staff.	2021		Retain copies of the notices to public, invitations to attend, attendance sign-in sheets, and minutes. Hearing must be held in year for which points are claimed. 2 points may be claimed for any year a hearing/forum is held.
			2022		
			2023		
			2024		
Lead Staff: EHS					
3.02	Implement a program to abandon failed or failing residential or commercial on-site wastewater treatment facilities. These on-site wastewater treatment systems such as septic tank – lateral systems or lagoon systems are then connected to the municipal wastewater collection system for treatment of wastewater at the municipal wastewater treatment plant. Alternately, upgrade or replace	Redirect the wastewater generated by the facility to the municipal wastewater treatment collection system for proper treatment and disposal. Alternately, upgrade or replace the failed system with improvements that meet or exceed the present code or local requirements.	2021		For each failed or failing on-site system which is abandoned, and the wastewater is redirected to the municipal wastewater treatment system, the permittee may claim points in the year the system is initially connected into the municipal wastewater treatment system. Alternately, for systems which are upgraded or replaced to restore adequate performance a lower number of points may be claimed in the year the upgrade or replacement is completed. 3 points may be claimed for each
			2022		
			2023		

	the failed system to restore performance.		2024		abandoned system in the year it is abandoned. Alternately, for systems that are upgraded or replaced as per the requirements, a total of 2 points may be claimed in the year upgrade or replacement is completed.
Lead Staff: Eco Flow Engineering Program Manager					
3.03	Develop a spill response plan and, if appropriate, coordinate emergency response with other agencies or organizations.	The plan shall include, at a minimum, explanation of appropriate spill response activities for spills associated with 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.	2021		The plan may be implemented in any year and points may be claimed for the initial implementation or for each year the plan remains effective. 3 points may be claimed in the year initially implemented, and 2 points may be claimed for each successive year the plan remains effective.
			2022	3	
			2023	2	
			2024		
Lead Staff: EHS					
3.04	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 that have dry weather discharges. Evaluate the water quality of the dry weather discharges to recognize non-stormwater contributions and trace the source of any illicit discharge.	When at least 5% of the known MS4 outfalls are inspected and for which at least one outfall was identified as discharging (entirely or partially) flow from an illicit discharge, the allotted points may be claimed in the year when the illicit discharge is eliminated. Document the MS4 outfalls inspected, the outfalls with dry weather discharges and the MS4 outfalls associated with illicit discharges.	2021	1	The evaluation of a group of at least 5% of the known MS4 outfalls may be completed all in one year or may occur in up to two consecutive years and a point can be claimed. The larger number of points may be claimed only for the year in which the illicit discharge(s), associated with this group of evaluated outfalls is/are eliminated. 1 point may be claimed in the year when a total of at least 5% of the known MS4 outfalls are finally inspected, and 2 additional points may be claimed in which the illicit discharge(s) associated with this group of evaluated outfalls is/are eliminated.
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS, FIO, GIS, & Water Quality Lab staff					
3.05	Distribute a letter (or flier) and/or e-mail along with a press release from a municipal	The letter (or flier) and/or e-mail along with the press release shall highlight the	2021	2	The distribution of these various documents, letter (or flier) and/or e-mail along with the press release, shall all occur

	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.	requirements for proper disposal of wastes and disposal methods. Copies of these documents shall be retained on file along with the distribution/mailing lists to document distribution to the target area (minimum MS4 permit area) to avoid illicit discharges to the MS4. Provide a link to the municipal website where applicable ordinances and disposal guidance are posted.	2022	2	in the same month. Permittee may claim these points in the year these documents are distributed. 2 points.
			2023	2	
			2024	2	
Lead Staff: EHS & PIO					
3.06	Inspect, by televising pipelines or direct visualization of open channel drainage, 2% of the MS4 system within the permit area all conducted within a 12-month period to aid in identifying illicit discharges as well as evaluate the condition of the storm sewer lines/drainage channels-ditches. If in a 12-month period 10% of the MS4 system is inspected a higher point value may be claimed.	Generate a summary report of the inspection including the number of linear feet televised, number of linear feet visually inspected, condition comments, illicit discharges identified and the results of efforts to eliminate illicit discharges, e.g., discharge line disconnected and redirected to the sanitary sewer or discharge practice terminated.	2021	5	The inspection process can occur in a single calendar year or may be conducted over a period extending from one year into the succeeding year. Points may be claimed in the year when the televised and/or visual inspection of this portion of the MS4 system (either 2% or 10%) is completed. 3 points may be claimed for inspection of 2% of the MS4 system. Alternately, if 10% of the MS4 system is inspected, 5 points may be claimed.
			2022	5	
			2023	5	
			2024	5	
Lead Staff: EHS & FIO					
3.07	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.	2021	3	The property owners or residents located within the permit area must be able to dispose of waste accepted by the HHWCP throughout a calendar year. Points may be claimed for any such year. 3 points may be claimed for any year in which this BMP was implemented in compliance with the requirements.
			2022	3	
			2023	3	
			2024	3	
Lead Staff: EHS & MSO Solid Waste staff (SW)					

3.08	Implement a program to increase the reliability of sanitary sewer pump stations above the minimum standard design requirements.	A pump station shall be upgraded to include the following: • installation of a dedicated on-site standby generator (with automatic transfer switch) for use when main line power fails • installation of a dialer system, or telemetry system, or connection to a SCADA system to provide real time or nearly real time notification of failures at the pump station which can potentially lead to sanitary sewer overflow • the permittee shall purchase and maintain for immediate operation a trailer mounted motor driven sewage pump for use when the pump station fails to operate The motor driven pump shall be sized to pump at a rate at least equal to the firm pumping capacity of any sanitary sewer pump station the permittee claims points for under this BMP. The pump station shall be modified to facilitate the connection of the trailer mounted pump discharge to the force main and convenient installation of the suction line from the trailer mounted pump into the wet well.	2021		In the year all improvements, as listed under measurable goals, are installed and ready for operation the points may be initially claimed and in subsequent years these improvements remain operational points may be claimed. 5 points may be claimed (for each pump station upgraded in compliance with this BMP) in the first year the improvements, as listed under measurable goals, are installed and ready for operation. 4 points may be claimed for (for each pump station upgraded in compliance with this BMP) each successive year the improvements, as listed under measurable goals, remain operational.
			2022		
			2023		
			2024		
Lead Staff: EHS & MSO Facility Operations, Maintenance, and Automation (FOMA) staff					

3.09	Provide a contribution to area recycle programs or programs (such as household hazardous waste disposal facilities, e-cycle facilities, paper shred facilities, pharmaceutical disposal facilities etc.) designed to properly dispose of types of waste or materials which have previously been discarded to or adjacent to either the MS4, streams, or lakes within or adjacent to the permittee's permit area. The area program must be within 30 miles from this permit area.	The contributions may be made to programs, which take tires, automotive fluids, batteries, or other wastes for which there is any documentation such wastes have been discarded as addressed under the BMP summary. The contributions must total a minimum of $500 in the year ($100 in the year for alternative lower population municipalities) which points are claimed. The contributions can be monetary or can be in the form of goods and/or services with an agreed specified value. Contributions may be made to area household hazardous waste programs, private recycle/reuse facilities or civic/volunteer organizations assisting in recycle.	2021		The total value of donation (either in-kind work, materials, supplies or cash) in a minimum amount of $500 must be made in the year points are claimed.Alternatively, for municipalities with less than 500 population the total value of donation in a minimum amount of $100 must be made in the year points are claimed.2 points may be claimed each year this BMP goal is achieved.
			2022		
			2023		
			2024	2	
Lead Staff:					
3.10	Inspect, 5% of the MS4 system Stormwater inlets and/or outfalls within the permit area all conducted within a 12-month period to aid in identifying illicit discharges. If in a 12-month period 15% of the MS4 system inlets and/or outfalls are inspected a higher point value may be claimed in the year the required percentage of inspections are completed.	Generate a summary report of the inspection including the number of inlets and/or outfalls visually inspected, condition comments, illicit discharges identified and the results of efforts to eliminate illicit discharges, e.g., discharge line disconnected and redirected to the sanitary sewer or discharge practice terminated.	2021	3	The inspection process can occur in a single calendar year or may be conducted over a period extending from one year into the succeeding year. Points may be claimed in the year when the televised and/or visual inspection of this portion of the MS4 system (either 2% or 15%) is completed. 3 points may be claimed for inspection of 2% of the MS4 system in the year the required percentage of inlets and/or outfalls are finally inspected, alternately if 15% of the MS4 system is inspected 5 points may be claimed.
			2022	3	
			2023	3	
			2024	3	
Lead Staff: EHS					

BMP Summary Table:	Year	Points Earned	Note
Illicit Discharge Detection and Elimination The City of Lawrence will earn a minimum of 5 points annually years 2021 and 2022 and 7 points for years 2023 and 2024.	2021	18	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
	2022	23	
	2023	23	
	2024	20	

BMP POINT GOAL SUMMARY TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
3.01				
3.02				
3.03		3	2	
3.04	1	1	1	1
3.05	2	2	2	2
3.06	5	5	5	5
3.07	3	3	3	3
3.08				
3.09				2
3.10	3	3	3	3
YEARLY TOTAL	14	17	16	16

Program Assessment

The overall success of the Illicit Discharge Detection and Elimination Program will be measured through the successful implementation of the program components, including enforcement of the City's Stormwater Prevention Pollution Ordinance No. 7373. Program progress will be reported with each annual NPDES report discussing the activities completed in this section for the previous program year.

Success will also be measured by the following:

- Number of public complaints addressed or illicit discharge instances discovered by City staff
- Percent of MS4 system inspected
- Number of notices of violation or penalties issued
- Number of inlet and outfall inspections
- Types of illicit discharges detected and eliminated, if any

3.4 Control Measure 4: Construction Site Stormwater Runoff Control

Description

This minimum control aims to reduce stormwater runoff pollutants to the City's storm sewer system from construction activities. Programs to address this control measure will include developing, implementing, and enforcing a program to reduce pollutants in any stormwater runoff to the MS4 from 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.

As part of the program, the City intends to develop and maintain a land disturbance ordinance requiring erosion and sediment controls and BMPs, as well as enforceable sanctions when applicable to ensure compliance. Ordinance measures will also include:

- Requirements for construction site owners or operators to control wastes at the construction site that are likely to cause adverse impacts to water quality.
- Procedures for site plan review that 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.

In addition to establishing and enforcing land disturbance ordinance measures, the City will implement sufficient BMPs with measurable goals listed in the table below to qualify for the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 4 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 6 points for each calendar year beginning in 2023 through the duration of the permit cycle.

Benefit

If uncontrolled, land disturbance activities and construction activities can generate significant pollutant loads consisting of debris and sediment that can cause negative impacts to our environment, adjoining properties, storm sewer infrastructure, and downstream water bodies. Fortunately, effective controls are easy and cost-effective to implement. The use of BMPs such as pollution runoff control measures at construction sites helps to filter pollutants and prevents pollution runoff by controlling it at its source.
The City will aim to achieve the known benefits of effective stormwater runoff BMPs for construction companies and other stakeholders in the City, which include the following:

1. Protection of wetlands and aquatic ecosystems;
2. Improved quality of receiving waterbodies;
3. Conservation of water resources;
4. Protection of public health, and;
5. Flood control.

BMPs, Goals, and Staff

No. 4 - Construction Site Stormwater Runoff Control					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, Etc.**		
			Schedule	**Planned Points**	**Notes**
4.01	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 that 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 that is part of a larger common plan of development or sale that in total disturbs one acre or more.	2021		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.
			2022	3	
			2023	2	
			2024	2	
Lead Staff: Stormwater Engineering Program Manager					
4.02	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 that 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 that meet the disturbed area standard as specified.in the BMP Summary.	2021	2	Points may be claimed for the year in 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.
			2022	2	
			2023		
			2024		
Lead Staff: Stormwater Engineering Program Manager					
4.03	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	This training class must address all local requirements for a SWP2 Plan, requirements for implementation of BMPs and address the requirements for permits.	2021	3	Points may be claimed for the year in which the training class is held. 3 points
			2022		
			2023	3	

	implementation of appropriate BMPs.		2024	3	
Lead Staff: EHS					
4.04	Develop a site plan review process that considers potential water quality impacts that 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.	2021	3	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.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS, Stormwater Engineering Program Manager, & Planning & Development Services (PDS)					
4.05	Establish effective requirements for construction sites to control wastes. Develop through ordinance or other enforceable means requirements for construction site Operators or owners to control wastes. At a minimum control shall be imposed to prevent entry into the MS4 for the following wastes: • discarded building materials • concrete • truck washout chemicals, litter, and sanitary waste	Enact ordinance or other effective means to achieve control of wastes at construction sites.	2021	2	Points may be claimed in the year of enactment. Also, points may be claimed in each subsequent year the method of effective control of construction site waste remains in effect. 3 points may be claimed in the year of enactment. 2 points may be claimed for each successive year the method of effective control of construction site waste remains in effect.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS & PDS					
4.06	Develop written procedures for inspection of construction sites. Develop a Stormwater Construction Site Inspection Guide for use by municipal inspectors.	The procedures document must address the administrative aspects associated with required inspections of construction sites, the issuance of inspection reports,	2021	3	Development of the written procedures and the Inspection Guide can occur in any year. Initial implementation can allow points to be claimed in that year and continued implementation can allow points to be

		notices of violations, and enforcement actions. The Inspection Guide must provide inspectors guidance on how to conduct a construction site stormwater inspection, the required procedures, and guidance on acceptable conditions of various BMPs employed on such sites, enforcement actions and/or reference of cases for enforcement by other municipal staff, guidance on photo log of the inspection and inspection checklists for use by the inspector.	2022	2	claimed in subsequent years. 3 points may be claimed in the year of initial development, 2 points may be claimed for each successive year the written procedures and inspection guide continue to be utilized.
			2023	2	
			2024	3	
Lead Staff: EHS & Stormwater Engineering Program Manager					
4.07	Acquire or develop a software tracking system to track inspections and related tasks.	The tracking system must allow for scheduling inspections and follow-up activities such as re-inspections, mailing notices or reports, etc.	2021		A point can be claimed in the initial year the software tracking system is implemented and each year thereafter in which it is utilized.1 point may be claimed for any year the software is initially utilized, and 1 point may be claimed for each successive year the software is utilized.
			2022	1	
			2023	1	
			2024	1	
Lead Staff:					

BMP Summary Table:	**Year**	**Points Earned**	**Note**
Construction Site Stormwater Runoff Control The City of Lawrence will earn a minimum of 4 points annually for years 2021 and 2022 and 6 points in years 2023 and 2024.	2021	12	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
	2022	8	
	2023	8	
	2024	11	

BMP POINT GOAL SUMMARY TABLE

BMP	2021	2022	2023	2024
4.01		3	2	2
4.02	2	2		
4.03	3		3	3
4.04	3	2	2	2
4.05	2	2	2	2
4.06	3	2	2	3
4.07		1	1	1
YEARLY TOTAL	13	12	12	13

Program Assessment

This control measure aims to educate at least 80 percent of all construction site operators and contractors about the proper selection, installation, inspection, and maintenance of BMPs by the end of this permit term, which will help ensure compliance with erosion and sediment control requirements. This goal could be tracked by documenting attendance at local, state, or federal training programs. Attendance can be encouraged by requiring contractors to provide proof of training for annual certification or licensing when applying for permits.

Success will also be measured by the following:

- Number of public complaints addressed to correct stormwater pollution runoff from construction sites
- Number of inspections conducted and repeated by City staff to identify and correct stormwater pollution violations
- Number of notices of violation or penalties issued to construction site contractors or developers
- Observations from outfall inspections

3.5 Control Measure 5: Post-Construction Stormwater Management

Description

This minimum control requires the City to develop, implement, maintain 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. The City's program will additionally address post-construction stormwater runoff controls for projects that are less than one acre but are part of a larger common plan for development that disturbs one or more acres.

The City will carefully consider the relationship between construction and post-construction stormwater. Construction stormwater BMPs listed in a SWPPP are designed to minimize impacts during the active construction phase, and they do not always translate into BMPs applicable for post-construction. Post-construction PMPs must treat runoff from the newly constructed or redeveloped site, including runoff from roads, parking lots, yards, rooftops, and other land uses associated with the development.

The program will include the use of BMPs to prevent or minimize adverse water quality impacts, as well as strategies that include a combination of structural and/or non-structural

BMPs appropriate for the municipality. The program will also ensure adequate long-term operation and maintenance of those structural BMPs.

In addition to the program described above, the City will implement sufficient BMPs with measureable goals in the table below to qualify for the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 5 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 7 points for each calendar year beginning in 2023 for the duration of the permit cycle.

Benefit

Conversion of the native landscape to a developed landscape increases both the volume and quality of runoff and pollutant loads in stormwater. The consequences can include erosion, flooding, and pollution, impacting both downstream property owners and public infrastructure. Soil exposed by construction activities is especially vulnerable to erosion. Runoff from an unstabilized construction site can result in the loss of approximately 35–45 tons of sediment per acre each year (ASCE and WFF, 1992). Even in a short period of time, construction sites can contribute more sediment to streams than would be deposited naturally over several years.

The environmental effects of development can make it more difficult for the community to protect its natural resources. Where and how Lawrence accommodates growth influences the quality of streams, rivers, and lakes. By supporting development practices that use land efficiently and protects undisturbed natural land, the community can grow while still protecting water resources. Lasting stormwater controls included with development sites can help reduce these adverse impacts and costs to both private property owners and the public.

BMPs, Goals, and Staff

No. 5 - Post-Construction Stormwater Management in New Development and Redevelopment Projects					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, etc.**		
			Schedule	**Planned Points**	**Notes**
5.01	Develop and adopt a custom design manual for Post-Construction Stormwater Management that specifies various structural BMPs which are required for new development and re-development construction sites that are greater than 1 acre or for which there is construction activity disturbing less than one acre that is part of a larger common plan of development or sale that in total disturbs one acre or more. Alternately, adopt and implement the APWA 5600 Stormwater Design Criteria and the MARC/APWA BMP Manual.	The custom design manual shall impose requirements to achieve at least one of the following standards: Capture, at least, the first 0.5 inches of precipitation on the development/re-development site and utilize methods to prevent discharge off-site, including but not limited to: • retain on-site • infiltrate • evaporate • transpire • 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	2021	4	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. 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.
			2022	3	

		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.	2023 2024	3	
Lead Staff: EHS & Stormwater Engineering Program Manager					
5.02	Develop a list of post-construction structural or non-structural BMPs, which are required to be incorporated in any development/re-development project. The list must include guidance regarding the BMPs, which must be incorporated in various projects as determined appropriate by the permittee. The list is to be provided to entities involved with the design of projects prior to site plan review by the permittee.	Development and implementation of the list and guidance is necessary to claim points in the first year. The list of required BMPs must be enforceable through ordinance or other means.	2021 2022 2023 2024		Development of the list and guidance 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. 3 points may be claimed in the year of initial implementation. 2 points may be claimed for each successive year the list is maintained and implemented.
Lead Staff: EHS					
5.03	Develop and implement a program to ensure adequate long-term cleaning, operation and maintenance of all municipally owned or operated post-construction structural stormwater	The program shall be detailed in a written document and made available to all pertinent maintenance staff.	2021	3	Development of the program 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.

	BMP facilities. The program shall address several different types of these BMP systems. The systems, which are addressed, shall include any type of post-construction structural BMP system, contained in the MS4. These shall include, if so present, at a minimum the following: • detention ponds • retention ponds • grass swales • wetlands • pervious paving systems • vegetative filter strips • drop inlet-catch basin • manufactured stormwater treatment devices (swirl separators, screens, etc.)		2022	2	3 points may be claimed in the year of initial implementation. 2 points may be claimed for each successive year the program is maintained and utilized.
			2023	2	
			2024	2	
Lead Staff: EHS, Stormwater Engineering Program Manager, & PIO					
5.04	Develop a master plan or comprehensive development plan, which establishes zoning and development standards with establishment of both structural and non-structural BMPs intended to avoid or minimize adverse water quality impacts post-construction.	Runoff problems can be addressed efficiently with sound planning procedures. This master or comprehensive development plan must include, if not already implemented, a zoning ordinance, a stream buffer ordinance, site plan development requirements which include minimizing the increase of impervious surfaces and maximization/preservation of open space. The plan must also impose requirements for new development or re-development projects to utilize stormwater retention or detention BMPs and vegetative BMPs (such as grassy swales, filter strips, artificial wetlands, and rain gardens).	2021		After all aspects are implemented including final implementation of the master or comprehensive development plan, along with enactment of the required ordinances points for implementation of this BMP can initially be claimed. 5 points may be claimed in the year all aspects are initially implemented. 2 points may be claimed for each successive year all aspects continue to be implemented.
			2022		
			2023		
			2024		
Lead Staff: EHS, Stormwater Engineering Program Manager, & PIO					

5.05	Develop and implement a program for inspection of permittee owned structural BMPs which includes implementation of needed maintenance to ensure long-term operation of the BMPs	The program shall require inspection of at least 10% of the structural BMPs on an annual basis. Identified maintenance activities shall be completed: • in the same year of inspection or • completed as dictated by the permittee's maintenance/O&M plan 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.	2021	3	The program shall be developed and implemented within a single year. 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.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS, Stormwater Engineering Program Manager, & PIO					
5.06	Develop and implement a program for inspection of known privately owned structural BMPs which includes providing the owner of the BMPs an inspection report which specifies needed maintenance to ensure long-term operation of the BMPs.	The program shall require inspection of at least 10% of the known privately owned structural BMPs on an annual basis.Identified maintenance activities shall be completed in the same year of inspection 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.	2021		The program shall be developed and implemented within a single year. 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.
			2022	3	
			2023	2	
			2024	3	
Lead Staff: EHS					
5.07	Enact either an ordinance, a resolution, or other enforceable requirement, which requires the installation of pervious surfaces on property.	The ordinance or resolution or other enforceable requirement must specify when installation of impervious surfaces is not acceptable and what allowable	2021	3	The year the ordinance or resolution or other enforceable requirement is implemented points may be claimed and continued implementation can allow points to be claimed in subsequent years.
			2022	2	

		pervious surfaces can be installed in lieu of impervious surfaces.	2023	2	3 points may be claimed in the year of initial implementation. 2 points may be claimed for each successive year the ordinance or resolution or other enforceable requirement is implemented.
			2024	2	
Lead Staff: EHS & Stormwater Engineering Program Manager					
5.08	Implement a program to encourage residential owners to install stormwater BMPs, including but not limited to, native trees, native flower gardens, rain gardens, rain barrels, pervious surfaces, and vegetated swales.	A program that results in installation of such BMPs on 1% of the residential parcels in a year will allow two points to be claimed for that year. In a year when installation of such BMPs on 5% of the residential parcels occurs, a larger number of points may be claimed.	2021		The number of residential parcels improved to qualify for points must occur in a single calendar year. 2 points may be claimed in a year BMPs are installed on 1% of the residential parcels. 4 points may be claimed in a year BMPs are installed on 5% of the residential parcels.
			2022		
			2023		
			2024		
Lead Staff: EHS, Stormwater Engineering Program Manager, & PIO					

BMP Summary Table:		**Year**	**Points Earned**	**Note**
Post-Construction Stormwater Management in New Development and Redevelopment Projects The City of Lawrence will earn a minimum of 5 points annually for years 2021 and 2022 and 7 points in years 2023 and 2024.		2021	9	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
		2022	5	
		2023	7	
		2024	9	

BMP POINT GOAL SUMMARY TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
5.01	4	3	3	
5.02				
5.03	3	2	2	2
5.04				
5.05	3	2	2	2
5.06		3	2	3
5.07	3	2	2	2

5.08				
YEARLY TOTAL	13	12	11	9

Program Assessment

The overall success of this control measure will be measured by the effective implementation of the program components, including the adoption and enforcement of the design manual that imposes requirements to capture necessary precipitation on development and redevelopment sites and the inspection and maintenance of all municipally owned and operated post-construction structural BMPs. The City will also continue to enforce Ordinance No. 9772, which requires developers to mitigate the impact of excess parking through the use of BMPs as described in the City's adopted BMP manual.

Success will also be measured by the following:

- Records of cleaning, operation, and maintenance of all municipally owned or operated post-construction structural stormwater BMP facilities. The program shall address several different types of these BMP systems.
- Number of inspections of city-owned structural BMPs, including appropriate maintenance to ensure long-term operation of the BMPs.
- Number of inspections of known privately-owned structural BMPs in which the owner is provided an inspection report and educational material.

3.6 Control Measure 6: Municipal Pollution Prevention/Housekeeping

Description

This minimum control measure requires the development and implementation of a program focused on operation, maintenance, and employee training efforts 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.

In addition to the program described above, the City will implement sufficient BMPs with measureable goals in the table below to qualify for the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 4 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 6 points for each calendar year beginning in 2023 for the remainder of the permit cycle.

Benefit

The City is committed to lead by example on managing public facilities and projects to reduce and prevent pollution, and to demonstrate and teach proper stormwater pollution reduction techniques to other community landowners. As part of its Strategic Plan, the City commits to environmental sustainability, considering the environmental consequences of every decision and the impacts our actions have beyond our boundaries. Stormwater pollution prevention and management is an important component of the outcomes of the City's environmental sustainability commitment.

BMPs, Goals, and Staff

No. 6 - Pollution Prevention/Good Housekeeping for Municipal Operations					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, etc.**		
			Schedule	**Planned Points**	**Notes**
6.01	Install a screening device or method at a single municipal storm sewer outfall or on the storm sewer line immediately upstream of the outfall to reduce the discharge of floatables or other objects to receiving waters.	The screening device or method is required to remove objects that exceed at least 1½ inches in size. The device or method must be capable of continuous operation during stormwater discharges. An emergency bypass or overflow line can be included to avoid surcharging/flooding in the event the screening device or method fails to operate properly at any time. A log of the material captured and prevented from discharge to the receiving water shall be maintained.	2021		Volume or weight of the material shall be documented for either each discharge event or on a quarterly basis. 3 points may be claimed in the year the screening device or method is initially implemented. 2 points may be claimed for each successive year the screening device or method continues to be implemented.
			2022		
			2023		
			2024		
Lead Staff: EHS, Stormwater Engineering Program Manager, & MSO Field staff					
6.02	Implement a recycle and proper waste disposal program for municipal staff to reduce potential for litter, to recycle waste oil, batteries, glass containers, plastic containers, and paper products.	A log of the materials directed to recycle shall be maintained. Entries in the log shall record either weight or volume of recycle materials removed from the containers and transported to the recycle facility as well as the date of transport.	2021	3	Recycle containers shall be available for staff use all days of the year in which points are claimed. 3 points may be claimed in the year recycle containers are made available for municipal staff use and the recycle program is initially implemented. 2 points may be claimed for each successive year the recycle program continues to be implemented.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS, MSO staff, & Sustainability Office					

6.03	Develop a guidance document for municipal staff or third-party contractors that apply pesticides. The guidance shall require any municipal staff who apply restricted use pesticides to have a commercial applicator certification from the Kansas Department of Agriculture if required by that Department.	Require staff that apply pesticides to use such pesticides in compliance with the guidance document. The guidance document must require use of pesticides in compliance with the label instructions.	2021	2	The guidance document must be finalized and implemented in the year which points are initially claimed. 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.
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS, & Parks and Recreation Department (PR)					
6.04	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 is not discharged untreated to the MS4 or directly to the environment.	2021		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.
			2022	2	
			2023	1	
			2024	1	
Lead Staff: EHS					
6.05	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 that 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	2021	3	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 that can be swept must be swept in
			2022	2	

		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	2023	2	a year to claim points. 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 that can be swept are swept in a year 2 points may be claimed.
			2024	2	
Lead Staff: FIO					
6.06	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.	2021	1	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.
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS					
6.07	Implement a program to inspect stormwater inlets to identify illicit discharges and clean drop inlets of accumulated debris.	Inspect at least 5% of all inlets annually. Additionally, if 10% of all inlets are inspected in a year an additional point may be claimed. For any inlets that have evidence of dumped paint, oil or other	2021	1	For each year in which staff inspect at least 5% of all stormwater inlets at least one point may be claimed. In years when staff inspect at least 5% of all stormwater inlets and remove accumulated debris, 1 point may be
			2022	1	

		substances that are considered illicit discharges follow up with efforts to educate individuals near the impacted inlet about illicit discharges. For inlets that have any accumulation of debris, remove the debris for proper disposal.	2023	1	claimed. In years when staff inspect at least 10% of all stormwater inlets and remove accumulated debris 2 points may be claimed.
			2024	1	
Lead Staff: EHS, FIO, & GIS staff					
6.08	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.	2021	3	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.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS, MSO Water Quality Lab, & GIS staff					
6.09	Identify permittee owned facilities, open space and buildings that can be retrofitted for stormwater BMPs.	Retrofit projects can include: • green infrastructure, • catchment improvements, • Pollutant of Concern targeted BMPs, and • native plant restoration projects.	2021		The site(s) must be retrofitted with stormwater BMPs as listed in the measurable goals. Points can be awarded in the first year the BMPs are installed and operation begins, and points may be claimed for each year the retrofitted BMPs continue to be operated. 1 point may be claimed in the first year for each site retrofitted (up to two sites/points maximum. 2 points may be claimed for each year at least two sites continue to operate all of the retrofitted BMPs that were installed.
			2022		
			2023		
			2024		
Lead Staff: EHS					
6.10	Install and operate a constructed wetland at a municipal facility such as at a parking lot, shop, maintenance facility, rest area or any other industrial/commercial	The wetland shall include a water surface area of at least 1/4 acre or equivalent submerged surface area for submerged wetlands.	2021	1	Points may be claimed in the year the wetland is constructed and in subsequent years the wetland remains in operation.
			2022	1	

	type facility, e.g. recycling facility, transfer station, kennel, or airport.		2023	1	2 points may be claimed for the year in which the wetland is constructed. 1 point may be claimed for each subsequent year the wetland remains in operation.
			2024	1	
Lead Staff: EHS & MSO Construction Management, Engineering, & Development (CMED)					
6.11	Install a canopy or other covered area for load-out of salt or other de-icing chemicals where such de-icing materials are stored either within the permit area or a storage facility located within 30 miles of this permit area. The canopy or other covered area for load-out of salt or other de-icing materials may be installed at a facility owned by the permittee or at a facility owned by an entity the permittee contracts with as long as the facility is located within 30 miles of this permit area.	The canopy or covered area shall be large enough to allow normal load-out and cleanup of spilled de-icing materials, without mixing with precipitation and resulting in contaminated runoff from the site, during and immediately following load out operations	2021	2	Points may be claimed in the initial year of construction and in subsequent years the canopy/covered area remains in operation. 3 points may be claimed for the year in which the canopy/covered area is constructed. 2 points may be claimed for each subsequent year the canopy/covered area remains in operation.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS & FIO					
6.12	Install a stormwater treatment system for capture of either trash, sediment, or debris. Systems may include any proprietary stormwater treatment system including CDS, Hancor, Enviro 21, etc. or similar custom designed systems. A system can be installed at a single municipal storm sewer outfall or on the storm sewer line immediately upstream of the outfall to reduce the discharge of floatables or other	The treatment system or method must be capable of continuous operation during stormwater discharges.An emergency bypass or overflow line can be included to avoid surcharging/flooding in the event the system is overloaded or fails to operate properly at any time.A log of the material (noting either volume or weight) captured and prevented from discharge to	2021		Volume or weight of the material shall be documented for either each discharge event, on a quarterly basis or at least annually. 3 points may be claimed in the year the treatment system is initially implemented. 2 points may be claimed for each successive year the treatment system continues to be implemented.
			2022		
			2023	3	

	objects to receiving waters. Alternately, a system may be installed on a stormwater line to provide treatment at problem locations	the receiving water shall be maintained.	2024	2	
Lead Staff: EHS					

BMP Summary Table:		**Year**	**Points Earned**	**Note**
Pollution Prevention/Good Housekeeping for Municipal Operations The City of Lawrence will earn a minimum of 4 points annually for years 2021 and 2022 and 6 points in years 2023 and 2024.		2021	17	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
		2022	13	
		2023	16	
		2024	17	

BMP POINT GOAL SUMMARY TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
6.01				
6.02	3	2	2	2
6.03	2	1	1	1
6.04		2	1	1
6.05	3	2	2	2
6.06	1	1	1	1
6.07	1	1	1	1
6.08	3	2	2	2
6.09				
6.10	1	1	1	1
6.11	2	2	2	2
6.12			3	2
YEARLY TOTAL	16	14	16	15

Program Assessment

The overall success of the Pollution Prevention/Good Housekeeping Program will be measured through the successful implementation of facility Stormwater Pollution Prevention Plans (SWPPPs), employee training, and facility inspections conducted as part of the program. Program assessment will be reported with each annual NPDES report discussing the activities completed in this section for the previous program year.

In addition, success will also be measured by:

- The number of inspections conducted and stormwater inlets cleaned
- The number of new pollution prevention practices implemented to resolve deficiencies
- Training classes attended by City employees
- Tons of debris swept
- Volume of leaves/yard waste collected
- Updates to manuals or SOPs
- Number of online storm sewer map users

4.0 TMDL POLLUTANTS

The City is required to continue to review, update, implement and develop, when necessary, structural and non-structural BMPs which will reduce to the Maximum Extent Practicable the discharge of the Total Maximum Daily Load (TMDL) regulated pollutants from the MS4 as follow:

TMDL Regulated Pollutant	Specific Impaired Stream(s) to Target
Bacteria	Yankee Tank Creek, Wakarusa River, Baldwin Creek, Kansas River
Nutrients	Wakarusa River, Kansas River
Sediment	Wakarusa River, Kansas River

TMDLs are established for waters found on the Clean Water Act (CWA) Section 303(d) list of impaired waters. The purpose of the TMDL is to define the necessary and allowable loads that may enter those waters to meet the Kansas Water Quality Standards and attain a

condition that fully supports all applicable designated uses. The TMDL allocates allowable loads among the likely point and non-point sources within the impaired watershed. Implementation of the TMDL by the regulated point source and nonpoint source programs brings about pollutant load reductions from potential or known sources through permits, numeric goals, or narrative actions that improve water quality to meet applicable water quality standards.

Wet weather surface water quality monitoring is no longer conducted on the Kansas River. It is required on Yankee Tank Creek, Wakarusa River, and Baldwin Creek under the effective permit. The permitted surface water monitoring locations are identified as follows:

SURFACE WATER MONITORING LOCATIONS			
LOCAL SITE NAME	LOCAL ID.	LOCATION DESCRIPTION	KDHE EDMR CODE
Wakarusa River Upstream	WKR Up	Wakarusa River Upstream at the outfall of Clinton Lake Reservoir.	WAKUP006A6
Wakarusa River Downstream	WKR Down	Wakarusa River Downstream at E. 1900 Rd.	WAKDN006B6
Baldwin Creek	BLD	Baldwin Creek at E. 1150 Rd.	BLD007B6
Yankee Tank Creek	YKE	Yankee Tank Creek at E. 1200 Rd.	YKE008B6

The City is additionally sampling two optional locations to supplement this information:

LOCAL SITE NAME	LOCAL ID.	LOCATION DESCRIPTION
Inverness Creek – Optional	INVopt	Inverness Creek at 27th and Crossgate Dr.
Yankee Tank Creek – Optional	YKEopt	Yankee Tank Creek at N. 1500 Rd.

Best Management Practices (BMPs)

MS4 permit compliance focuses largely on developing and implementing a suite of structural and non-structural BMPs designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable. BMPs are defined broadly as “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States (WOTUS). BMPs generally fall into two categories: structural and non-structural. Structural BMPs are physical structures or features that are intended to collect, treat, infiltrate, and/or convey stormwater. Examples of structural BMPs include:

- Retention ponds and swales

- Rain gardens
- Green roofs
- Constructed wetland
- Pervious pavement

Non-structural BMPs include various practices or actions that are intended to directly reduce stormwater pollution or encourage the public to take steps to reduce stormwater pollution. Examples of non-structural BMPs include:

- Public signage encouraging pet owners to pick up animal waste or stating that storm drains discharge to local waters
- Street sweeping program
- Ordinance prohibiting non-stormwater discharges to the MS4
- Inspection and maintenance schedule for structural BMPs
- Public education sessions
- Public rain barrel distribution program

All six of the minimum control measures are designed to reduce pollutants in stormwater runoff. BMPs targeting bacteria, nutrients, and sediment, the most common TMDL pollutants in Lawrence, are addressed through the following control measures:

Bacteria
Public Education and Outreach
Public Involvement and Participation
Illicit Discharge Detection
Post-Construction Runoff Controls requiring the implementation of post-construction BMPs

Nutrients
Public Education and Outreach
Public Involvement and Participation
Post-Construction Runoff Controls requiring the implementation of post-construction BMPs
Pollution Prevention/ Good Housekeeping

Sediment
Public Involvement and Participation
Construction Stormwater Runoff
Post-Construction Runoff Controls requiring the implementation of post-construction BMPs
Pollution Prevention/Good Housekeeping

The implementation of BMPs for TMDL and surface water monitoring must result in the accumulation of a minimum of 4 points total on an annual basis for each calendar year 2021 and 2022. The point total requirement increases to 6 points for each calendar year beginning in 2023 for the remainder of the permit cycle. The following table lists various BMPs, with

measurable goals, and the schedule by which BMPs will be implemented to qualify for the points in the year.

In addition to the program described above, the City will implement sufficient BMPs with measurable goals in the table below to qualify for the required number of points in each year within the permit cycle. The implementation of BMPs for this minimum control measure must result in the accumulation of a minimum of 4 points total on an annual basis for each calendar year in 2021 and 2022. The point total requirement increases to 6 points for each calendar year beginning in 2023 for the remainder of the permit cycle.

Total Maximum Daily Load (TMDL) BMPs					
BMP	**BMP Description**	**Measurable Goal**	**Implementation Time Schedule, etc.**		
			Schedule	**Planned Points**	**Notes**
1	Install pet waste stations that include a glove/bag dispenser with signage and waste can to encourage pet waste disposal at either parks, trails, rest areas or other public lands owned by the permittee.	At least one pet waste station shall be installed at the selected park, trail, rest area or other public land. The station(s) shall include signage, which encourages proper pet waste disposal/cleanup, and a waste can.	2021	1	The point may be claimed In the year the Measurable Goal requirement is implemented and for each year thereafter that 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.
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS & PIO					
2	Establish a program to encourage installation of residential rain gardens.	Provide public education on rain gardens and design guidance for the installation of residential rain gardens. The rain gardens must have a minimum area of 20 square feet. The installation of rain gardens on five various residential parcels shall qualify the permittee to claim points for this BMP.	2021		In the year five or more residential rain gardens are finally constructed and become operational, the points may be initially claimed and in subsequent years when at least five residential rain gardens remain operational points may be claimed. 3 points may be claimed for the year in which five or more residential parcels install rain gardens and initiate operation. 2 points may be claimed for each subsequent year at least five or more residential parcels have rain gardens remain in operation.
			2022		
			2023		
			2024		
Lead Staff: EHS					
3	Install and operate a constructed wetland.	The wetland shall include a water surface area of at least one acre or equivalent submerged surface area for submerged wetlands.	2021	2	Points may be claimed in the year the wetland is constructed and in subsequent years the wetland remains in operation. 3 points may be claimed for the year in which the wetland is constructed. 2 points may be
			2022	2	
			2023	2	

			2024	2	claimed for each subsequent year the wetland remains in operation.
Lead Staff: EHS					
4	Enact a stream buffer ordinance, resolution, or other enforceable requirement to impose stream buffer standards.	The enactment of stream buffer standards must include enforcement capability. Consider use of the EPA stream buffer model ordinance or similar such requirement.	2021		The year the ordinance, resolution or other enforceable requirement is enacted points may be claimed. Also, points may be claimed for subsequent years the ordinance, resolution or other enforceable requirement remains in effect. 3 points may be claimed for the year in which the ordinance, resolution or other enforceable requirement is enacted. 2 points may be claimed for each subsequent year it remains in effect.
			2022	3	
			2023		
			2024		
Lead Staff: EHS, Stormwater Engineering Program Manager, & PDS					
5	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.	2021	1	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.
			2022	1	
			2023	1	
			2024	1	
Lead Staff: EHS					
6	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	2021	2	The documents may be distributed in any fashion and at any time throughout the year. .Alternately, the document may be posted to

		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.	2022	2	social media (at least three times in the year) or posted on the municipal website for a minimum of three months in the year to qualify for points. 2 points may be claimed in a year in which the required number of hangers or similar documents are distributed or alternately posted to social media or the municipal website for the required time.
			2023	2	
			2024	2	
Lead Staff: EHS					
7	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 of the discharge is illicit. Document the findings and initiate efforts to eliminate any identified illicit discharges	2021	3	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.
			2022	3	
			2023	3	
			2024	3	
Lead Staff: EHS, Stormwater Engineering Program Manager, & FIO					

8	Implement an Alternative Stormwater Offsite Pollution Reduction Program.	This program will include installation of BMPs in alternative locations, including outside the Permit Area, within the watershed shared by urban entities or urban and non-urban entities. The alternative stormwater offsite pollution reduction program shall be developed with watershed interests, such as other communities, Watershed Restoration and Protection Strategy (WRAPS) groups and Conservation Districts lying outside the Permit Area for the joint purpose of reducing pollutant loads generated from urban and non-urban lands within the shared watershed. Candidate offsite locations and practices will be consistent with implementing existing watershed plans that identify specific urban and non-urban (such as agricultural) BMP types and locations to achieve TMDLs reductions. The Alternative Stormwater Offsite Pollution Reduction Program shall be subject to KDHE approval and approved by KDHE prior to incorporation into the permittee's SMP.	2021		In the year the Alternative Stormwater Offsite Pollution Reduction Program is approved by KDHE, points may be claimed. In subsequent years in which the program is maintained points may be claimed. 5 points may be claimed in the year KDHE approves the program. 4 points may be claimed for each subsequent year it remains in effect.
			2022		
			2023		
			2024		
Lead Staff: EHS					
9	Implement a program to collect and properly dispose of litter, on four separate occasions per calendar year, within areas where littering has been identified as a problem. Such areas may include municipal parks, trails, rest areas,	The four litter collection efforts should, but are not required to, occur seasonally, i.e., winter, spring, summer and fall. If it is unreasonable to collect litter in any season, the required four collection efforts may occur in	2021		The four collection efforts must occur in a calendar year. 2 points may be claimed for any year in which four collection efforts have occurred in compliance with the requirements of this BMP.
			2022		
			2023	2	

	or other public lands owned by the permittee.	either three seasons or in a minimum of two seasons.	2024	2	
Lead Staff: EHS					
10	Establish a program to encourage Rainwater Harvesting.	Provide public education on rainwater harvesting and design guidance for the installation of rain barrels, cisterns, raingardens and other rainwater harvesting devices. When rain barrels are utilized, they must be a minimum size of 50 gallons. When raingardens are utilized, they must be a minimum of 20 square feet. A rain harvesting system on a commercial setting must have adequate capacity to hold the runoff from the impervious surface for which it is designed to collect on the commercial parcel equal to that generated by a 0.1-inch rainfall event. The installation of rain barrels or rain gardens on five residential lots, or the installation of one rain harvesting system in a commercial setting shall qualify the permittee to claim points for this BMP.	2021		In the year five or more residential rain barrel systems or one commercial cistern are finally constructed and become operational the points may be initially claimed and in subsequent years when at least five residential rain barrel systems or one commercial cistern remain operational points may be claimed. 3 points may be claimed for any year in which sufficient rain harvesting systems are constructed or maintained in operation in compliance with the requirements of this BMP.
			2022		
			2023		
			2024		
Lead Staff: EHS, Stormwater Engineering Program Manager, & PIO					
11	Construct and maintain a structural BMP to reduce loadings of sediment and nutrients, including bioretention, detention basins, porous pavement, retention ponds, media filters and any composite treatment trains of multiple BMPs	A construction project installing a structural BMP must be completed prior to awarding of points. Any individual project will be awarded points scaled on the basis of the extent of the contributing area that the BMP will control. The permittee will document maintenance of the constructed BMP in subsequent	2021		By year five of this permit, at least two structural BMP projects will be constructed and maintained. Points will be awarded in the year construction was completed and subsequent points will be awarded in the subsequent years after documentation of maintenance of the project. 4 points may be claimed for any year in which a structural BMP project is completed for a
			2022		

		years to continue to be awarded points.	2023		contributing area exceeding one acre. 3 points may be claimed for any year in which a structural project is completed for a contributing area under one acre. A bonus point may be awarded for a composite BMP project. 2 points may be awarded in subsequent years upon documentation of ongoing maintenance of the BMPs.
			2024	2	
Lead Staff: EHS					
12	Construct a streambank stabilization project.	Install a minimum of 100 feet of bank stabilization at a site(s) with a history of erosion.	2021	2	The installation of, the minimum 100 feet of bank stabilization must occur in the year points are claimed at a single site or at multiple sites. The sites may be on the same stream or on different streams. 3 points may be claimed for the year in which the required minimum amount of stream bank stabilization is installed. 2 points may be claimed for each subsequent year it remains in effect.
			2022	2	
			2023	2	
			2024	2	
Lead Staff: EHS					

BMP Summary Table:		**Year**	**Points Earned**	**Note**
Total Maximum Daily Load (TMDL) The City of Lawrence will earn a minimum of 4 points annually for years 2021 and 2022 and 6 points for years 2023 and 2024.		2021	12	*BMP Point totals are left blank intentionally and are meant for tracking as the Plan progresses.*
		2022	14	
		2023	17	
		2024	23	

BMP POINT GOAL SUMMARY TABLE				
BMP	**2021**	**2022**	**2023**	**2024**
1	1	1	1	1
2				
3	2	2	2	2
4		3		
5	1	1	1	1
6	2	2	2	2
7	3	3	3	3
8				
9			2	2
10				
11				2
12	2	2	2	2
YEARLY TOTAL	11	14	13	15

Pollutant Reduction Goals

Success in achieving reductions in bacteria, sediment and nutrients will be assessed by directly monitoring in-stream concentrations and evaluating pollutant concentration trends across the permit period. The MSO section conducts the monitoring program on behalf of the City.

TMDL measurable goals will be based upon an in-stream sampling of the streams existing in or adjacent to the permit area during or immediately following storm events. Results of samples obtained to determine the performance of BMPs are maintained on file in compliance with the Standard Conditions records retention requirement and will be reported to KDHE via the electronic DMR process and summarized in the annual report.

Individual or sub-basin BMP performance goals may include in-stream or BMP discharge sampling locations based upon individual BMPs, sub-basin BMPs, or aggregate BMPs. Adaptive management will be utilized in an effort to reduce the discharge of TMDL regulated pollutants. New approaches will be reviewed and evaluated for implementation throughout the permit cycle. Adjustments to the SMP will be made as necessary to document program adjustments resulting from this iterative process.

Measurable goals for reducing TMDL pollutants contributed by MS4s can be expressed in quantifiable values to:

1. reduce the total mass of pollutants, and
2. be expressed as average and median values (percent reduction of inflow volume, reduction in pollutant mass loading) or for bacteria as a geometric mean.

5.0 MONITORING

Storm Event Monitoring

The City implemented a wet weather monitoring program to assess the impact of precipitation-related runoff to water bodies within and discharging from the permitted jurisdictional boundary of the City. Stormwater sampling will be conducted at the four required locations noted in the permit, and the City chooses two additional locations during qualifying stormwater sampling events from March through October. The parameters monitored per the permit are based on approved Total Maximum Daily Loads.

All permitted sites are required to be sampled for bacteria (*E. coli*). The sampling sites on the Wakarusa River are additionally required to be sampled for nutrients and sediment per the table below. The City intends to analyze nutrients and *E.Coli* at all optional and required

sampling sites if resources allow. Sediment samples will only be collected from the Wakarusa River sampling sites as required. The monitoring program will enable the City to support adaptive stormwater management and the evaluation of SMP effectiveness in reducing the discharge of pollutants from the MS4.

The storm event monitoring data may be used to assist in evaluating trends in water quality. Monitoring results will be reported annually to KDHE as part of the annual report.

In addition to the storm event monitoring, the City may conduct dry weather monitoring, as appropriate to determine the effectiveness of the six minimum control measures, to detect illicit discharges, or to confirm baseline water quality data. Supplemental monitoring results will be utilized to evaluate pollutant loading trends over different hydrological conditions.

The overall monitoring program includes:

- A network of four required and two supplemental sites where discrete grab samples are collected.
- Analyses targeting nutrients, suspended sediment, and *Escherichia coli* bacteria.
- Four samples collected at each site annually during qualifying stormwater sampling events from March through October. If environmental conditions allow, two samples will be collected from March 1-June 30 and two samples from July 1- October 31.
- Conducting the first four sampling events during a qualifying event as described in the permit beginning after March 1, when a rainfall event exceeds 0.25 inches in the previous 24 hours. The City does not intend to sample more than two events in any one month.
- Maintaining an MS4 sampling plan, that details procedures and protocols for wet weather sampling and the monitoring program.
- Data to be compiled and reviewed on a routine basis to assess water quality conditions and trends.

A map of TMDL monitoring locations is included as Appendix A.

6.0 PERMIT COMPLIANCE SCHEDULE AND ANNUAL REPORTING

Permit Compliance Schedule

Part IV of the 2019 issued permit includes the following compliance schedule requirements:

Year 2019:

The City started allocating time and effort to complete updates to the Stormwater Management Program document in 2019. The City continued the TMDL storm event monitoring of streams and reported results via the eDMR and permit term final report on effectiveness of source controls and structural BMPs to achieve the measurable goals.

Year 2020:

The City performed 8 TMDL storm monitoring sampling events. Sampling results were uploaded and submitted via the eDMR reporting process for all monitoring by January 28, 2021.

The City prepared the required information regarding the wet weather surface water monitoring map and detail of sampling locations within 100 days of the effective date of the permit issued in 2019.

The Annual Report for the calendar year 2019 was submitted to KDHE on February 27, 2020. The wet weather surface monitoring map was submitted on February 28, 2020.

The City worked on the majority of updates to the SMP for submittal with the 2020 annual report.

Year 2021:

EHS will continue source control programs and monitoring of storm events at selected sites. The City plans to submit the SMP document to KDHE with the 2020 Annual Report between January 1 and February 28, 2021.

Listed BMPs sufficient to achieve minimum point requirements for each year will be implemented beginning in 2021.

The City will also continue the TMDL storm event monitoring of streams with results reported via the eDMR reporting process for all monitoring within the calendar year by no later than January 28 of the following year.

Year 2022:

EHS will continue source control programs and monitoring of storm events at selected sites.

The City will complete TMDL storm event monitoring of streams and report results via the eDMR reporting process for all monitoring within the calendar year by no later than January 28 of the following year.

The City will continue to implement BMPs sufficient to achieve the minimum point requirements as outlined in the permit. The City will select, design, and initiate the installation of appropriate structural BMPs.

Year 2023:

The city will continue TMDL storm event monitoring of streams and report results via the eDMR reporting process for all monitoring within the calendar year by no later than January 28 of the following year.

EHS will continue stream/lake/BMP outfall monitoring and effective source control programs.

BMP installations will be completed by the end of the year. BMPs will be implemented to achieve the minimum point requirements as outlined in the permit, which increases from 2022.

The City will submit the Annual Report for the calendar year 2022 to KDHE between January 1 and February 28, 2023.

Year 2024:

The City will continue to complete TMDL storm event monitoring of streams and report results via the eDMR reporting process for all monitoring within the calendar year by no later than January 28 of the following year.

EHS will continue stream/lake/BMP outfall monitoring and effective source control programs.

By February 28, 2024, a final report will be provided on the effectiveness of source controls and structural BMPs to achieve the measurable goals and summarize water quality data from selected monitoring sites. The City will submit the annual report for the calendar year 2023 to KDHE between January 1 and February 28, 2024.

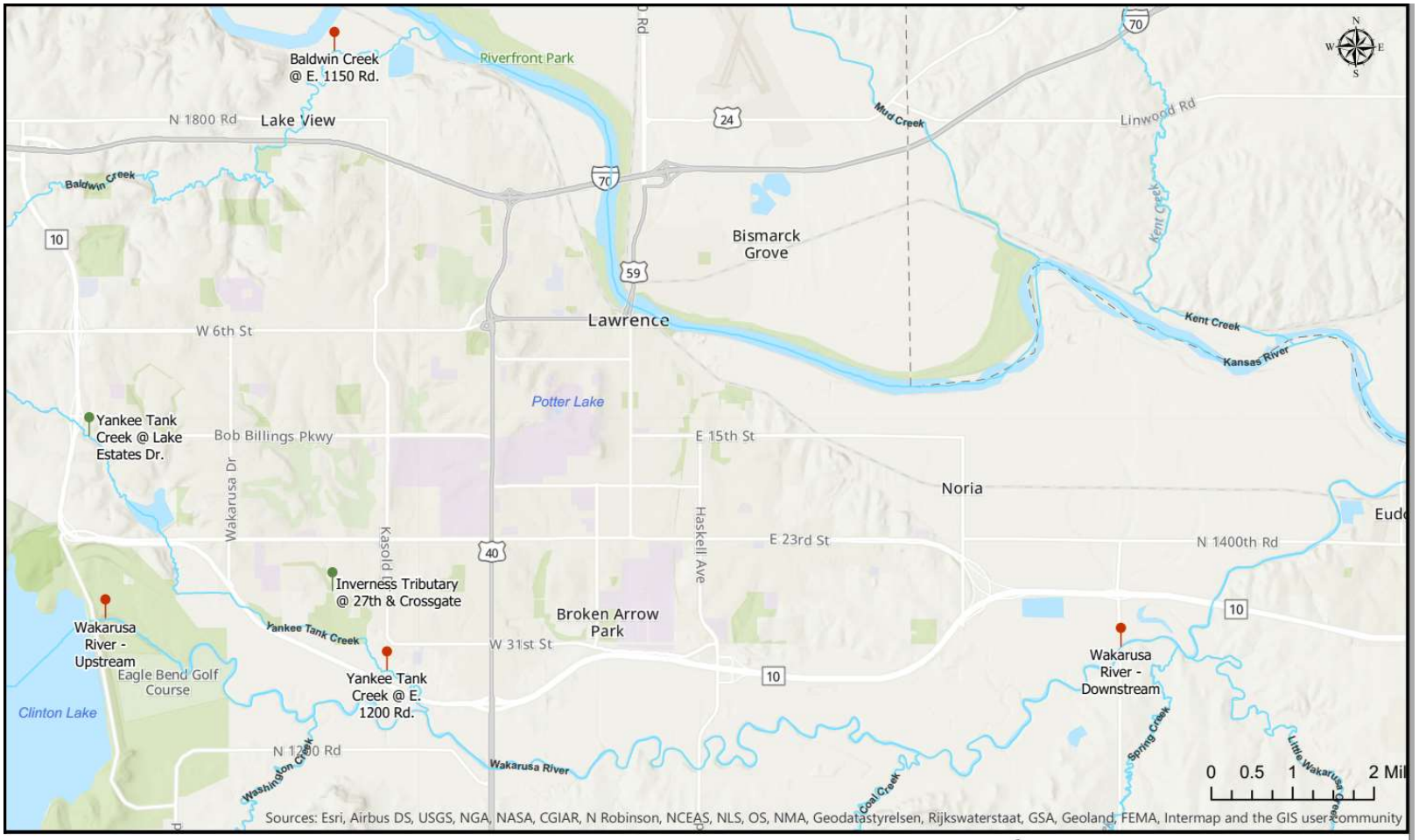
By February 28, 2025, a copy of the initial updated/implemented SMP document will be developed pursuant to this permit's requirements and submitted to KDHE for review. Subsequent annual reports shall be submitted to KDHE by February 28 of each year for the preceding calendar year

Reporting

The City will submit an annual report to KDHE by February 28 of each year with the initial report under this permit due February 28, 2021, for the calendar year 2020. The report will cover the activities during the previous calendar year and will include:

- The status of compliance with permit conditions, an assessment of the appropriateness of the selected BMPs, progress towards achieving the statutory goal of reducing the discharge of the 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 and TMDLs as listed in the Stormwater Management Program document.
- Results of information collected and analyzed, if any, during the annual reporting period, including monitoring data used to assess the success of the program of reducing the TMDL regulated pollutants
- A summary of stormwater activities that were scheduled to be undertaken during the previous calendar year and the status of these activities
- A summary of stormwater activities that are scheduled to be undertaken during the next reporting cycle (including an implementation schedule)
- A map showing any changes in the permittee's jurisdictional Permit Area
- A description of significant changes in any of the BMPs including those in the SWP implementing the six minimum control measures
- Updated ordinances or resolutions associated with the SMP or the six minimum control measures shall be provided with the annual reports.
- A list of other parties, if any, who will be responsible for implementing any of the program areas of the Stormwater Management Program.
- This SMP will be evaluated annually and modifications to the Plan, if any, will be submitted with the annual report.
- Minor modifications to BMPs listed in this plan, if needed to meet program objectives, will be made within 60 days of a determination by the permittee or date of written notification from KDHE.
- Major modifications to BMPs listed in this plan, if needed to meet program objectives, will be proposed in a written plan to KDHE within 60 days of a determination by the permittee or date of written notification from KDHE.

7.0 APPENDIX A – Sampling Point Location Maps



Legend

Stormwater Sample Points - Required

- Baldwin Creek @ E. 1150 Rd.
- Wakarusa River - Downstream
- Wakarusa River - Upstream
- Yankee Tank Creek @ E. 1200 Rd.

Stormwater Sample Points - Optional

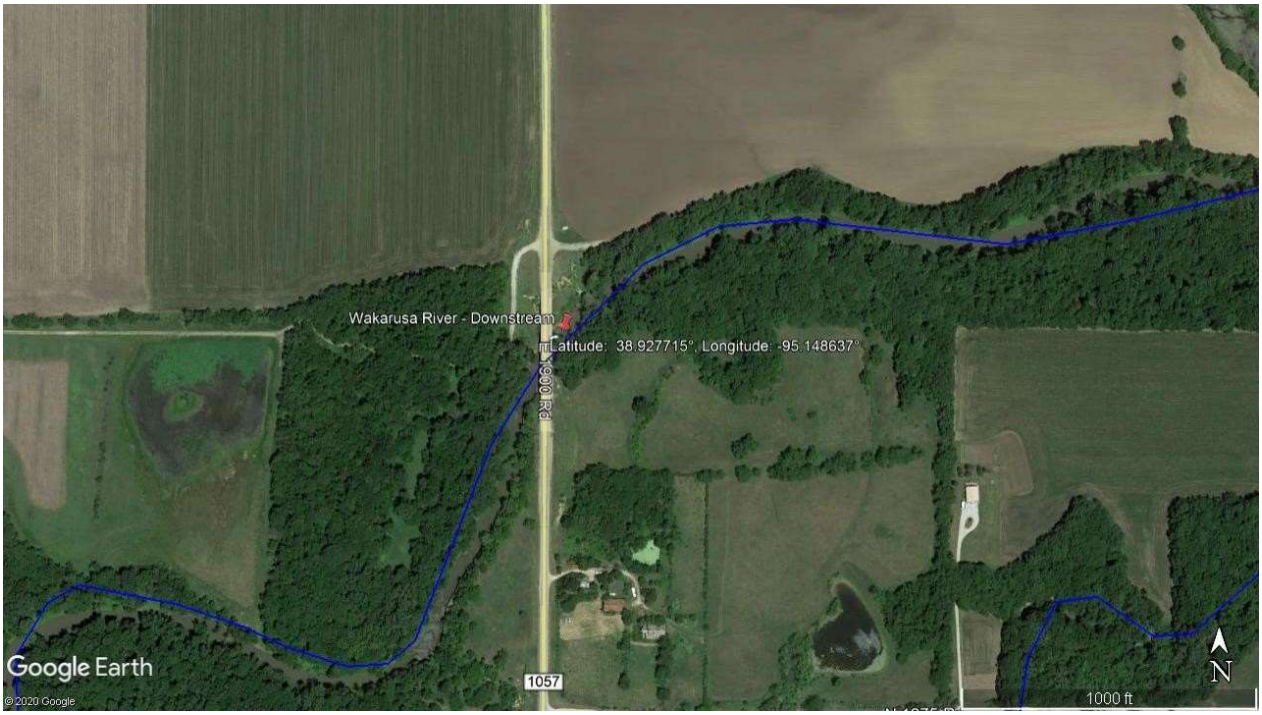
- Inverness Tributary @ 27th & Crossgate
- Yankee Tank Creek @ Lake Estates Dr.

City of Lawrence
MUNICIPAL SERVICES & OPERATIONS

Stormwater Sampling Points 2020

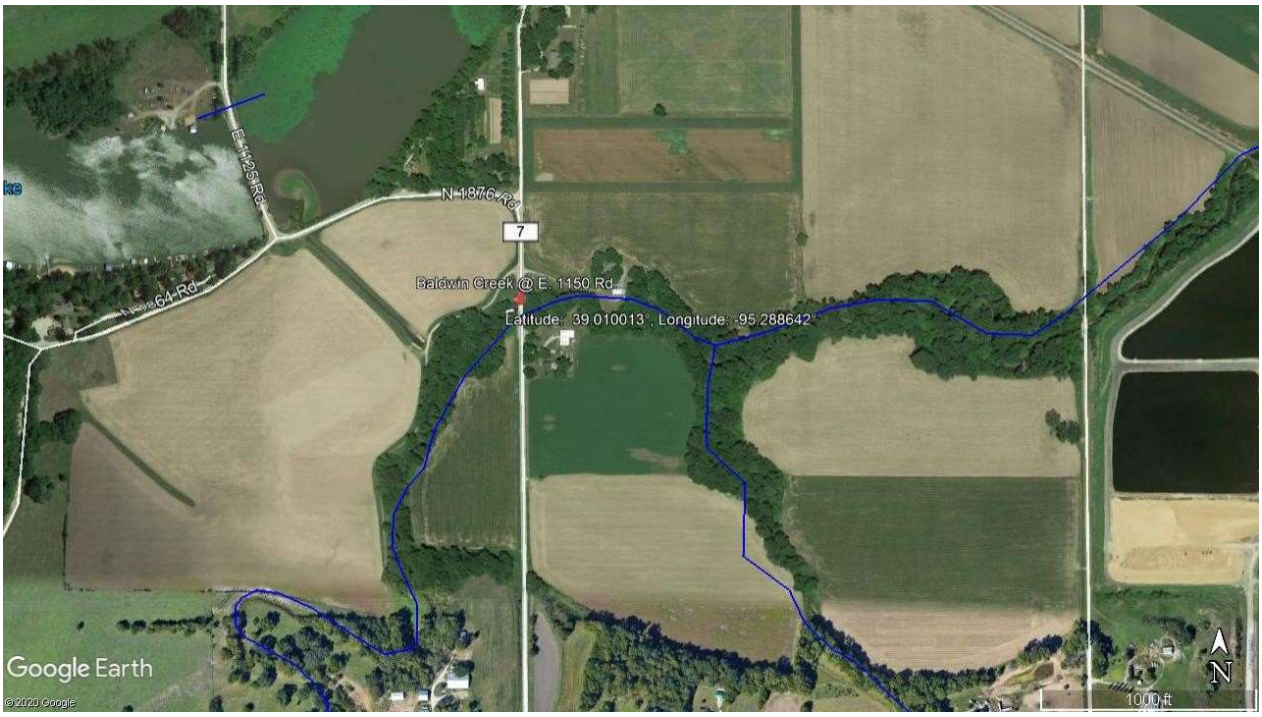
Sampling Point Location Data

Local Site Name	Wakarusa River – Upstream
Local Site Identifier	WKR Up
Sample Location Description	Wakarusa River upstream at the outfall of Clinton Lake Reservoir. Sample collection from the north side access area of the outlet with a sampling cup and telescoping rod.
KDHE eDMR Code (if known)	WAKAUP006A6
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	38.931568
Longitude	-95.329182
Years Monitoring will be conducted	All years in current permit cycle: 2020-2024



Sampling Point Location Data

Local Site Name	Wakarusa River – Downstream
Local Site Identifier	WKR Down
Sample Location Description	Wakarusa River downstream at E. 1900 Rd. Sample collection from east side (downstream side) of bridge where a rope and bucket are lowered to the middle of the river.
KDHE eDMR Code (if known)	WAKADN006B6
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	38.927715
Longitude	-95.148637
Years Monitoring will be conducted	All years in current permit cycle: 2020-2024



Sampling Point Location Data

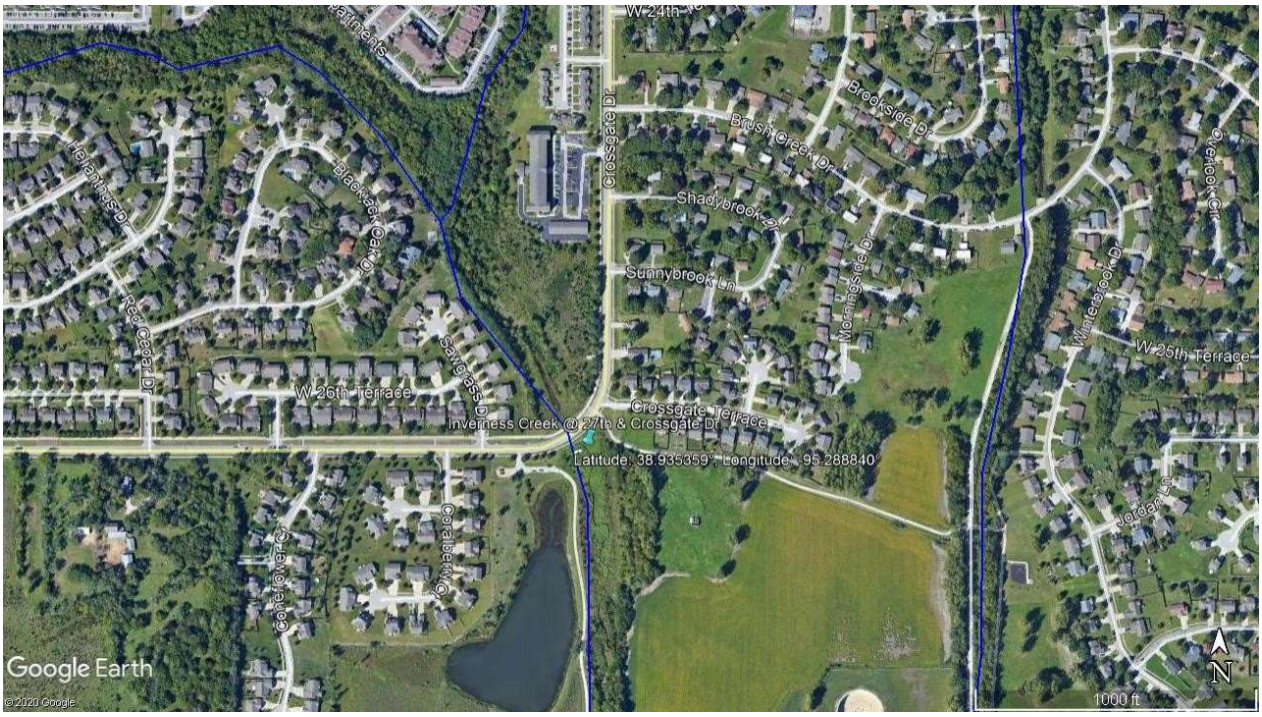
Local Site Name	Baldwin Creek
Local Site Identifier	BLD
Sample Location Description	Baldwin Creek at E. 1150 Rd. Sample collection from the east side of the bridge using a rope and bucket.
KDHE eDMR Code (if known)	BLD007B6
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	39.010013
Longitude	-95.288642
Years Monitoring will be conducted	All years in current permit cycle: 2020-2024

Sampling Point Location Data

Local Site Name	Yankee Tank Creek
Local Site Identifier	YKE
Sample Location Description	Yankee Tank Creek at E. 1200 Rd. Sample collection from east side of bridge where a rope and bucket are lowered to the middle of the stream.
KDHE eDMR Code (if known)	YKE008B6
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	38.924441
Longitude	-95.279076
Years Monitoring will be conducted	All years in current permit cycle: 2020-2024

Sampling Point Location Data

Local Site Name	Yankee Tank Creek – Optional
Local Site Identifier	YKEopt
Sample Location Description	Yankee Tank Creek at N. 1500 Rd. Sample collected from south side of road using a rope and bucket.
KDHE eDMR Code (if known)	
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	38.956799
Longitude	-95.332140
Years Monitoring will be conducted	Optional, all years in current permit cycle as staff time and resources allow.



Sampling Point Location Data

Local Site Name	Inverness Creek – Optional
Local Site Identifier	INVopt
Sample Location Description	Inverness Creek at 27th and Crossgate Dr. Sample collected from the south side of the road using a rope and bucket.
KDHE eDMR Code (if known)	
Latitude/Longitude Data – Decimal & Degree Format	
Latitude	38.935359
Longitude	-95.288840
Years Monitoring will be conducted	Optional, all years in permit cycle as staff time and resources allow.

Annexation Map
1505 N 1708 Road, outlined in blue

Prepared by: mmiller | December 21, 2023 | 1 inch = 193 feet

DISCLAIMER
The map is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. The City of Lawrence makes no warranties, express or implied, as to the use of the map. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the map, including the fact that the map is dynamic and is in a constant state of maintenance, correction and update.

NOTICE