1.1 INTRODUCTION

This document is a Stormwater Management Plan (SMP, or the “Plan”) created to help reduce the discharge of pollutants in stormwater runoff within regulated areas of Shawnee, Kansas. It outlines stormwater program activities, monitoring requirements, reporting requirements, and responsible parties for implementing this work.

This plan was prepared in compliance with Kansas Permit Number: M-KS68-SU01

   Effective Date: February 1, 2014
   Expiration Date: January 31, 2019

Section 1.2 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.

1.2 OVERVIEW OF STORMWATER PERMIT REQUIREMENTS FOR MS4s

The Federal Water Pollution Control Act (also referred to as the Clean Water Act) requires permits of both municipal and industrial stormwater dischargers, developed under a program called the National Pollutant Discharge Elimination System (NPDES). Permits for stormwater discharges from municipal urbanized areas are regulated under the MS4 permitting program. The term MS4 is short for Municipal Separate Storm Sewer Systems. (These are urbanized areas that have stormwater drainage systems that are separate from sanitary sewer systems.)

The Kansas Department of Health and Environment (KDHE) has developed two general MS4 permits for small municipalities with separate storm sewer systems. One was written for entities receiving an MS4 permit for the first time and another written for entities receiving a re-issued permit.

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 added 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 generally serve populations less than 100,000 in urbanized areas, plus those 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 practical, to protect water quality, and to satisfy water quality requirements of the Clean Water Act and Kansas law.

   The SMP must include six minimum stormwater control measures that are required of all plans. It is also required to address implementation of Best Management Practices (BMPs) for reducing pollutants in stormwater discharges from the municipality. Special 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.

   The SMP document must address the BMPs to be implemented by the permittee, provide measurable goals for the BMPs, designate the parties responsible for implementing the control
measures, provide appropriate maps and conduct stormwater/receiving stream sampling and testing based upon the TMDL impairments.

“Impaired Waters” are streams or lakes that do not attain or maintain minimum water quality standards. They may result from individual or multiple pollutants. As noted above, TMDL is an acronym for **Total Maximum Daily Load**, which is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Impaired streams and lakes are also commonly referred to as TMDL water bodies.

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 especially on those pollutants.
2.1 Responsibility for Stormwater Management Plan

Overall responsibility for coordination of activities outlined in this Plan, and for reporting will be by Michael J. Gregory, P.E., CFM, Stormwater Manager for the City of Shawnee.
This section describes the six minimum water quality protection control measures that are required by all MS4 permits. They include the following:

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

For each of these control measures the following is provided in this section:

- A summary description of the control measure
- The benefits of the control measure
- A table listing Best Management Practices (BMPs), Measurable goals for the BMPs, and Responsible parties
3.1 CONTROL MEASURE 1 - PUBLIC EDUCATION AND OUTREACH

**Description**

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

**Benefit**

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

**BMPs, Goals, and Staff**

<table>
<thead>
<tr>
<th>BMP</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
</table>
| 1.1 Develop and distribute stormwater related education and outreach materials | 1. This item may include articles or advertising in local newspapers, TV commercials, print/electronic newsletters, flyers, brochures, envelope stuffers, etc…
2. The City of Shawnee regularly distributes information through the, distribution of brochures and focused mailings. The City of Shawnee maintain and update the City website (www.cityofshawnee.org) with educational information pieces or links to Stormwater pollution prevention topics
3. Participate in local and regional outreach events, such as: Healthy Yards Expo, Neighborwood, and other City information meetings | Estimated number of impressions/readership based on coverage/distribution.
Number of types of media and distributions made.
List of Events and attendees and/or distributions of material | Johnson County Stormwater Management Program (JCSMP) (Water Quality Specialist) *
Mid-America Regional Council (MARC)
K-State Extension Office
City of Shawnee |
| 1.2 Support for Water Quality Initiatives for Schools and Community | Efforts may include partnering with schools and local non-profit organization working in Johnson County to implement stormwater education/curricula in schools and the community. | Description of implementation efforts completed, grants awarded; summary of work completed through grant funding. | JCSMP *
City of Shawnee |
| 1.3 Stormwater Webpage | Maintain and update website with periodic pieces or links to stormwater topics. Provide mechanism on website for citizen comments on stormwater management program, report illicit discharges, forward comments to appropriate agencies. | Website on-line; documentation of visitors and activity.
Mechanism to provide comments on-line; log of comments; log of agency responses and actions; City of Shawnee links to site. | JCSMP *
City of Shawnee |
| 1.4 Annual Program Review | Assess Program and revise as required | As needed, note revisions in annual report and update SMP | City of Shawnee |

* The city of Shawnee is a member of the Johnson County Stormwater Management Council (SMAC) and as such partners with the Johnson County Stormwater Management Program (JCSMP) on various aspects of the six minimum controls measures. Many of the city’s education and outreach efforts are accomplished through this partnership.
SECTION THREE

Six Minimum Control Measures

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, and participate in the development and implementation of BMPs to reduce the contamination of stormwater.

Benefit
The goal of the stormwater management plan is to improve water quality in local lakes and rivers, which provides benefits to the entire community. As such, the community deserves to have an opportunity to voice opinions on the content of the plan. Further, input into decisions builds support for and ownership in outcomes.

BMPs, Goals, and Staff

<table>
<thead>
<tr>
<th>Control Measure</th>
<th>Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Promote Community Involvement</td>
<td>“Don’t Pollute” inlet markers to be installed by volunteers. Offer/Encourage the BMP Cost/Share Grant Program to the Public to encourage construction of private rain gardens, rain barrels, and other water quality BMPs. Rain Barrel Building Classes offered by City of Shawnee Parks and Recreation Department.</td>
<td>Numbers of public participating in these and other events. Number of participants of the program Number of participants taking classes</td>
<td>JCSMP (Water Quality Specialist) * City of Shawnee (Voluntary)</td>
</tr>
<tr>
<td>2.2 Mechanism for Citizen Participation</td>
<td>Provide mechanism on website for citizens' comments on stormwater management program, reporting illicit discharges, forward comments to appropriate agencies. Provide service projects for volunteers, such as: placing inlet markers, stream clean ups, information distribution, etc.</td>
<td>Mechanism to provide comments on-line; log of comments and track responses and actions. Questionnaire administered; results. Number of inputs/requests to City of Shawnee website. Number of volunteers and outcomes</td>
<td>JCSMP (Water Quality Specialist) * Mid America Regional Council (MARC) City of Shawnee</td>
</tr>
<tr>
<td>2.3 Comply with Public Notice Provisions</td>
<td>The Stormwater Management Plan will be provided on the City of Shawnee’s website</td>
<td>The City of Shawnee’s website will be updated with the latest SMP and the annual report.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>2.4 Annual Program Review</td>
<td>Assess Program and revise as required</td>
<td>As needed, note revisions in annual report and update SMP</td>
<td>City of Shawnee</td>
</tr>
</tbody>
</table>

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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 wastewater discharges or other non-stormwater discharges into the storm sewer system. KDHE requires this program to include, at a minimum:

- Developing a storm sewer system map of the permitted MS4 showing the location of all outfalls, either pipes or open channel drainage, and showing the names and locations of all streams or lakes that receive discharges from those outfalls.
- Enacting and enforcing an ordinance or resolutions to prohibit non-stormwater discharges into the storm sewer system.
- Informing public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- Developing and implementing a plan to detect and address prohibited non-stormwater discharges.

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

BMPs, Goals, and Staff

<table>
<thead>
<tr>
<th>Illicit Discharge Detection and Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMP</td>
</tr>
<tr>
<td>3.1 Plan to Detect and Eliminate Illicit/Non-Stormwater Discharges to the MS4</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3.2 Storm Sewer System Map</td>
</tr>
<tr>
<td>3.3 Illicit Discharge Ordinance or Regulatory Mechanism</td>
</tr>
</tbody>
</table>
### Six Minimum Control Measures

#### Illicit Discharge Detection and Elimination

<table>
<thead>
<tr>
<th>BMP</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4 General Educational Outreach</td>
<td>Educate public employees, businesses, and the general public about the hazards of improper waste disposal.</td>
<td>Tracked distribution of number of flyers and other educational materials at various city events and in-house training opportunities.</td>
<td>JCSMP (Water Quality Specialist)*</td>
</tr>
<tr>
<td>3.5 Household Hazardous Waste (HHW) Program</td>
<td>Provide Johnson County residents the opportunity to properly dispose of HHW</td>
<td>Number of participants and summary of materials received</td>
<td>JCSMP</td>
</tr>
<tr>
<td>3.6 On-Site Sewer System Inspection at Resale</td>
<td>** Perform inspection and permit of on-site residential septic systems at construction and resale of property. Inspections may also be conducted as a result of complaints and repair requests.</td>
<td>Summary of inspections performed and required compliance actions taken at resale, permits issued</td>
<td>JCSMP</td>
</tr>
<tr>
<td>3.7 Annual Restaurant Inspection for Proper Waste Grease Management</td>
<td>*** Inspect restaurants for proper grease trap interceptor installation and compliance with pump schedule</td>
<td>Summary of inspections of restaurants with grease interceptors and their compliance with pump schedule</td>
<td>JCSMP</td>
</tr>
<tr>
<td>3.8 Annual Program Review</td>
<td>Assess Program and revise as required</td>
<td>As needed, note revisions in annual report and update SMP</td>
<td>City of Shawnee</td>
</tr>
</tbody>
</table>

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** Only applies to Cities that have adopted 2004 Johnson County Environmental Sanitary Code

*** Only applies to those food service facilities within the Johnson County Wastewater Department’s Service Area

### Program Assessment

The overall success of the Illicit Discharge Detection and Elimination Program will be measured through the successful implementation and enforcement of the City of Shawnee’s and Johnson County’s Stormwater Pollution Ordinance. Success will also be measured by the number of resident requests addressed, number of inspections conducted, number of problems discovered and/or resolved. Program assessment will be reported with each annual NPDES permit report discussing the activities completed in this section for the previous program year.
3.4 CONTROL MEASURE 4 - CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Description

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

- Where permittees have the authority to do so, ordinances or resolutions shall be enacted to require erosion and sediment controls, as well as sanctions to ensure compliance.
- Requirements for construction site owners or operators to implement erosion and sediment control BMPs.
- 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 which incorporate consideration of potential water quality impacts.
- Procedures for receipt and consideration of information submitted by the public.
- Procedures for site inspection and enforcement of control measures.
- Develop Standard Operating Procedures (SOPs) for the City of Shawnee’s Erosion and Sediment Control Procedures.

Benefit

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

BMPs, Goals, and Staff

<table>
<thead>
<tr>
<th>Construction Site Stormwater Runoff Control</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.1 Sediment and Erosion Control Ordinance/Regulatory Mechanism</strong></td>
<td>Enforce ordinance or other regulatory mechanism to require erosion and sediment controls, with sanctions to ensure compliance for new development and redevelopment projects of one acre or greater, and where a SWPPP is required.</td>
<td>Ordinance 2867 adopted. Number of CSR’s generated from Erosion Control issues.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td><strong>4.2 Sediment and Erosion Control Design Criteria</strong></td>
<td>Utilize sediment and erosion design criteria, such as APWA 5100 uniform engineering standards, specifications, and performance based design criteria for land-disturbance activities, or some equivalent measure.</td>
<td>Design criteria adopted. Update design criteria if needed.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td><strong>4.3 Good Housekeeping at Construction Sites</strong></td>
<td>Utilize requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality.</td>
<td>Good housekeeping requirements at construction sites adopted.</td>
<td>City of Shawnee</td>
</tr>
</tbody>
</table>
### Construction Site Stormwater Runoff Control

<table>
<thead>
<tr>
<th>BMP</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4</td>
<td><strong>Site Plan Review</strong>&lt;br&gt;Procedures</td>
<td>Utilize procedures for site plan review which consider water quality impacts.</td>
<td>Procedures adopted. Procedures updated as needed.</td>
</tr>
<tr>
<td>4.5</td>
<td><strong>Site Inspection and Enforcement</strong></td>
<td>Utilize model procedures for construction site inspection and enforcement of control measures. Utilize procedures for construction site inspection and enforcement of control measures. Track construction site inspections, violations, and enforcement measures.</td>
<td>Model procedures developed. Procedures adopted. Procedures updated as needed. Number of inspections, violations, and enforcement measures reported. 3rd party Qualified Erosion Control Specialist (QECS) inspectors providing reports on land improvement permitted SWPPP construction after rainfall events as required.</td>
</tr>
<tr>
<td>4.6</td>
<td><strong>Receipt of Public Information on Construction Site Compliance</strong></td>
<td>Utilize procedures for receipt and consideration for information submitted by the public. Track information received from public.</td>
<td>Procedures adopted. Summary of information received and actions taken using the Citizen Service Request process.</td>
</tr>
<tr>
<td>4.7</td>
<td><strong>Annual Program Review</strong></td>
<td>Assess Program and revise as required</td>
<td>As needed, note revisions in annual report and update SMP</td>
</tr>
</tbody>
</table>

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### Program Assessment

The overall success of the Construction Site Stormwater Runoff Control Program will be measured through the successful implementation and enforcement of the City of Shawnee’s Land Improvement Permit (Erosion and Sediment Control) Ordinance. Success will also be measured by the number of plans reviewed, number of inspections conducted, number of NOVs issued, and number and amount of penalties issued. Program assessment will be reported with each annual NPDES permit report discussing the activities completed in this section for the previous program year.
3.5 CONTROL MEASURE 5 - POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Description

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

- For permittees 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.
- BMPs to prevent or minimize adverse water quality impacts.
- Strategies which include a combination of structural and/or non-structural BMPs appropriate for the municipality.
- Means to ensure adequate long-term operation and maintenance of BMPs.

Benefit

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

BMPs, Goals, and Staff

<table>
<thead>
<tr>
<th>Post-Construction Stormwater Management in New Development and Redevelopment</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Stormwater Runoff Control Ordinance/Regulatory Mechanism</td>
<td>Utilize an ordinance or other regulatory mechanism requiring control of stormwater runoff from new development and redevelopment projections that disturb greater than one acre, and requirements of long-term maintenance of structural controls.</td>
<td>Ordinance 2862 adopted.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>5.2 Site Plan Review</td>
<td>Enact standard operating procedures for site plan review and inspection and monitoring of stormwater facilities for compliance with regulatory mechanism. Utilize a tracking system through GIS.</td>
<td>SOP’s; tracking system adopted.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>5.3 Best Management Practices for Stormwater Runoff Control</td>
<td>Participate in the reviews and updates of the Best Management Practice manual for stormwater management that provides information on the appropriate use and design of structural and non-structural BMPs for local conditions towards minimizing adverse water quality impacts. Enforce the APWA BMP Manual or equivalent document for stormwater management that provides information on the appropriate use and design of structural and non-structural BMPs for local conditions.</td>
<td>Participation on the committee that reviews manuals and makes recommendations. BMP Manual Adopted.</td>
<td>JCSMP * City of Shawnee</td>
</tr>
</tbody>
</table>
### Post-Construction Stormwater Management in New Development and Redevelopment

<table>
<thead>
<tr>
<th>BMP</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4 Design Standards for Stormwater Drainage</td>
<td>Participate in the review and update of the APWA 5600 local design criteria and specifications for stormwater drainage that incorporates stormwater management requirements. Utilize APWA 5600 design criteria or equivalent that incorporates stormwater management requirements. Provide opportunities for research to evaluate best management practices for local conditions.</td>
<td>Participation on committee that reviews manual and makes recommendations. APWA or equivalent adopted. Research opportunities provided, funded projects; results reported.</td>
<td>JCSMP * City of Shawnee</td>
</tr>
<tr>
<td>5.5 Inspection for Long Term Maintenance</td>
<td>Implement an inspection and enforcement program for BMPs installed to manage stormwater runoff that addresses maintenance requirements.</td>
<td>Summary of inspections and actions taken.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>5.6 Effectiveness of Proprietary BMPs</td>
<td>Review and evaluate the effectiveness and practicality of proprietary BMPs and modify design standards as needed.</td>
<td>A list has been created and is reviewed annually for Development Services Department to ensure that we are not allowing inappropriate proprietary BMP units to be installed in the City.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>5.7 Annual Program Review</td>
<td>Assess Program and revise as required</td>
<td>As needed, note revisions in annual report and update SMP</td>
<td>City of Shawnee</td>
</tr>
</tbody>
</table>

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### Program Assessment

The overall success of the Post-Construction Stormwater Management Program will be measured through the successful implementation and enforcement of the City of Shawnee’s Stormwater Treatment Ordinance and Standards. Success will also be measured by the number of plans reviewed and providing updates to the ordinances and procedures. Program assessment will be reported with each annual NPDES permit report discussing the activities completed in this section for the previous program year.
3.6 CONTROL MEASURE 6 - POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Description

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

Benefit

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

BMPs, Goals, and Staff

<table>
<thead>
<tr>
<th>Pollution Prevention/Good Housekeeping for Municipal Operations</th>
<th>BMP Description</th>
<th>Measurable Goal</th>
<th>Lead Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Implement practices to reduce pollution from the O&amp;M of city roads, parks, storm sewer system, and other City facilities.</td>
<td>Work to design SOP's to address pollutant reduction within the City of Shawnee. Examples include snow and ice removal, lawn care, vehicle maintenance and storage, toxic materials handling and transfer, and vehicle fueling stations.</td>
<td>SOP's identify ways to reduce identified pollutants from City O&amp;M activities.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>6.2 Conduct staff training.</td>
<td>Design educational sessions to ensure staff is proficient in minimizing stormwater pollution from daily operations.</td>
<td>Organize training sessions for staff involved with O&amp;M operations, including Public Works and Parks, and Recreation Services and other City staff. Training records kept.</td>
<td>JCSMP *</td>
</tr>
<tr>
<td>6.3 Facility SWPPP</td>
<td>Update to SWPPPs for City-Owned facilities.</td>
<td>Periodic audits performed on City facilities as required.</td>
<td>City of Shawnee</td>
</tr>
<tr>
<td>6.4 Annual Program Review</td>
<td>Assess Program and revise as required</td>
<td>As needed, note revisions in annual report and update SMP</td>
<td>City of Shawnee</td>
</tr>
</tbody>
</table>

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Program Assessment

The overall success of the Municipal Pollution Prevention/Good Housekeeping Program will be measured through the successful implementation of facility SWPPPs, employee training and facility inspections conducted as part of the program. In addition, success will also be measured by the number of inspections conducted, the number of problems discovered and resolved, and the number of lane miles swept. Program assessment will be reported with each annual NPDES permit report discussing the activities completed in this section for the previous program year.
TMDL Pollutants

TMDL regulated pollutants and impaired streams identified in the city’s 2014 permit are listed below:

<table>
<thead>
<tr>
<th>Impaired Stream</th>
<th>TMDL Regulated Pollutant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bacteria</td>
</tr>
<tr>
<td>Little Mill Creek</td>
<td>✓</td>
</tr>
<tr>
<td>Clear Creek</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Nutrients</td>
</tr>
<tr>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Sediment</td>
</tr>
<tr>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Best Management Practices (BMPs)

All six of the minimum control measures are designed to reduce pollutants in stormwater runoff. Those BMPs especially targeting bacteria, nutrients, and sediment, identified as regulated TMDL pollutants in Little Mill Creek and Clear Creek, include the following:

Bacteria

- Public Education and Outreach: Taking part in the regional education and outreach efforts such as the Pet Waste Pickup Campaign, supported through funding of the Mid-America Regional Council (MARC).
- Illicit Discharge Detection and Elimination Program – Systematic outfall inspections and Johnson County Health and Environment Resale on-site sewer system inspection program.
- Post-Construction Runoff Controls: Requiring the implementation of post-construction BMPs
- Good Housekeeping: Task-specific Standard Operating Procedures (SOPs) will be created and implemented to ensure bacteria pollution prevention activities are quality controlled and consistent when addressed through the 6 Minimal Measures.
- Good Housekeeping: The City of Shawnee believes that street sweeping is an essential part of the efforts to reduce bacteria. A street sweeping manual is being written.

Nutrients

- Public Education and Outreach: The City of Shawnee will participate in programs conducted by Johnson County Stormwater Management Program including the Water Quality Education Grant Program; Homeowner BMP Cost Share Program; K-State Extension Water Quality Partnership, and the Johnson County Healthy Yards Expo, as funding continues. The City of Shawnee’s Public Education and Outreach Program also includes Neighborhood Watershed Newsletters, website content, and distribution of information and brochures at city events.
- Post-Construction Runoff Controls requiring the implementation of post-construction BMPs
The City of Shawnee Standard Operating Procedures will be created or reviewed to provide the identification and elimination of nutrients pollution through all 6 minimal measures as applicable.

Good Housekeeping: The City of Shawnee will provide street sweeping, believing that street sweeping is an essential part of the efforts to reduce nutrients. A street sweeping manual is being written to provide quality control and consistency.

Sediment

- Erosion & Sediment Control at Construction Sites: Permitting and inspection program will be reviewed and quality checked.

- An Standard Operating Procedure (SOP) will be created and implemented to ensure that sediment pollution is quality controlled and consistent when addressed through Construction Site Stormwater Runoff minimal measure.

- Good Housekeeping: The City of Shawnee believes that street sweeping is an essential part of the efforts to reduce sediment. A street sweeping manual is being written.

- Post-Construction Runoff Control procedures requiring the implementation of post-construction BMPs will be reviewed and quality checked.

Pollutant Reduction Goals

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

An in-stream monitoring program targeting impaired streams and TMDL pollutants throughout Johnson County is being undertaken by the Johnson County Stormwater Management Program in conjunction with the USGS Cooperative Water Program. This program is being conducted on behalf of the cities in the county in compliance with the City of Shawnee Kansas Water Pollution Control Permit. Annual results of the monitoring program will be provided to the cities as well as the KDHE.

The monitoring program will include:

1. A network of 25 sites where discrete samples will be collected with passive samplers. Sample locations are located where streams generally enter and leave jurisdictional boundaries in impaired watersheds.

2. Targeted analytics include nutrients, suspended sediment, and *Escherichia coli* bacteria.

3. Four samples will be collected at each site annually (environmental conditions permitting, with a minimum of two samples collected in calendar year 2014).

4. Samples will be collected from storm events of at least 0.5 inches in 24-hours and samples will be collected during the rising limb of the storm events.

5. USGS is also including additional sampling techniques and added parameters at selected locations to help assess the effectiveness of the overall monitoring program which may include some dry weather monitoring.

6. Data will be compiled and reviewed on a routine basis and an annual summary of results provided.

A map of TMDL monitoring locations is included as Attachment 2.
Permit Compliance Schedule

Part IV of the 2014 permit includes the following compliance schedule requirements:

- **Year 2014**: Complete inventory and maps of outfalls, streams, and lakes in targeted areas; drainage basins for structural and non-structural BMPs; Select and initiate or continue effective plans for source control programs targeted to TMDL pollutants.

- **July 1, 2014**: Implement new source control programs and the initial stormwater monitoring program. (The plan for the monitoring program was developed prior to July 1, 2014. With concurrence of KDHE, sampling will begin in Fall 2014.)

- **February 28, 2015**: Submit a copy of this updated SMP to KDHE.

- **Year 2015**: Continue source control programs and monitoring program.

- **Year 2016**: Continue source control programs and monitoring program.

- **July 1, 2016**: Select, design, and initiate installation of appropriate structural/nonstructural BMP(s).

- **Year 2017**: Continue source control programs and monitoring program.

- **EOY 2017**: Appropriate structural/nonstructural BMP(s) should be completed and installed.

- **Year 2018**: Continue source control programs and monitoring program.

- **February 28, 2019**: Provide a final report on the effectiveness of source controls and structural BMPs to achieve the measurable goals and summarize water quality data from selected sites.

Annual Reporting

A calendar year annual report will be submitted to KDHE by February 28 of each year. The report will cover activities conducted during the prior calendar year and will include the following:

- Summary of compliance activities associated with the permit

- A review of the appropriateness of BMPs and progress towards achieving water quality goals

- Results of information collected and analyzed, if any, including monitoring data

- Summary and status of stormwater activities conducted during the previous year

- Summary of stormwater activities scheduled to take place during next reporting cycle

- Map showing changes in jurisdictional permit area, if appropriate

- Description of significant changes in any BMPs, including the six minimum control measures

- Copies of updated ordinances or resolutions associated with this SMP or the six minimum control measures

- Updated list of other parties which will be responsible for implementing program areas of this SMP, as required
Modifications

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 determination by the permittee or 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 determination by the permittee or written notification from KDHE.