

# CITY OF RAYMORE, MISSOURI



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**NPDES PHASE II -**

**STORMWATER MANAGEMENT PLAN**



**Stormwater Management Plan- NPDES Phase II  
City of Raymore, Missouri**

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## **MCM#1 Public Education and Outreach**

## MCM #1 Public Education and Outreach

### **Permit requirement. 4.2.1.1**

**“The permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and steps the public can take to reduce pollutants in storm water runoff. As part of the SWMP, the public education and outreach program shall include the following information, at a minimum:”**

### **Best Management Practice (BMP):**

Implement a Public Education Program emphasizing the impacts of stormwater discharges on water bodies.

### **BMP Objective:**

- Increase citizen knowledge and awareness of steps that can be taken to reduce stormwater pollution.
- Enhance public employees, businesses, and the general public’s knowledge of the 1) hazards associated with discharges to local storm sewers and 2) improper waste disposal implications.
- Develop a Public Education and Outreach program which provides a clear and consistent message regarding stormwater issues.
- Targeted strategies towards commercial, industrial, institutional entities likely to have significant stormwater impacts.

### **Measurable Goals:**

- Year 1-3. Install six (6) pet waste stations (either signage or the actual waste station) each year, starting in 2014 until all the current sign locations have been completed. This program will continue as additional trails are added and requests are received.
- Year 1-5. Install a minimum of four (4) Stream Buffer/Riparian Zone signs each year, starting in 2014 until all the current sign locations have been completed. This program will continue as requests are received.
- Year 1-5. Stencil/label a minimum of ten (10) inlet tops each year, starting in 2014 until all the unlabeled inlets have been marked. This will extend into the next permit cycle. This program will continue annually as previously stenciled inlet tops will need to be re-stenciled as needed.
- Year 1-5. Advertise household hazardous waste and prescription drug drop off events.
- Year 1-5. Update City’s web page as necessary.

## MCM #1 Public Education and Outreach

### ***Permit requirement. 4.2.1.1.2***

**“Identification of target audiences for the permittee's education program who are likely to have significant storm water impacts (including commercial, industrial and institutional entities); “**

### **Best Management Practice (BMP):**

Identify target audiences

### **BMP Objective:**

To identify target audiences that are more likely to cause significant stormwater impacts as to maximize the City's Public Education resources.

### **Measurable Goals:**

The City has identified the main targeted audience most likely to cause significant stormwater impacts as Residential Construction Contractors and in 2015 will begin mandatory erosion control and BMP training.

**Responsible Department(s):** Planning Department, Engineering Department

**Compliance Schedule:** Year 2-5

**Recurrence:** Continuous

**Report(s):** Training sign-in sheets

**Evaluation Methodology:** Compare the number of enforcement actions and correction notices in each program year and track the number of violations per permit. Make recommendations for corrective actions or strategies for improvement.

**Responsible Department(s):** Planning Department, Engineering Department, Community Outreach Coordinator

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Copy of the materials prepared or procured including a list of the distribution sites.

**Evaluation Methodology:** Review number and type of materials distributed to evaluate utility and effectiveness of the various distribution methods. Review existing public education materials available to target stormwater management, water quality, and stormwater pollution prevention messages to The City's public and private entities. Investigate future development of additional, targeted education materials specific to the City's program. Review resident's responses to the bi-annual City survey and make adjustments according to which media is best delivering our water quality message.

**Responsible Department(s):**, Engineering Department, Community Outreach Coordinator, IT Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Sign in sheets at events.

**Evaluation Methodology:** Track volunteerism to determine if more individuals are taking part. Obtain feedback from participants regarding how they learned of the opportunity. Evaluate two year annual Citizen Survey.



## MCM #1 Public Education and Outreach

### ***Permit requirement. 4.2.1.1.4***

**“A plan to inform individuals and groups on how to become involved in the SWMP (with activities such as local stream and lake restoration activities);”**

### **Best Management Practice (BMP):**

Enhance the City of Raymore’s existing website to improve communication and educational materials provided to the public on the SWMP, surface water quality issues and how to reduce pollutants to the storm sewer system.

Deliver televised programs/announcements on stormwater management, surface water quality and how to reduce pollutants to the storm sewer system on the City’s cable access channel.

### **BMP Objective:**

To reach as broad and diverse an audience as possible, by using the The City of Raymore’s current cable television access channel and website to enhance the general public's awareness.

### **Measurable Goals:**

- Within the first year after the effective date of the Stormwater Management Plan, the City shall update their existing website to provide a "Stormwater Runoff Management" to include a copy the approved SWMP and links to educational materials and forms and documents pertaining to stormwater management.
- Each year after submitting the City’s Annual Stormwater Report a copy will be made available on the City’s website within 30 days.
- Within the first two years after the effective date of the Stormwater Management Plan, The City will incorporate slides or public service announcements distributed by Marc on the City’s cable access channel and website.
- Within the third year, if the City decides to produce the public service announcement (PSA) referenced above, in-house, the City shall contact community partners to assist in preparing the public service announcements to be aired on the City’s cable access channel. These partners may include the local high schools or community groups.

**Responsible Department(s):** Engineering Department, Community Outreach Coordinator, IT Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Sign in sheets at events.

**Evaluation Methodology:** Track volunteerism to determine if more individuals are taking part.  
Obtain feedback from participants regarding how they learned of the opportunity.  
Evaluate two year annual Citizen Survey.

## MCM #1 Public Education and Outreach

### **Permit requirement. 4.2.1.1.5**

**“The permittee's outreach strategy, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) to reach target audiences, and how many people expected to be reached over the permit term; “**

### **Best Management Practice (BMP):**

Outline the City's outreach strategy.

### **BMP Objective:**

To identify outreach strategies and set a goal for the number of people expected to be reached.

### **Measurable Goals:**

- Restock MARC brochures at City Hall and Public Works Operations/Parks and Recreation Building
- Issue press releases and articles highlighting stormwater issues.
- Update the web page as necessary
- Include stormwater outreach and attitude questions in the City's Citizen Survey.
- Host an informational booth at the City's Festival in the Park.

**Responsible Department(s):** Planning Department, Engineering Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Survey results

**Evaluation Methodology:** Conduct an annual assessment of responses to the Citizen survey, questionnaires collected from informational booth, number of website hits and number of brochures dispensed to determine the most effective media for Outreach efforts.





## **MCM#2 Public Participation and Involvement**



## MCM #2 Public Involvement/Participation

### **Permit requirement. 4.2.2.1**

**“The permittee shall implement a public involvement/participation program that complies with State and local public notice requirements, and involve the public in the development and oversight of the SWMP ,policies and procedures. As part of the SWMP document, the public involvement/participation program shall include the following information, at a minimum: “**

### **Best Management Practice (BMP):**

To develop a Public Involvement and Participation program which provides for opportunities for the public to become involved in local stormwater issues.

### **BMP Objective:**

To inform and involve the public in the development of the SWMP and other Stormwater Quality Issues.

### **Measurable Goals:**

- Within the first year after the effective date of the Stormwater Management Plan, the City shall update their existing website to provide a "Stormwater Runoff Management" to include a copy the approved SWMP and links to educational materials and forms and documents pertaining to stormwater management.
- Each year after submitting the City’s Annual Stormwater Report a copy will be made available on the City’s website within 30 days.

**Responsible Department(s):** Planning Department, Engineering Department, Community Outreach

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** N/A

**Evaluation Methodology:** Record visits to the website and requests for more information.

## MCM #2 Public Involvement/Participation

### ***Permit requirement. 4.2.2.1.1***

**“How the permittee has involved the public in the development and submittal of the application and SWMP document; “**

### **Best Management Practice (BMP):**

To develop a Public Involvement and Participation program which provides for opportunities for the public to become involved in local stormwater issues.

### **BMP Objective:**

To encourage public involvement and input into the development of the SWMP

### **Measurable Goals:**

- The City shall schedule a public information meeting prior to acceptance of the SWMP. Announcements of the date and time shall be posted on the City's website and public access channel and sent out as an e-mail blast a week prior to the meeting.
- The City shall conduct an informal public meeting outlining the SWMP and encourage feedback and questions.
- The City shall post a copy of the SWMP on it's website for 30 days prior to acceptance of the SWMP.

**Responsible Department(s):** Planning Department, Engineering Department, City Council, Community Outreach

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Copies of those in attendance and comments

**Evaluation Methodology:** Conduct an annual assessment of Education and Outreach to determine if goals have been met and are reaching the targeted audience. Make recommendations for corrective actions or strategies for improvement.



## MCM #2 Public Involvement/Participation

### *Permit requirement. 4.2.2.1.2*

“The target audiences for the permittee's public involvement program, including a description of the types of ethnic and economic groups engaged. The permittee is encouraged to actively involve all potentially affected stakeholder groups, including commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and educational organizations, among others; and “

### **Best Management Practice (BMP):**

To develop a Public Involvement and Participation program which provides for opportunities for the public to become involved in local stormwater issues.

### **BMP Objective:**

To identify target audiences to better assess programs to actively involve the maximum number of stakeholder groups

### **Measurable Goals:**

- The City shall compile a list of homeowners associations, environmental groups and educational organizations.
- The city shall compile a list of commercial and industrial businesses from current business licenses issued by the City of Raymore.
- The City shall utilize the latest information from the 2014 Citizen Survey to identify groups to best target resources for public involvement.

**Responsible Department(s):** Planning Department, Engineering Department, Community Outreach

**Compliance Schedule:** Year 1-2

**Recurrence:** Every 5 years

**Report(s):** Copies of information gathered

**Evaluation Methodology:** N/A

## MCM #2 Public Involvement/Participation

### ***Permit requirement. 4.2.2.1.3***

**“The types of public involvement activities included in the permittee's program. “**

### **Best Management Practice (BMP):**

To develop a Public Involvement and Participation program which provides for opportunities for the public to become involved in local stormwater issues.

### **BMP Objective:**

Participate, through promotion, sponsorship, or other public involvement, in local activities intended to increase public participation to reduce pollutants into the storm sewer system.

### **Measurable Goals:**

- Provide civic and community groups with materials, assistance and opportunity to participate in the marking of storm drainage inlets with “Drains to Stream”
- To promote and assist in the implementation of a community cleanup event on an annual basis to coincide with Earth Day activities.
- Continue Hazardous Household Waste (HHW) events.

**Responsible Department(s):** Engineering Department, Community Outreach

**Compliance Schedule:** Continuous

**Recurrence:** Yearly

**Report(s):** Sign in/participation sheets

**Evaluation Methodology:** Conduct an annual assessment to determine if goals have been met and are reaching the targeted audience. Make recommendations for corrective actions or strategies for improvement.





## **MCM#3 Illicit Discharge Detection and Elimination**

Revised 4/8/2014

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1**

***“The permittee shall develop, implement and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200) into the permittee's regulated small MS4. As part of the SWMP document, the permittee's illicit discharge detection and elimination program shall include the development and implementation of; at a minimum;”***

**Best Management Practice (BMP):**

N/A

**BMP Objective:**

N/A

**Measurable Goals:**

- N/A
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**Responsible Department(s):** Public Works Director

**Compliance Schedule:**

**Recurrence:** Continuous

**Report(s):** Annual report to be submitted in accordance with permit requirements.

**Evaluation Methodology:** N/A

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.1**

***“A storm sewer map showing the location of all outfalls and the names and location of all receiving waters of the state that receive discharges from those outfalls. The permittee shall describe the sources of information used for the map(s), and how the permittee plans to verify the outfall locations with field surveys. If already completed, the permittee shall describe how the map was developed and how the map will be regularly updated. The permittee shall make the map information available to the department upon request;”***

**Best Management Practice (BMP):**

Maintain a current City of Raymore storm sewer mapping system.

**BMP Objective:**

To continually update and maintain a current storm sewer mapping system and inventory of stormwater outfalls.

**Measurable Goals:**

- The City developed the required map. This map is GIS-based and integrates additional GIS data such as aerial photography and contour data.
- The City of Raymore will update the GIS maps with Record Drawings detailing modifications to the MS4 system as necessary.

**Responsible Department(s):** GIS Coordinator, Engineering

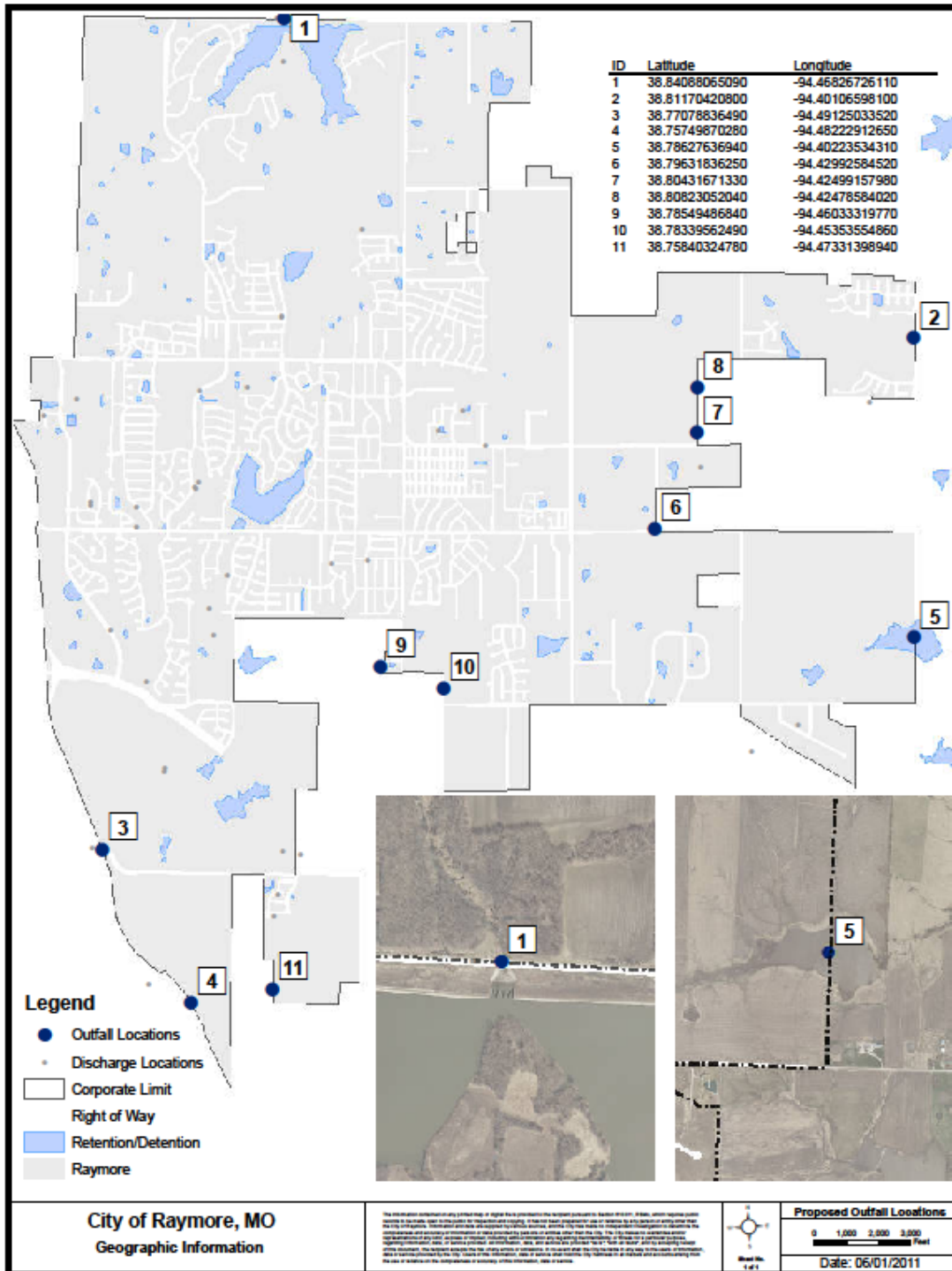
**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** Printout of GIS Outfall map.

**Evaluation Methodology:** N/A

## Outfall Map – City of Raymore



**City of Raymore – MO**  
**Permit Number: MO-R040029**  
**2013 – 2017 Outfall Location Number and Receiving Stream**

**Outfall Number:** 1  
Legal Description: NE1/4, NW1/4, Sec. 4, T46N, R32W  
Lat. – Long: 38 50' 27" – 94 28' 06" (385027.2 – 942808.3)  
Receiving Stream: Unnamed Tributary to Lumpkin Creek (U)  
Classified Stream – ID#: Lumpkins Creek (C) – 425  
USGS# & Sub Watershed#: 10300101 – 30001

**Outfall Number:** 2  
Legal Description: S/E1/4, S/E1/4, Sec. 12, T46N, R32W  
Lat. – Long: 38 48'42" – 94 24' 02" (384841.7 – 942404.0)  
Receiving Stream: Unnamed Tributary to Lake Winnebago (U)  
Classified Stream – ID#: Lake Winnebago (L3) 303(D) - 7212  
USGS# & Sub Watershed#: 10290108 - 60002

**Outfall Number:** 3  
Legal Description: SW1/4, S/W1/4, Sec. 29, T46N, R32W  
Lat. – Long: 38 46' 15" – 94 29' 29" (384615.3 – 942932.2)  
Receiving Stream: Unnamed Tributary to East Creek (U)  
Classified Stream – ID#: Tributary to East Creek (C) - 1266  
USGS# & Sub Watershed#: 10290108 - 20002

**Outfall Number:** 4  
Legal Description: NW1/4, S/E1/4, Sec. 32, T46N, R32W  
Lat. – Long: 38 45' 25" – 94 28' 54" (384533.2 – 942912.2)  
Receiving Stream: Unnamed Trib. to Tributary to East Creek (U)  
Classified Stream – ID#: Tributary to East Creek(C) - 1266  
USGS# & Sub Watershed#: 10290108 - 20002

**Outfall Number:** 5 (flow out of Simms Lake)  
Legal Description: NE1/4, SW1/4, Sec. 19, T46N, R31W  
Lat. – Long: 38 47' 09" – 94 24' 17" (387862.7 – 944022.3)  
Receiving Stream: Unnamed Tributary to Harrisonville Lake (C)  
Classified Stream – ID#: Harrisonville Lake (L1) - 7214  
USGS# & Sub Watershed#: 10290108 - 60001



**Outfall Number:** 6  
Legal Description: NW1/4, NE1/4, Sec. 23, T46N, R32W  
Lat. – Long: 38 47' 46" – 94 25' 43" (387963.2 – 944299.2)  
Receiving Stream: Unnamed Tributary to Lake Winnebago (U)  
Classified Stream – ID#: Lake Winnebago (L3) 303(D) - 7212  
USGS# & Sub Watershed#: 10290108 - 60002

**Outfall Number:** 7  
Legal Description: SW1/4, NE1/4, Sec. 14, T46N, R32W  
Lat. – Long: 38 48' 15" – 94 25' 29" (388043.2 – 944249.9)  
Receiving Stream: Unnamed Tributary to Lake Winnebago (U)  
Classified Stream – ID#: Lake Winnebago (L3) 303(D) - 7212  
USGS# & Sub Watershed#: 10290108 - 60002

**Outfall Number:** 8  
Legal Description: NW1/4, SE1/4, Sec. 14, T46N, R32W  
Lat. – Long: 38 48' 29" – 94 25' 28" (388082.3 – 944247.9)  
Receiving Stream: Unnamed Tributary to Lake Winnebago (U)  
Classified Stream – ID#: Lake Winnebago (L3) 303(D) - 7212  
USGS# & Sub Watershed#: 10290108 - 60002

**Outfall Number:** 9  
Legal Description: SE1/4, SE1/4, Sec. 21, T46N, R32W  
Lat. – Long: 38 47' 10" – 94 27' 34" (387854.9 – 944603.3)  
Receiving Stream: Unnamed Tributary to East Creek (U)  
Classified Stream – ID#: Tributary to East Creek (C) - 1266  
USGS# & Sub Watershed#: 10290108 - 20002

**Outfall Number:** 10  
Legal Description: SW1/4, SW1/4, Sec. 22, T46N, R32W  
Lat. – Long: 38 47' 01" – 94 27' 12" (387833.9 – 944535.3)  
Receiving Stream: Unnamed Tributary to East Creek (U)  
Classified Stream – ID#: Tributary to East Creek (C) - 1266  
USGS# & Sub Watershed#: 10290108 – 20002

**Outfall Number:** 11  
Legal Description: NW1/4, SE1/4, Sec. 33, T46N, R32W  
Lat. – Long: 38 45' 30" – 94 28' 22" (387584.0 – 944733.1)  
Receiving Stream: Unnamed Trib. to Tributary to East Creek (U)  
Classified Stream – ID#: Tributary to East Creek(C) - 1266  
USGS# & Sub Watershed#: 10290108 – 20002

Lat/Long are shown in decimal degrees for projected coordinate system  
NAD 83 Missouri State Plan FIPS 2403 Feet

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.2**

*“To the extent allowable under State, or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions. The permittee shall identify the mechanism (ordinance or other regulatory mechanism) the permittee will use to effectively prohibit illicit discharges into the MS4. If the permittee needs to develop this mechanism, describe the permittee’s plan and implementation schedule. If the permittee's ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with the permittee's program; and”*

**Best Management Practice (BMP):**

To identify the regulatory mechanism (Ordinance) used to effectively prohibit illicit discharges into the MS4

**BMP Objective:**

Create and/or identify City of Raymore ordinance provisions to prohibit illicit discharges into the MS4.

**Measurable Goals:**

- The City has adopted the required Ordinance. City of Raymore Municipal Code Section 545.445.A.(12-16 ) Nuisances
- Public access to the Municipal Code is available on the City’s website

**Responsible Department(s):** Code Enforcement Officer, Engineering Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Evaluation Methodology:** N/A

**Report(s): City of Raymore's Municipal Code #545.445**

**SECTION 545.445: NUISANCES**

A.

12. No person shall discharge or cause to be discharged into a natural or manmade stormwater system any waste materials, liquids, vapor, fat, gasoline, benzene, naphtha, oil or petroleum product, mud, straw, lawn clippings, tree limbs or branches, metal or plastic objects, rags, garbage or any other substance which is capable of causing an obstruction to the flow of the storm system or interfere with the proper operation of the system or which will pollute the natural creeks or waterways.
13. The dumping or the depositing on or the scattering over the premises of any of the following:
  - a. Garbage or rubbish.
  - b. Abandoned, discarded or unused objects or equipment such as automobiles, furniture, stoves, refrigerators, freezers, cans, containers or similar objects.
  - c. Building material and/or construction equipment abandoned or stored on property where construction is not in progress, where a valid building permit does not exist or on property not properly zoned for such storage.
  - d. Brush or tree limbs.
14. The standing of vehicles which are laden with any foul or nauseous thing, liquid or substance or any refuse, filth, offal or other trash or rubbish anywhere in the City for a period of time longer than reasonably necessary for loading and unloading.
15. Any open, uncovered or unprotected well or cistern on any premises.
16. Any water accumulating and remaining, continuing or stagnating upon, in or about any lot, tract or piece of ground, with the exception of natural streams and waterways, or any barrels, buckets, kegs, tubs, cans or vessels of any kind whatsoever caused or permitted to be thrown, to be placed or to remain upon any lot, property or grounds in the City that might, could or would catch, hold, contain or retain water in which mosquitoes or insects, bugs, worms or living

creatures might be bred, hatched, raised or allowed to remain or accumulate.

17. The dumping, disposal or placement of dirt, stone, rock, concrete, asphalt grindings or similar material unless a valid grading permit exists for the property.

*(Ord. No. 27114 § 1, 11-26-07; Ord. No. 2012-031, § 3, 4-9-12)*

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3**

***“A plan and implementation schedule to detect and address non-storm water discharges, including discharges from illegal dumping and spills, to the permittee's system. The permittee's plan shall include dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources. The plan shall also address on-site sewage disposal systems that flow into the permittee's storm drainage system. The permittee's description shall address the following, at a minimum:”***

**Best Management Practice (BMP):**

Adopt and implement a program to detect and address non-stormwater discharges

**BMP Objective:**

To develop an inspection program for illicit discharge detection and perform dry weather inspection of stormwater outfalls, as a means to reduce the discharge of pollutants to the MS4.

**Measurable Goals:**

- The City of Raymore has identified and mapped 11 outfall locations for screening and inspection.
- The City has developed a Standard Operating Procedure ( SOP IDDE-3.3) for inspecting outfalls.
- In years one through five, the City shall inspect all outfall on a semi-annual basis.
- Within the fifth year after the effective date of the Stormwater Management Plan, the City shall re-evaluate the overall focus and effectiveness of the dry weather outfall inspection program. The evaluation will be conducted every 5-year permit cycle, will involve setting inspection priorities based on the previous 5-year permit cycle results, and be submitted for review by the permitting authority.
- The City shall provide a list of the inspected outfalls, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.

**Responsible Department(s):** Engineering, GIS Coordinator

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):**

- Summary of activities undertaken to detect illicit discharges, the number of illicit discharges that were detected, and the number eliminated.
- Map of Outfall Locations
- SOP IDDE 3.3 – Outfall and Priority Area Inspection

**Evaluation Methodology:** Review of SOP techniques and protocols and their success in detecting illicit discharges throughout the City of Raymore service area.

## MCM #3 Illicit Discharge Detection and Elimination

### **Permit requirement. 4.2.3.1.3. 1**

***“Procedures for locating priority areas which include areas with higher likelihood of illicit connections (eg, areas with older sanitary sewer lines, for example) or ambient sampling to locate impacted reaches;”***

### **Best Management Practice (BMP):**

Locate priority areas with higher potential for illicit discharge.

### **BMP Objective:**

To map priority areas and adopt standard operating procedures for investigating and tracking potential areas of illicit discharge.

### **Measurable Goals:**

- The City of Raymore has identified and mapped 45 locations of a “higher likelihood” for potential illicit discharge.
- The City has adopted Standard Operating Procedures SOP IDDE-3.1 (Call in Inspections) and SOP IDEE- 3.2 (Opportunistic Discharge Observation) SOP IDDE-3.3 (Outfall and Priority Area Inspections) to investigate illicit discharge.
- In years one through five, the City will annually inspect 25% (12) of the priority locations.
- Within the fifth year after the effective date of the Stormwater Management Plan, the City shall re-evaluate the overall focus and effectiveness of the priority area inspection program. The evaluation will be conducted every 5-year permit cycle, will involve setting inspection priorities based on the previous 5-year permit cycle results, and be submitted for review by the permitting authority.
- The City shall provide a list of the inspected locations, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.

**Responsible Department(s):** Engineering, Operations and Maintenance and GIS Coordinator.

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

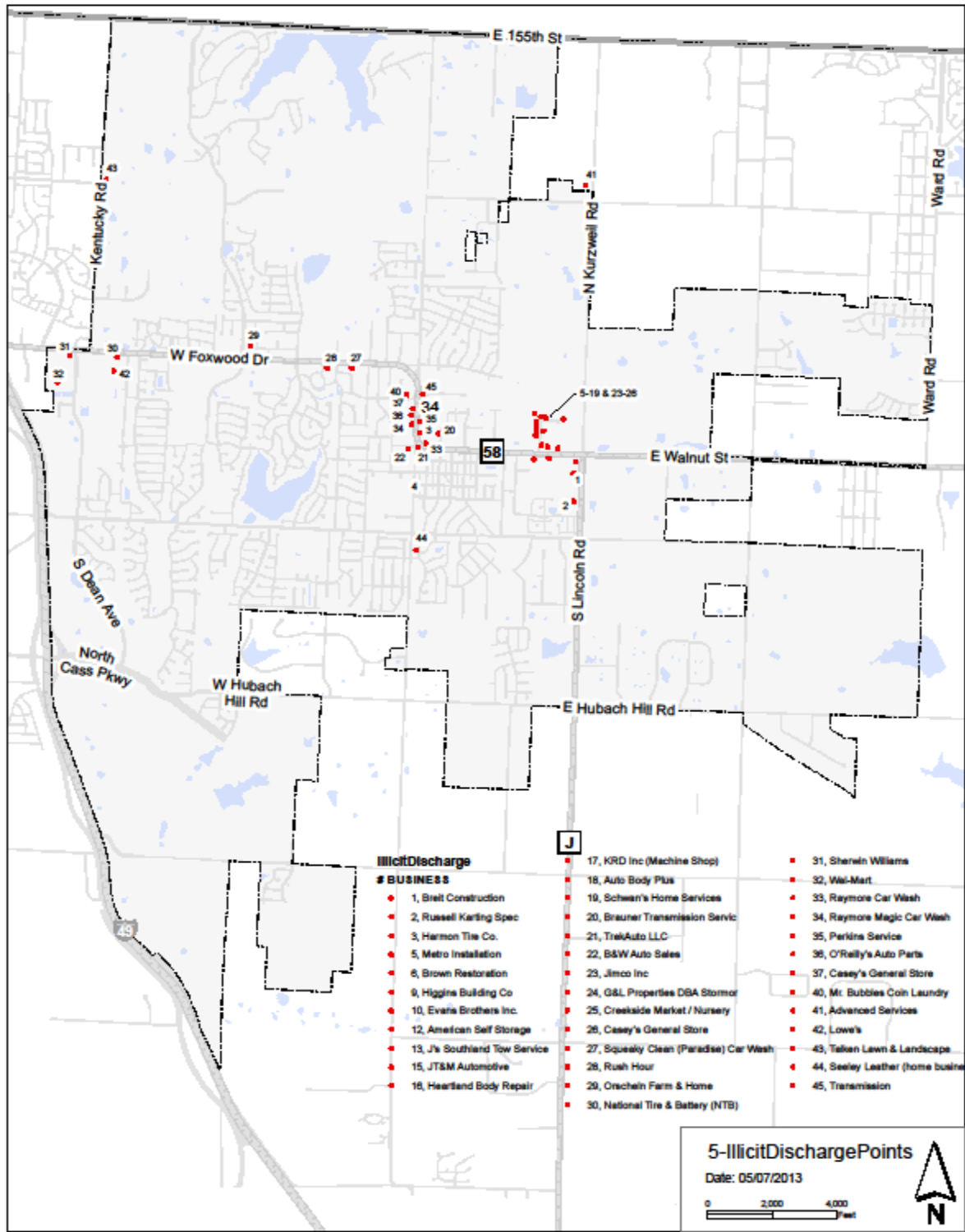
**Report(s):**

- Map of Priority Locations
- SOP IDDE 3.1 – Call-in Inspections
- SOP IDDE 3.2 – Opportunistic Discharge Observation
- SOP IDDE 3.3 - Outfall and Priority Area Inspections
- SOP IDDE 3.4 -Removing Illicit Discharge
- SOP IDDE 3.5 – Tracing Illicit Discharge
- Summary of activities undertaken to detect illicit discharges, the number of illicit discharges that were detected, and the number eliminated.

**Evaluation Methodology:** Review previous 5 year inspection priority sites and its success in detecting illicit discharges.



# Illicit Discharge – Possible Business Locations – City of Raymore



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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3.2**

***“Procedures for tracing the source of an illicit discharge, including the specific techniques the permittee will use to detect the location of the source,”***

**Best Management Practice (BMP):**

To trace the source of a potential illicit discharge

**BMP Objective:**

To develop a Standard Operating Procedure to trace the source of an illicit discharge.

**Measurable Goals:**

- The City has developed a Standard Operating Procedure SOP IDDE-3.5 (Tracing Illicit Discharges)
- Within the second year after the effective date of the Stormwater Management Plan, the City shall review and update, if appropriate, the SOP for tracing of illicit discharge eliminations.
- The City shall provide a list of the inspected locations, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.

**Responsible Department(s):** Engineering, Operations and Maintenance

**Compliance Schedule:** Year 1-5

**Recurrence:** One Time (SOP), Continuous (Implementation)

**Report(s):**

- SOP IDDE 3.5 – Tracing Illicit Discharge

- Summary of activities undertaken to detect illicit discharges, the number of illicit discharges that were detected, and the number eliminated.

**Evaluation Methodology:** Review of SOP techniques and protocols and their success in tracing illicit discharges .

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3.3**

***“Procedures for removing the source of the illicit discharge;”***

**Best Management Practice (BMP):**

To remove the source of a potential illicit discharge

**BMP Objective:**

To develop a Standard Operating Procedure to Remove the source of an illicit discharge.

**Measurable Goals:**

- The City has developed a Standard Operating Procedure SOP IDDE-3.4 (Removing Illicit Discharges)
- Within the second year after the effective date of the Stormwater Management Plan, the City shall review and update, if appropriate, the SOP for removing illicit discharge eliminations.
- The City shall provide a list of the inspected locations, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.

**Responsible Department(s):** Engineering, Operations and Maintenance

**Evaluation Methodology:** Review of SOP techniques and protocols and their success in removing illicit discharges .

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3.4**

***“A plan to ensure through appropriate enforcement procedures, including fines, and actions that the permittee’s illicit discharge ordinance (or other regulatory mechanism) is implemented;”***

**Best Management Practice (BMP):**

Provide legal authority to conduct inspections and enforcement activities for the reduction of illicit discharges by reviewing and updating the City’s existing ordinances.

**BMP Objective:**

To identify the regulatory mechanism (Ordinance) used to effectively enforce the penalties and actions against illicit discharges into the MS4

**Measurable Goals:**

- The City has adopted the required Ordinance. City of Raymore Municipal Code Section 545.330 Article 1 Administration
- Public access to the Municipal Code is available on the City’s website

**Responsible Department(s):** Code Enforcement Officer, Engineering Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** City of Raymore’s Municipal Code 545.330

**Evaluation Methodology:** N/A

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3.5**

***“A plan to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. The permittee shall describe how this plan will coordinate with their public education minimum measure and the pollution prevention/good housekeeping minimum measure programs; and”***

**Best Management Practice (BMP):**

Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

**BMP Objective:**

Adopt and Implement a plan to inform and educate public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

**Measurable Goals:**

- Year 1-5 .Provide annual training to City of Raymore employees whose duties and responsibilities will place them frequently in the field. The training will cover how to recognize an illicit discharge and the correct reporting and follow-up procedures.
- Year 1-5. Provide annual Good Housekeeping training to City of Raymore Operations and Parks Department employees.
- Year 1-5 .Publish, at a minimum, two (2) informative stormwater articles each year in the Raymore Review (a quarterly publication mailed to all Raymore residents)
- Year 1-5. Continue recycling program for Household Hazardous Waste and the Illegal Dumping Hotline.
- Year 1-5. Continue attaching Discharge Conditions to all commercial site plans and Conditional Use Permit Applications
- Year 1-5. Continue Pre-Construction contractor meetings outlining BMP installation, inspection and maintenance procedures.

- Year 1-5. Install six (6) pet waste stations (either signage or waste station) until all current sign locations have been completed. This program will continue as additional trails are added.
- Year 1-5. Stencil a minimum of ten (10) inlet tops each year until all unlabeled tops have been marked. Additionally, all new tops are required to have “Drains to Stream” logo stamped in the concrete.
- Year 2-5. Install five (5) Stream Buffer/ Riparian Zone signs each year until all current sign locations have been completed. The program will continue as requests are received.

**Responsible Department(s):** Engineering Department, Operations and Maintenance, Community Outreach Coordinator, Codes Enforcement ,Parks and Recreation Director

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Copy of training materials and a dated sign-in sheet containing the names of attendees

**Evaluation Methodology:** Analysis of data collected and feedback from field personnel to determine if improvements are necessary in the SOPs and training topics.

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.3.6**

***“Procedures for program evaluation and assessment of this minimum control measure.”***

**Best Management Practice (BMP):**

The City will re-evaluate the overall focus and effectiveness of the IDDE program. The evaluation will be conducted every 5-year permit cycle, will involve setting inspection priorities based on the previous 5-year permit cycle results, and be submitted for review by the permitting authority.

**BMP Objective:**

Maintain an effective IDEE Program

**Measurable Goals:**

- The City will review and update, if appropriate, the SOP’s and associated Ordinances for illicit discharge eliminations.
- The City will provide a list of the inspected locations, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.
- Within the fifth year after the effective date of the Stormwater Management Plan, the City shall re-evaluate the overall focus and effectiveness of the IDDE program. In determining the effectiveness of the program the City will look at locations where illicit discharges (if any) were detected and whether or not increased frequency of inspections is warranted.
- The evaluation will be conducted every 5-year permit cycle, will involve setting inspection priorities based on the previous 5-year permit cycle results, and be submitted for review by the permitting authority.

**Responsible Department(s):** Code Enforcement Officer, Engineering Department

**Compliance Schedule:** Ongoing

**Recurrence:** Continuous



**Report(s):** Modifications to the program will be outline in a revised SWMP and noted on annual reports as appropriate.

**Evaluation Methodology:** The City will re-evaluate the overall focus and effectiveness of the IDDE program. The evaluation will be conducted every 5-year permit cycle, will involve setting inspection priorities based on the previous 5-year permit cycle results, and be submitted for review by the permitting authority.

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.4**

***“Address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if the permittee identifies them as significant contributors of pollutants to the permittee’s regulated small MS4: landscape irrigation, rising ground waters, uncontaminated ground water, infiltration (as defined in 10 CSR 20-6.200), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and street wash water (discharges or flows from emergency fire fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are significant sources of pollutants to waters of the state).”***

**Best Management Practice (BMP):**

N/A

**BMP Objective:**

N/A

**Measurable Goals:**

The City of Raymore does not consider the following categories of non-storm water discharges or flows (i.e. illicit discharges) to be significant contributors of pollutants:

- water line flushing, and landscape irrigation/lawn watering
- diverted stream flows and rising ground waters,
- uncontaminated ground water infiltration and uncontaminated pumped ground water,
- discharges from potable water sources,
- foundation drains, air conditioning condensation, and water from crawl space pumps
- springs, flows from riparian habitats and wetlands, and
- street wash water (discharges or flows from fire fighting activities are excluded from the effective prohibition against non-storm water and will only be addressed where they are identified as significant sources of pollutants to waters of the State.)

**Responsible Department(s):** Code Enforcement Officer, Engineering Department

**Compliance Schedule:** Completed

**Recurrence:** N/A

**Report(s):** N/A

**Evaluation Methodology:** N/A

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.5**

*“The permittee may also develop a list of other similar occasional incidental non-storm water discharges (e.g. non- commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-storm water discharges shall not be reasonably expected (based on information available to the permittees) to be significant sources of pollutants to the MS4, because of either the nature of the discharges or conditions the permittee has established for allowing these discharges to the permittee's MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs on the wash water, etc.). The permittee shall document in their SWMP any local controls or conditions placed on the discharges. The permittee shall include a provision prohibiting any individual non-storm water discharge that is determined to be contributing significant amounts of pollutants to the permittee's MS4.”*

**Best Management Practice (BMP):**

N/A

**BMP Objective:**

N/A

**Measurable Goals:**

- In addition to the occasional incidental non-storm water discharges outlined above, the City of Raymore does not consider discharges from swimming pool maintenance to be a significant contributor of pollution.

**Responsible Department(s):** Code Enforcement Officer, Engineering Department

**Compliance Schedule:** Completed

**Recurrence:** N/A

**Report(s):** N/A

**Evaluation Methodology:** N/A

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| <b>MCM #3 Illicit Discharge Detection and Elimination</b> |
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**Permit requirement. 4.2.3.1.6**

***“The permittee should inventory, inspect and have enforcement authority for industries and commercial enterprises within their boundary that may contribute pollutants via stormwater to the MS4.”***

**Best Management Practice (BMP):**

Inventory, inspect and enforce Ordinance requirements for industries and commercial enterprises.

**BMP Objective:**

To prevent, detect and eliminate pollutants from entering the MS4.

**Measurable Goals:**

- The City of Raymore Conditional Use Permits includes the following requirement as part of the permit approval.

*The Public Works Department and/or Code Enforcement will make periodic site visits to check for illicit discharges. The property owner must immediately notify City staff of any illicit discharge that enters or has the potential to enter the storm sewer system. Failure to notify the City is grounds for revocation of the CUP.*

- The City shall provide a list of the inspected locations, the number of illicit discharges that were detected, the types of illicit discharges discovered and how discovered, any discharges that were eliminated, and resulting enforcement actions in its Annual NPDES Report.

**Responsible Department(s):** Code Enforcement Officer, Engineering Department, Planning and Zoning

**Compliance Schedule:** Ongoing

**Recurrence:** Continuous

**Report(s):** Site investigation report.

**Evaluation Methodology:** N/A



## **MCM#4 Construction Site Stormwater Runoff Control**

Revised 5/8/2014

## MCM # 4 Construction Site Storm Water Runoff Control

### ***Permit requirement 4.2.4.1***

The permittee shall develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre shall 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. As part of the SWMP, the permittee's construction site storm water runoff control program shall include the development and implementation of, at a minimum:

#### **4.2.4.1.1**

An ordinance or other regulatory mechanism:

##### **4.2.4.1.1.1**

To require operators to implement erosion and sediment control BMPs at construction sites;

##### **4.2.4.1.1.2**

To include sanctions to ensure compliance, to the extent allowable under State or local law; and

##### **4.2.4.1.1.3**

If the permittee needs to develop this mechanism, the permittee shall describe the plan and scheduled implementation. If the permittee's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections with the permittee's SWMP.

##### **4.2.4.1.2**

Requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste;

#### **4.2.4.1.6**

A plan to ensure compliance with the permittee's erosion and sediment control regulatory mechanism, including the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain sanctions will be used. Possible sanctions include non-monetary penalties (such a stop work orders), fines, bonding requirements, and/or permit denials for non-compliance; and

#### **Best Management Practice (BMP):**

The City of Raymore requires construction site operators to implement the appropriate erosion and sediment control Best Management Practices (BMPs). All plans are reviewed by engineering staff to help ensure erosion control measures are identified and ultimately installed.

#### **BMP Objective:**

To control wastes that may cause adverse impacts to water quality such as, but not limited to:

1. Discarded Building Materials
2. Concrete Truck Washout
3. Sediment
4. Litter or Trash
5. Sanitary Waste

#### **Measurable Goals:**

- The City of Raymore has adopted an ordinance that requires erosion and sediment controls, as well as sanctions to ensure compliance. This is located in our Unified Development Code - Chapter 455. Natural Resource Protection. The city also requires a developer to provide an upfront financial security for land disturbance to cover all costs the city may have to correct deficient conditions.

**Responsible Department(s):** Community Development, Engineering

**Compliance Schedule:** Completed

**Recurrence:** Continuous



**Report(s):** Reports of activities associated with this MCM will be submitted to the DNR as part of the annual review process.

**Evaluation Methodology:** Review Chapter 455 of the Unified Development Code on a regular basis and recommend amendments to the Governing Body as appropriate. The City will also capture metrics related to the success of their construction site runoff control program. These metrics will be reported in their annual reports. These metrics include the number of construction plans reviewed, the number of inspections conducted and the number of enforcement actions taken.

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| <b>MCM # 4 Construction Site Storm Water Runoff Control</b> |
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***Permit requirement 4.2.4.1.3***

Procedures for the permittee to consider and review all pre-construction site plans for potential water quality impacts.

**Best Management Practice (BMP):**

Review all development applications for compliance with Chapter 455 of the Unified Development Code.

**BMP Objective:**

To assure all proposed construction reduces the potential for water quality impacts to the maximum extent practicable.

**Measurable Goals:**

- Review 100% of the plot plans received to verify erosion control measures are included.
- Review 100% of the site plans received to verify erosion control measures are included.
- Maintain a list of all enforcement action taken for failure to comply with the adopted erosion control ordinance.
- Conduct one presentation per year, starting in 2014, to inform the licensed home builders in the City of Raymore of the proper installation and maintenance procedures for erosion control measures.
- Have all City engineering technicians receive training on a yearly basis on erosion control inspection.
- The City has developed the following SOPs, Inspection Forms and Plan review checklists:

- ✓ Erosion Control Checklist for Commercial Structures
- ✓ Erosion Control Checklist for Single Family Homes
- ✓ Erosion and Sediment Control Standard Operating Procedures- Commercial Structures (Site Plan Review *and* Site Inspection)
- ✓ Erosion and Sediment Control Standard Operating Procedures- Single Family Homes (Plot Plan Review *and* Site Inspection)
- ✓ PRE to POST Construction Erosion Control Inspection of Large Scale Developments(Residential and Commercial- 5 acres plus) -Standard Operating Procedures

**Responsible Department(s):** Community Development, Engineering, Building Inspections

**Compliance Schedule:** Complete

**Recurrence:** Continuous

**Report(s):** Activities Associated with this BMP will be submitted to the DNR as part of the annual report.

**Evaluation Methodology:** Annual review of SOPs, Inspection Forms and Plan review checklists to ensure consistency in plan review, construction site inspection and enforcement activities. The City will also capture metrics related to the success of their construction site runoff control program. These metrics will be reported in their annual reports. These metrics include the number of construction plans submitted, the number of plans reviewed, the number of inspections conducted and the number of enforcement actions taken. The City will also record the number of attendees of all annual presentations to licensed home builders, and will track the attendance of the inspection training sessions provided to City engineering employees.

## MCM 4 Construction Site Storm Water Runoff Control

### ***Permit requirement 4.2.4.1.4***

Procedures for the permittee to receive and consider information submitted by the public, including coordination with the permittee's public education program;

### **Best Management Practice (BMP):**

To provide a mechanism by which the City can receive and consider inquiries, concerns, and information submitted regarding local construction activities.

### **BMP Objective:**

To reinforce the public participation component of the City's stormwater program.

### **Measurable Goals:**

Residents can express concerns about local construction activities by contacting the City by phone or through the "Report a concern" button on the homepage of the City's website. Those inquiries that are received by phone are entered into the City's database as well as those that are submitted directly through the website portal. An initial response to all inquiries is provided within 24 hours excluding weekends. Follow up responses are provided as necessary.

**Responsible Department(s):** Public Works, Engineering, Code Enforcement. Building Inspections.

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** Activity related to this Minimum Control Measure will be included with the annual report submitted to the DNR.

**Evaluation Methodology:** The City will also capture metrics related to the success of their construction site runoff control program. These metrics will be reported in their annual reports. These metrics include the number of construction plans reviewed, the number of inspections conducted and the number of enforcement actions taken.

The City will also track and review the number of inquiries received compared to the level of construction activity. This data will be used to determine if additional compliance inspections are required for specific construction sites.

## MCM 4 Construction Site Stormwater Runoff Control

### ***Permit requirement 4.2.4.1.5***

Procedures for the permittee to inspect sites and enforce control measures, including prioritization of site inspections;

### **Best Management Practice (BMP):**

Inspect construction sites on a regular basis to ensure compliance with approved erosion control plans and Land Disturbance Permit

### **BMP Objective:**

To minimize impacts to water quality from construction sites to the maximum extent practicable.

### **Measurable Goals:**

The City of Raymore maintains procedures (SOPs) for site inspection and enforcement of control measures. The city requires that each private construction site comply with weekly and post-rain event inspections and provide the city with a copy of each inspection report. The city conducts periodic independent inspections to ensure compliance.

**Responsible Department(s):** Engineering, Building Inspections, Community Development, Codes Enforcement

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** Activities associated with this MCM will be included with the annual report submitted to the DNR.

**Evaluation Methodology:** Annual review of SOPs, Inspection Forms and Plan review checklists to ensure consistency in plan review, construction site inspection and enforcement activities. The City will also capture metrics related to the success of their construction site runoff control program. These metrics will be reported in their annual reports. These metrics include the number of construction plans reviewed, the number of inspections conducted and the number of enforcement actions taken.





## **MCM#5 Post-Construction Stormwater Management**

Revised 5/8/2014



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| <b>MCM #5 Post-Construction Stormwater Management</b> |
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***Permit requirement. 4.2.5.1***

As an operator of a Phase II MS4s, the City of Raymore shall develop, implement, and enforce procedures and best management practices to address the quality of long term storm water runoff from new development and redevelopment projects.

**Best Management Practice (BMP):**

1. Develop and implement strategies of structural and non-structural BMPs appropriate to the local community, and where appropriate, require the use of these BMPs and designs with the goal of maintaining or replicating pre-development runoff characteristics and site hydrology.
2. Develop requirements for adequate long-term operation and maintenance of structural stormwater management facilities, including inspection, tracking and enforcement methods.
3. Adopt an ordinance to require installation of structural BMP's and long-term operation and maintenance of post- construction controls.
4. Provide training to City personnel and educate site developers, owners and designers regarding the installation and maintenance of structural BMPs.

**BMP Objective:**

Adopt Best Management Practices to prevent or minimize water quality impacts by reasonably mimicking pre-construction runoff conditions on all affected new development projects and by effectively utilizing water quality strategies and technologies on all affected redevelopment projects, to the maximum extent practicable. .

**Measurable Goals: N/A**

**Responsible Department(s):** Planning Department, Engineering Department

**Compliance Schedule:** As set forth herein.

**Recurrence:** Continuous

Report(s): N/A

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| <b>MCM #5 Post-Construction Stormwater Management</b> |
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***Permit requirement. 4.2.5.1.1***

Develop and implement strategies of structural and non-structural BMPs appropriate to the local community, and where appropriate, encourages the use of these BMPs and designs with the goal of maintaining or replicating pre-development runoff characteristics and site hydrology.

**Best Management Practice (BMP):**

Adopt a set of local standards for post-construction stormwater management and make the standards available to developers, local contractors and the public that will reasonably mimic pre-construction runoff conditions in affected new development and incorporating water quality protection in affected redevelopment projects to the maximum extent practicable, and include a combination of appropriate community specific structural and/or non-structural BMPs.

**BMP Objective:**

To ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts by reasonably mimicking pre-construction runoff conditions on all affected new development projects and by effectively utilizing water quality strategies and technologies on all affected redevelopment projects, to the maximum extent practicable

**Measurable Goals:**

- City Staff will submit to the Governing Body for consideration a set of local standards for post-construction stormwater management BMPs. During the effective period for the SWMP, the City will maintain and enforce these local standards and will post on their website a copy of, or a link to, the adopted standards and best management practices outlined in the standards
- The City of Raymore will provide input during the planning stages of new development and will review plans for adherence to Post-Construction BMP's
- The City of Raymore has established flexible design criteria for planned developments that apply in new development and redevelopment.

**Responsible Department(s):** Planning Department, Engineering Department

**Compliance Schedule:** Year 1 (2014)

**Recurrence:** Continuous

**Report(s):** A summary of the local standards will be included with the annual report to the DNR upon adoption.

**Evaluation Methodology:** Review standards and BMP information annually and update as necessary as a result of compliance or non-compliance by developers, contractors, and the public.

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| <b>MCM #5 Post-Construction Stormwater Management</b> |
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**Permit requirement. 4.2.5.1.2**

An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, or local law.

**Best Management Practice (BMP): N/A**

**BMP Objective: N/A**

**Measurable Goals:**

- The City of Raymore has adopted the following Ordinances in it's Unified Development Code to address Post- Construction Stormwater Management;

**Section 450.010 Stormwater Detention Requirements**

**Section 455.010-455.050 Natural Resource Protection**

**Section 460.120 Stream Buffer Requirements**

**Section 460.130 Penalties for Violation**

In addition to the Ordinances outlined above, City Staff will develop an Ordinance specifically addressing water quality impacts associated with development and present it to the Governing Body for consideration during the first year (2014)of this permit cycle.

**Responsible Department(s):** Planning Department, Engineering Department, Code Enforcement

**Compliance Schedule:** Year 1-5

**Recurrence:** Ongoing

**Report(s):** A copy of the Ordinance will be included in the annual report submitted to the DNR upon adoption by the Governing Body.

**Evaluation Methodology:** The City will review its standards and BMP information annually and update as necessary as a result of compliance or non-compliance by developers, contractors, and the public. The City of Raymore will track metrics related to the success of their post-construction stormwater management program. These metrics will be reported in their annual reports. These metrics include the number of post-construction plans reviewed, the number of post-construction BMP inspections conducted and the number of enforcement actions taken.

***Permit requirement. 4.2.5.1.3***

A plan to ensure adequate long-term operation and maintenance of selected BMPs, including types of agreements between the permittee and other parties such as the post-development landowners or regional authorities;

**Best Management Practice (BMP):**

Develop Ordinance requirements that assign responsibility for the long term maintenance and inspection of structural BMPs and identifies the City's rights in the event the responsible party fails or is unable to perform any of the required obligations.

**BMP Objective:**

To ensure adequate long term operation and maintenance of BMPs.

**Measurable Goals:**

- After adoption of a Storm Water Quality Ordinance, the City will develop and implement a set of SOPs for detailed plan reviews and approvals, site inspections, and any necessary enforcement actions, to ensure the adequate long term operation and maintenance of structural BMPs.
- As appropriate , the City of Raymore shall review and update, the SOPs for plan reviews and inspections, and enforcement to incorporate changes to these procedures made during the first year of implementation of these programs.
- The City shall create an inventory of newly constructed publicly and privately owned BMPs. The BMP inventory list will be maintained and updated annually.
- The City shall enforce annual operation & maintenance requirements for privately owned BMPs within the MS4 service area, as required by the City's Unified Development Code. The enforcement activities will be established and identified in the standard operating procedures.

**Responsible Department(s):** Planning Department, Engineering Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Ongoing

**Report(s):** Copies of procedures and checklists. Summary report of inventory, inspections and enforcement actions.

**Evaluation Methodology:** Review standards and BMP information annually and update as necessary as a result of compliance or non-compliance by developers, contractors, and the public. The City will capture metrics related to the success of their post-construction stormwater management program. These metrics will be reported in their annual reports. These metrics include the number of post-construction plans reviewed, the number of post-construction BMP inspections conducted and the number of enforcement actions taken.

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| <b>MCM #5 Post-Construction Stormwater Management</b> |
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***Permit requirement 4.2.5.1.4***

Specific priority areas for this program

**Best Management Practice (BMP):**

Identify sensitive areas such as wetlands and riparian areas in new development that may need additional protection.

**BMP Objective:**

Minimize impacts of storm water discharged into priority areas.

**Measurable Goals:**

- New developments that propose to discharge stormwater directly into riparian corridors or wetlands will be required to evaluate if additional measures such as BMPs or stream stabilization is required to minimize impacts from development.

**Responsible Department(s):** Engineering, Community Development

**Compliance Schedule:** Ongoing

**Recurrence:** Continuous

**Report(s):** The City will report activities associated with this MCM in its annual report submitted to the DNR.

**Evaluation Methodology:** The City will capture metrics related to the success of their post-construction stormwater management program. These metrics will be reported in their annual reports. These metrics include the number of post-construction plans reviewed.



## **MCM # 5 Post –Construction Storm Water Management**

### **Permit requirement: 4.2.5.1.5.1**

Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation;

### **Best Management Practice (BMP):**

Develop Ordinances and policies to direct growth, protect natural resources and increase open space as appropriate for the City of Raymore.

### **BMP Objective:**

Minimize the impacts of urbanization on water quality and natural areas.

### **Measurable Goals:**

- Adopt a Growth Management Plan that incorporates provisions of the permit requirements described above as appropriate for the community.
- Adopt a Parks Master Plan
- Establish a dedicated funding source for open space acquisition.

**Responsible Department(s):** Community Development, and Parks

### **Compliance Schedule: Completed**

- A New Growth Management Plan was adopted by the City in 2013.
- A Parks Master Plan was adopted by the City in 2007
- The City of Raymore has established a dedicated funding source for open space acquisition.
- The City of Raymore has adopted Ordinance requirements for open space dedication.
- The City has adopted Ordinance requirements for the protection of riparian, other natural resource areas and minimize disturbance to soils and vegetation.

**Recurrence:** Continuous

**Report(s):** Any changes to the above referenced documents will be included in the annual report submitted to the DNR.

**Evaluation Methodology:**

- The Growth Management Plan is reviewed on an annual basis by the Planning and Zoning Commission.
- The City will annually track and report open space acquisitions.

## MCM # 5 Post-Construction Storm Water Management

### ***Permit requirement 4.2.5.1.5.2***

Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure, and redevelopment of Brownfield sites or grayfields which may include abandoned malls or similar properties;

**Best Management Practice (BMP): N/A**

**BMP Objective: N/A**

**Measurable Goals: N/A**

**Responsible Department(s): N/A**

**Compliance Schedule:**

Completed

Section 451.040.E of the Unified Development Code contains provisions for incentives for developing infill areas.

**Recurrence: N/A**

**Report(s): N/A**

**Evaluation Methodology: N/A**

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| <b>MCM #5 Post-Construction Stormwater Management</b> |
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**Permit requirement. 4.2.5.1.5.3**

Education programs for developers and the public about project designs that minimize water quality impacts; and

**Best Management Practice (BMP):**

Develop and make available, education materials to developer, designers and the public about designs and other measures that minimize water quality impacts.

**BMP Objective:**

To minimize water quality impacts associated with urbanization.

**Measurable Goals:**

- The City will incorporate standards and guidelines for flexible design criteria for Post- Construction BMP's in the City of Raymore, Missouri Development guide.
- The City will make available to the public information regarding the use of rain barrels and other alternative landscaping techniques such as the incorporation of native materials that can be used to minimize water quality impacts.

**Responsible Department(s):** Planning Department, Engineering Department,

**Compliance Schedule:** Years 1-5

**Recurrence:** NA

**Report(s):** NA

**Evaluation Methodology:** The City will review evaluations and comments regarding the quality of BMP guidelines in the development process, and will assess whether changes should be made for the benefit of clarification and compliance of future applicants. The City will maintain statistics regarding and annually review the educational materials it disseminates in addition to the MARC education programs. The City will also maintain and report statistics of the types of measures selected for any developments.

## MCM # 5 Post-Construction Storm Water Management

### **Permit requirement 4.2.5.1.5.4**

Other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, site designs that provide for integration of a variety of infiltration practices and source control measures often thought of as good housekeeping, preventive maintenance and spill prevention.

### **Best Management Practice (BMP):**

Adopt Ordinance provisions that require minimum amounts of open space to be preserved and requirements for BMPs to be installed and maintained on new developments.

### **BMP Objective:**

To minimize the amount of impervious areas directly connected to the storm water system.

### **Measurable Goals:**

- Review development plans to ensure compliance with City of Raymore Municipal Code Requirements for open spaces.
- Adoption of a Storm Water Quality Ordinance

**Responsible Department(s):** Community Development

**Compliance Schedule:** 2015

**Recurrence:** Continuous

**Report(s):** N/A

**Evaluation Methodology:** N/A

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| <b>MCM # 5 Post-Construction Storm Water Management</b> |
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***Permit requirement 4.2.5.1.6.1***

Practices that provide infiltration, evapotranspiration or re-use such as grassed swales, bioretention cells, cisterns and green roofs; and

**Best Management Practice (BMP):**

Adopt codes and ordinances that require infiltration, evapotranspiration or re-use such as grassed swales, bioretention cells, cisterns and green roofs.

**BMP Objective:**

To promote construction that is environmentally sustainable.

**Measurable Goals:**

Adoption of a City Code that incorporates these requirements.

**Responsible Department(s):** Community Development, Public Works

**Compliance Schedule:** Completed.

The City has adopted Section 451 of the Unified Development Code requiring long term post-construction water quality measures.

**Recurrence:** N/A

**Report(s):** Ordinance and code modifications will be submitted to the DNR with the annual report.

**Evaluation Methodology:** N/A

## MCM # 5 Post-Construction Storm Water Management

### ***Permit requirement 4.2.5.1.6.2***

Redevelopment practices such as planter boxes, street retrofits, parking-lot infiltration and green roofs

### **Best Management Practice (BMP):**

Adopt codes and ordinances that require the incorporation of practices such as planter boxes, street retrofits, parking-lot infiltration and green roofs.

### **BMP Objective:**

To promote construction that is environmentally sustainable.

### **Measurable Goals:**

Adoption of an Ordinance which incorporates these measures in re-development projects.

**Responsible Department(s):** Community Development, Building Inspections and Engineering.

**Compliance Schedule:** Completed

The City has adopted Section 451 of the Unified Development Code that requires long term post construction water quality measures be incorporated into re-development projects.

**Recurrence:** N/A

**Report(s):** Ordinance and code modifications will be submitted to the DNR with the annual report.

**Evaluation Methodology:** N/A



**MCM#6 Pollution Prevention/ Good Housekeeping**



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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1***

**“The permittee shall develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. As part of the SWMP, the pollution prevention/good housekeeping program shall include the following information, at a minimum: “**

**Best Management Practice (BMP):**

To implement an Operations and Maintenance training program.

**BMP Objective:**

To raise awareness of possible pollutants and best management practices for reducing and/or eliminating them.

**Measurable Goals:**

Annual training for all Public Employees and initial training for new employees.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Training attendance sign –in sheets  
Copies of handouts (if applicable)

**Evaluation Methodology:** Review comments and feedback from training sessions and annual awareness survey to determine if goals are being met. Adjust training plan if necessary.

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1.1***

**“A list of all municipal operations that are impacted by this operation and maintenance program. The permittee shall also include a list of industrial facilities the permittee owns or operates that are subject to NPDES permits for discharges of storm water associated with industrial activity that ultimately discharge to the permittee's MS4. The permittee shall include the permit number or a copy of the industrial application form for each facility;”**

**Best Management Practice (BMP):**

To create an inventory of all City of Raymore-owned/operated or City-operated buildings and facilities that have the potential to impact stormwater quality.

**BMP Objective:**

To reduce stormwater quality impacts from municipal facilities.

**Measurable Goals:**

- The City of Raymore Owns and Operates the facilities that have the potential to impact stormwater quality:

Public Works Operations and Maintenance Facility  
City of Raymore Animal Control Facility  
Raymore Parks Maintenance Facility  
Raymore City Hall

**Responsible Department(s):** Public Works, Engineering Department, Parks Department, Buildings and Grounds

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** N/A

**Evaluation Methodology:** This above list will be updated as necessary.

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1.2***

**“Maintenance BMPs, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to the permittee's regulated small MS4;”**

**Best Management Practice (BMP):**

Develop maintenance procedures to reduce floatables and other pollutants.

**BMP Objective:**

Reduce water quality impacts by reducing the amount of floatables and other pollutants discharging to the regulated small MS4.

**Measurable Goals:**

- Clean and inspect 25% (650) of storm sewer inlets annually.
- Sweep all paved streets and municipal parking lots a minimum of twice / year.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** Report activities associated with this MCM in the annual report to the DNR.

**Evaluation Methodology:** Maintain and review maintenance records of activities outlined above annually and adjust annual Public Works work plan as necessary to meet goal objectives.

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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**Permit requirement. 4.2.6.1.3**

**“Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the permittee operates;”**

**Best Management Practice (BMP):**

Develop practices and procedures to reduce or eliminate the discharge of pollutants from Municipal Locations

**BMP Objective:**

Reduce or eliminate the discharge of pollutants.

**Measurable Goals:**

The City of Raymore has developed practices and controls to address the permit requirement outlined above. Examples of these are attached in Appendix A of this plan.

The City has determined that the effectiveness and consistency of these controls would be enhanced by developing site specific Storm Water Pollution Prevention Plans and Operating Procedures as follows:

- *Public Works/Operations Facility – 2014/15*
- *Raymore Parks Maintenance Facility – 2014/15*
- *Raymore City Hall – 2015*

**Responsible Department(s):** Public Works, Engineering Department, Parks Department, Building and Grounds

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):** Site specific SWPPPs will be attached as Appendices to this Plan and submitted as a plan update with the annual report submitted to the DNR

**Evaluation Methodology:** The plans and procedures will be reviewed on a 5 year cycle and revised as necessary.

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1.4***

**“Controls described in Sections 4.1.5 through 4.1.8 of this permit;”**

**Best Management Practice (BMP):**

**N/A**

**BMP Objective:**

**N/A**

**Measurable Goals:**

The City of Raymore will incorporate these control measures in the SWPPP developed for Public Works and Parks Maintenance activities.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** N/A

**Evaluation Methodology:** N/A

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1.5***

**“Procedures for the proper disposal of waste removed from the permittee's MS4 and area of jurisdiction, including dredged material, accumulated sediments, floatables, and other debris;”**

**Best Management Practice (BMP):**

Develop procedures for proper waste disposal.

**BMP Objective:**

Reduce or eliminate pollutants discharging to the regulated small MS4.

**Measurable Goals:**

The City of Raymore has practices in place to meet this permit requirement. These will be formalized and included in the site specific SWPPPs developed for each location.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** N/A

**Evaluation Methodology:** Practices and procedures will be reviewed on a 4 year cycle and revised and updated as necessary.

***Permit requirement. 4.2.6.1.6***

**“Procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices;”**

**Best Management Practice (BMP):**

Develop procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices.

**BMP Objective:**

Reduce or eliminate pollutants discharged into the regulated MS4.

**Measurable Goals:**

- The City of Raymore Engineering Department will review all public infrastructure projects for opportunities to incorporate structural BMPs.  
  
The City has recently completed the design of a stream side trail reconstruction project that will incorporate rain gardens to address drainage issues. This project will be constructed fall 2014.  
  
The City has completed a preliminary design for a “Farmers Market” that will include options for installing pervious pavement, pervious pavers and filter strips along parking areas. This project is projected to be constructed spring 2015.
- Existing active construction sites are inspected on a regular basis and assessed for the need to install additional BMPs for erosion and sediment control.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Completed

**Recurrence:** Continuous

**Report(s):** Activities under this Minimum Control Measure will be included in the annual report submitted to the DNR

**Evaluation Methodology:** Structural BMPs that are installed will be inspected and maintained on a regular basis. Performance of the BMP measures will be evaluated to determine if they are functioning as anticipated and if any modification is necessary.



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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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***Permit requirement. 4.2.6.1.7***

**“A government employee training program to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. The permittee shall describe any existing, available materials the permittee plans to use such as those available from EPA, State or other organizations. The permittee shall describe how this training program will be coordinated with the outreach programs developed for the public information minimum measure and the illicit discharge minimum measure; and”**

**Best Management Practice (BMP):**

Development of a government employee training program to prevent and reduce storm water pollution.

**BMP Objective:**

Reduce the potential of storm water pollution from Municipal construction and maintenance activities.

**Measurable Goals:**

- Provide annual storm water training for each PW employee.
- Conduct training for other city employees (Parks and Police) on storm water issues. Training to occur at a minimum of every 2 years.

The training will include but not limited to the following topics:

- Fleet and Building Maintenance
- Erosion and Sediment Control for Projects involving Land Disturbance
- Illicit Discharge Detection
- Snow Removal
- Spill Prevention
- Chemical Handling and Application
- Spill Prevention and Clean Up

These activities are coordinated with the outreach programs developed for the public information and illicit discharge minimum control measures so that a consistent message is presented throughout Raymore's program.

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Completed

**Recurrence:** Every two years

**Report(s):** Activities associated with this MCM will be included in the annual report submitted to the DNR.

**Evaluation Methodology:** The content of the training modules will be reviewed and modified as necessary.

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| <b>MCM #6 Pollution Prevention/ Good Housekeeping</b> |
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**Permit requirement. 4.2.6.1.8**

**“How the permittee will evaluate the success of this minimum control measure.”**

**Best Management Practice (BMP):**

N/A

**BMP Objective:**

N/A

**Measurable Goals:**

**Responsible Department(s):** Public Works, Engineering Department, Parks Department

**Compliance Schedule:** Year 1-5

**Recurrence:** Continuous

**Report(s):**

**Evaluation Methodology:**

The practices outlined in this Minimum Control Measure will be reviewed and discussed on an annual basis with Operations and Maintenance Staff and Parks Maintenance Staff. The MCM will be adjusted and modified as appropriate based on input received.

