

A G E N D A
WORK SESSION MEETING
City of Moberly
January 03, 2022
6:00 PM

Requests, Ordinances, and Miscellaneous

1. An application for a conditional use permit submitted by Crockett Engineering on behalf of the Moberly School District for a proposed Alternative School located in the 800 Block of Shepherd Brothers Blvd.
2. Discussion Regarding A Letter Agreement With Jacobs Engineering Group Inc For On-Call Engineering Services Change Order #5 And Authorizing The City Manager To Execute The Agreement On Behalf Of The City.
3. Municipal Separate Storm Sewer System Storm Water Management Plan Update
4. Receipt of Bids for Amphitheater Proposals

City of Moberly

City Council Agenda Summary

Agenda Number: _____

WS #1.

Department: Comm. Dev.

Date: January 3, 2022

Agenda Item: An application for a conditional use permit submitted by Crockett Engineering on behalf of the Moberly School District for a proposed Alternative School located in the 800 Block of Shepherd Brothers Blvd.

Summary: The Planning & Zoning Commission approved this application at the December 21, 2021 meeting with the conditions of traffic study and storm water issue being resolved. Attached is a copy of the application, staff report and Conditional Use Permit.

Recommended Action: Please direct staff to bring this forward to the January 18, 2022 regular City Council meeting for final approval.

Fund Name: N/A

Account Number: N/A

Available Budget \$: N/A

ATTACHMENTS:

<input type="checkbox"/> Memo	<input type="checkbox"/> Council Minutes
<input checked="" type="checkbox"/> Staff Report	<input type="checkbox"/> Proposed Ordinance
<input type="checkbox"/> Correspondence	<input type="checkbox"/> Proposed Resolution
<input type="checkbox"/> Bid Tabulation	<input type="checkbox"/> Attorney's Report
<input type="checkbox"/> P/C Recommendation	<input type="checkbox"/> Petition
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<input type="checkbox"/> Application	<input type="checkbox"/> Budget Amendment
<input type="checkbox"/> Citizen	<input type="checkbox"/> Legal Notice
<input type="checkbox"/> Consultant Report	<input type="checkbox"/> Other _____

Roll Call

Aye

Nay

Mayor

M___ S___ **Jeffrey**

Council Member

M___ S___ **Brubaker**

M___ S___ **Kimmons**

M___ S___ **Davis**

M___ S___ **Kyser**

Passed Failed

**Memorandum**

To: *Planning and Zoning Commission*

From: *Planning Staff*

Subject: *AGENDA ITEM NO. 1 – Conditional Use Permit for Alternative School (revised)*

Meeting: *December 21, 2021*

Public Hearing to consider:

Public Hearing for a Conditional Use Permit submitted by Crockett Engineering on behalf of the Moberly School District for a proposed alternative school located in the 800 Block of Shepherd Brothers Blvd. This is currently zoned B-3 (General Commercial District)

COMMENTS:

The proposed site is bordered by B-3 General Commercial District on the East and South, and R-1 on the North and West. The proposed development will use 1.16 acres of the 16 acres parcel.

The applicant is proposing to build an Alternative Education Building with approximately 16,000 square foot building with 14 classrooms on the Northeast corner of proposed lot. The Site Plan was presented to Planning and Zoning on October 25th with the stipulation of a detailed traffic study within the adjoining school complexes, entrances and exits, loading and unloading areas. Along with a storm water review by an independent party for the existing and future development of the site to be conducted prior to development.

Prior to granting of any conditional use permit, the Planning and Zoning Commission or City Council may stipulate such conditions and restrictions upon the establishment, location, construction, maintenance, and operation of the conditional use permit as is necessary for the protection of the public interest and to secure compliance with the standards and conditions contained herein.

The Future land use map shows this property as General Commercial District.

Staff Comments:

Storm water plans and land disturbance documents have been submitted by Crockett Engineering to Public Utilities. Final acceptance is pending review by City Staff and Barr Engineering.

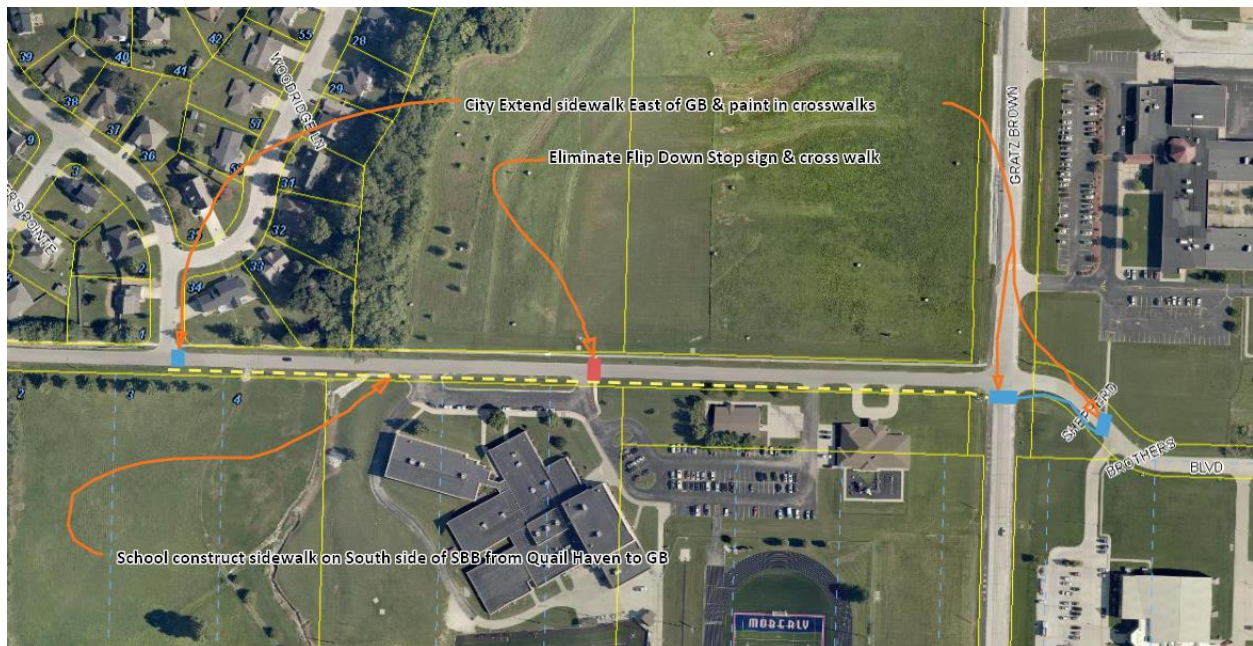
While we are waiting on a formal traffic study that will hopefully address points of egress into the school complex as a whole and look at addressing the flip-down stop signs that

currently exist on Shepherd Brothers Blvd., staff has informed the school in the past that these should be temporary, and a better solution found for this as part of this project.

Reviewing our focus on livable streets, the amount of pedestrian, bike and other alternative transportation, primarily for younger children in conflict with traffic at the same time as the peak traffic loading, it's imperative that there are sidewalks along both sides of Shepherd Brothers Blvd., adjacent to the school property.

Staff is recommending that a sidewalk be extended along the South side of SBB from GB to down past the drive entrance of the proposed alternate school, to across from Quail Haven. This is far enough back from the typical stacking and backup from a peak load time, it should be much safer for pedestrian egress to/from the West to the school complex. This also allows pedestrian and bike traffic along Gratz Brown to cross at the stop sign.

While the stormwater and traffic should be addressed in the Site Plan, if it is not resolved satisfactorily as a result of that site plan, it can be addressed here for the alternative school project.



Other Considerations:

- **Do we need additional lighting along this stretch**

Could work with Ameren to see what is available on secondary power for additional lighting

A Conditional Use Permit, when approved by Planning & Zoning Commission **will require the additional approval of the City Council.**

Respectfully submitted

**CITY OF MOBERLY
CONDITIONAL USE PERMIT APPLICATION**

Return Form To:
Zoning Administrator
City of Moberly
101 West Reed Street
Moberly, MO 65270-1551
(660) 263-4420
(660) 263-9398 (fax)

For Office Use Only

Deposit: _____
Date Filed: _____
Date Advertised: _____
Date Notices Sent: _____
Public Hearing Date: _____

APPLICANT INFORMATION:

Alt Ed.

Applicant: Crockett Engineering Consultants Phone: 573-447-0292
Address: 1000 W. Nifong Blvd., Bldg 1, Columbia, MO Zip: 65203
Owner: Moberly School District Phone: 660-269-2600
Address: 926 Shepherd Brothers Blvd., Moberly, MO Zip: 65270

PROPERTY INFORMATION:

Location of Property: _____ Parcel ID: 10-1.0-12.0-4.0-000-002.002

Legal Description: A TRACT OF LAND LOCATED IN THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 12, TOWNSHIP 53 NORTH, RANGE 14 WEST, MOBERLY, RANDOLPH COUNTY, MISSOURI AND BEING PART OF LOTS

2, 3 AND 4 OF THE SURVEY RECORDED IN PLAT BOOK B, PAGE 107 AND FURTHER BEING TRACT 1 OF THE UNRECORDED SURVEY BY MARK W. ROBERTSON, DATED: APRIL 10, 2021 AND CONTAINING 16.0 ACRES.

Present Zoning Classification: B-3 Acreage: 16.0

Present Use of Property: Vacant

Proposed Land Use Activity: School Facility

Article, Section and sub-section (if applicable) allowing for said special use to be applied for: _____

ADJACENT ZONING AND LAND USE:

	<u>Land Use</u>	<u>Zoning</u>
North	<u>Vacant Land as part of Tract</u>	<u>B-3, R-1 otherside of Sheperd</u>
South	<u>School/ College</u>	<u>B-3</u>
East	<u>School</u>	<u>B-3</u>
West	<u>Single Family/Large Tract Residential</u>	<u>R-1</u>

Should this special use be valid only for a specific time period? Yes _____ No X

If Yes, what length of time? _____

DOES THE PROPOSED CONDITIONAL USE MEET THE FOLLOWING STANDARDS? IF YES, ATTACH A SEPARATE SHEET EXPLAINING WHY.	Yes	No
The proposed conditional use complies with all applicable provisions of the regulations, including intensity of use regulations, yard regulations and use limitations?	X	
The proposed conditional use at the specified location will not adversely affect the welfare or convenience of the public?	X	
The proposed conditional use will not cause substantial injury to the value of other property in the neighborhood in which it is to be located?	X	
The location and size of the conditional use, the nature and intensity of the operation involved or conducted in connection with it, and the location of the site with respect to streets giving access to it have been planned so that the conditional use will not dominate the immediate neighborhood so as to hinder development and use of neighboring property in accordance with the applicable zoning district regulations?	X	
Off-street parking and loading areas will be provided in accordance with the standards set forth in the zoning regulations, and such areas will be screened from adjoining residential uses and located so as to protect such residential uses from any injurious effect?	X	
Adequate utility, drainage, and other such necessary facilities will be provided?	X	
Adequate access roads or entrance and exit drives will be provided and designed to prevent traffic hazards and to minimize traffic congestion in public streets and alleys?	X	
Adjoining properties and the general public will be adequately protected from any hazardous or toxic materials, hazardous manufacturing processes, obnoxious odors or unnecessarily intrusive noises?	X	

ATTACHMENTS REQUIRED:

1. A site plan as specified in Section of the Zoning Regulations as well as any other information, which would be helpful to the Planning and Zoning Commission in consideration of the application.
2. List of property owners located within:
 - A. 185 feet of the property if the proposed Special Use is located within the city's corporate limits;
 - B. 1,000 feet of the property if the proposed Special Use is adjacent to the city's corporate limits.



Applicant's Signature

10-29-2021

Date

**CITY OF MOBERLY, MISSOURI
CONDITIONAL USE PERMIT
REASONS FOR DETERMINATION**

ON DECEMBER 21, 2021, THE CITY OF MOBERLY PLANNING AND ZONING COMMISSION AT ITS REGULAR MEETING, RECOMMENDED APPROVAL (ACTION: APPROVAL, CONDITIONAL APPROVAL, DENIAL) OF A CONDITIONAL USE PERMIT FOR A(N) ALTERNATIVE EDUCATION SCHOOL TO BE LOCATED AT 800 SHEPHERD BROTHERS BLVD., MOBERLY, MO (ADDRESS OR LOCATION).

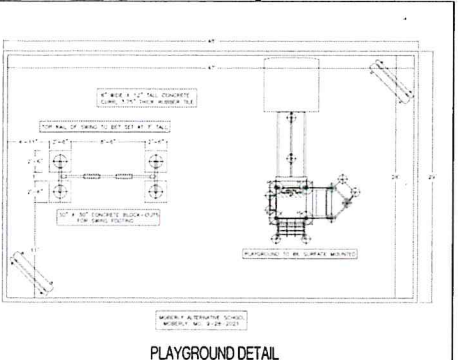
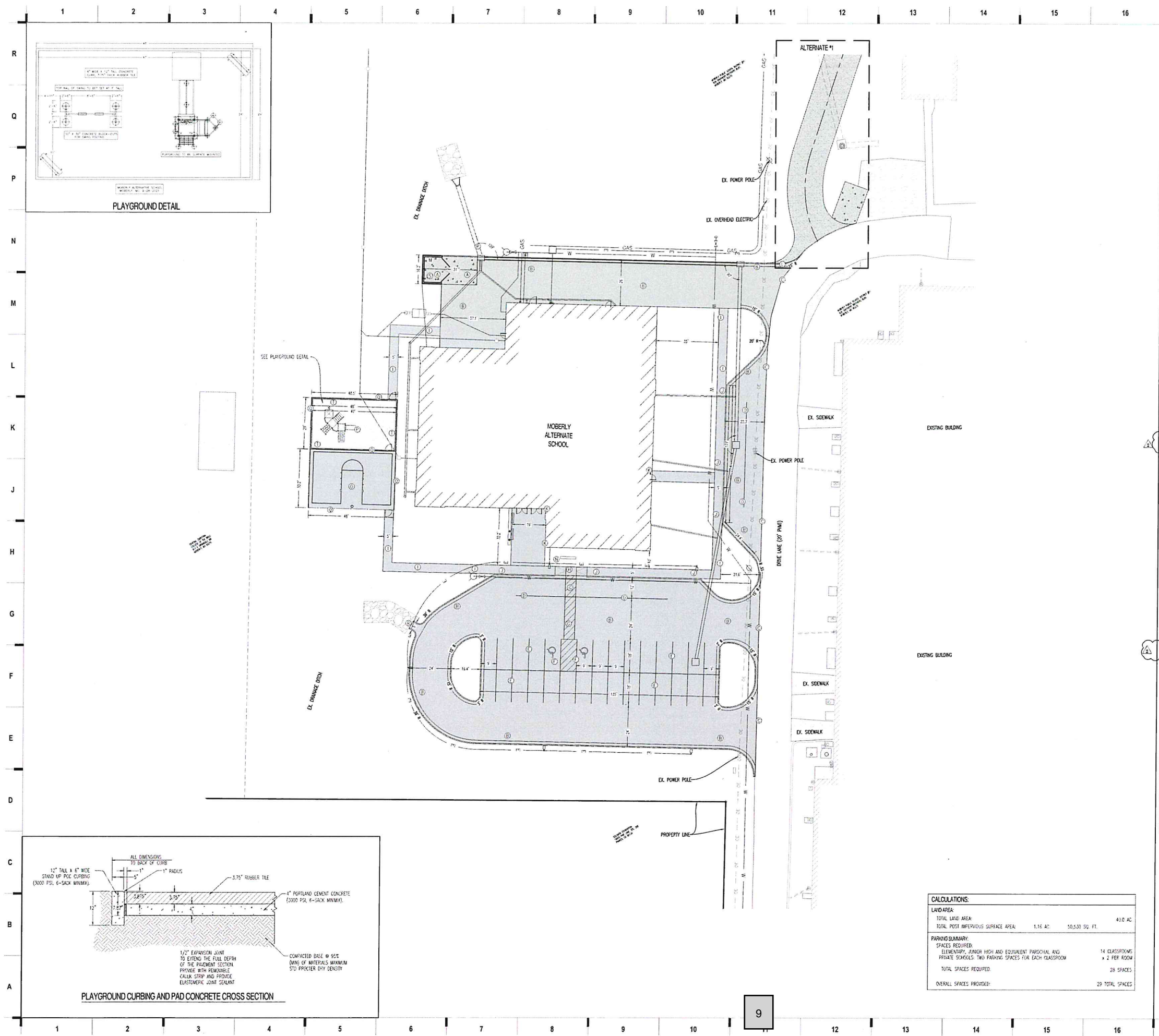
THE CITY COUNCIL WILL CONSIDER THE RECOMMENDATION OF THE PLANNING AND ZONING COMMISSION AT THE JANUARY 3, 2022 MEETING OF THE MOBERLY CITY COUNCIL.

IN RECOMMENDING APPROVAL (ACTION) OF THIS CONDITIONAL USE PERMIT, THE PLANNING AND ZONING COMMISSION CONSIDERED ALL STANDARDS LISTED IN THE ZONING REGULATION, AND ALL OTHER CONDITIONS LISTED FOR THAT USE IN OTHER SECTIONS OF THESE REGULATIONS. IN ADDITION, THE PLANNING AND ZONING COMMISSION FOUND THAT THE PROPOSED USE DID (DID/DID NOT) PROVIDE SAFEGUARDS TO ASSURE ITS COMPATIBILITY WITH THE SURROUNDING AREA.

CONDITIONS (IF ANY): CONTINGENT TO THE TRAFFIC STUDY AND STORM WATER ISSUES BEING RESOLVED

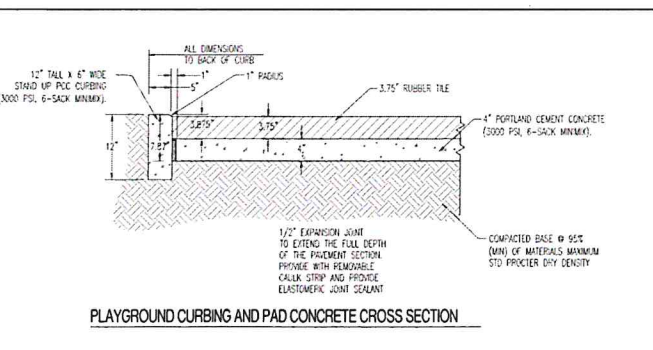
CHAIRPERSON

ZONING ADMINISTRATOR



PLAYGROUND DETAIL

SEE PLAYGROUND DETAIL



PLAYGROUND CURBING AND PAD CONCRETE CROSS SECTION

CALCULATIONS:			
LAND AREA:			
TOTAL LAND AREA:			410 AC
TOTAL PAVED IMPERVIOUS SURFACE AREA:	1.16 AC	50,500 SQ. FT.	
PARKING SUMMARY:			
SPACES REQUIRED:			
ELEMENTARY, JUNIOR HIGH AND EQUIVALENT PARSONAGE AND PRIVATE SCHOOLS: TWO PARKING SPACES PER CLASSROOM		14 CLASSROOMS	
		1 PER ROOM	
TOTAL SPACES REQUIRED:		28 SPACES	
OVERALL SPACES PROVIDED:		28 TOTAL SPACES	

- LEGEND OF LABELS**
- 1. CONSTRUCT 1/2" EXPANSION JOINT
 - 2. CONSTRUCT 4" THICK, 5' WIDE PCC WALK AT BACK OF CURB AS SHOWN (MAXIMUM LONGITUDINAL SLOPE 1:20. MAXIMUM CROSS SLOPE AT 1:50). REFER TO THICKENED EDGE SIDEWALK CROSS-SECTIONS DETAIL ON C6107.
 - 3. CONSTRUCT 4" THICK, 5' WIDE PCC WALK AT BACK OF CURB AS SHOWN (MAXIMUM LONGITUDINAL SLOPE 1:20. MAXIMUM CROSS SLOPE AT 1:50). REFER TO THICKENED EDGE SIDEWALK CROSS-SECTIONS DETAIL ON C6107.
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 - 17. CONSTRUCT 4" THICK, 5' WIDE PCC WALK AT BACK OF CURB AS SHOWN (MAXIMUM LONGITUDINAL SLOPE 1:20. MAXIMUM CROSS SLOPE AT 1:50). REFER TO THICKENED EDGE SIDEWALK CROSS-SECTIONS DETAIL ON C6107.

GENERAL NOTES:

1) CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF MOBERLY IMMEDIATELY PRIOR TO WORK IN THE RIGHT OF WAY, CONNECTIONS TO CITY MAINS, AND DURING CONSTRUCTION FOR REQUIRED INSPECTIONS.

2) CONTRACTOR SHALL REFER TO CITY OF MOBERLY STANDARD DRAINAGE DETAILS FOR PUBLIC IMPROVEMENTS FOR CONSTRUCTION DETAILS.

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HOLLISANDMILLER.COM

hollisandmiller architects[®]

PREPARED BY:

CROCKETT

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www.crockettengineering.com

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Henderson Engineers

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F: 816.442.2266

MOBERLY ALTERNATIVE EDUCATION
BUILDING

MOBERLY SCHOOL DISTRICT
926 Shepherd Brothers Blvd.
Moberly, Missouri 65270

REVISIONS:

#	Description	Date
A	ADDENDUM #4	12/15/2021

STATE OF MISSOURI
KYLE R. MILLER
Missouri
Professional Engineer
No. 2017055613

JOB NO.: 21017
DRAWN BY: KJM
CHECKED BY: TDC
DATE: 10/15/2021

CE105

SITE PLAN

City of Moberly

City Council Agenda Summary

Agenda Number: WS #2.

Department: Public Utilities

Date: January 3, 2022

Agenda Item: Discussion Regarding A Letter Agreement With Jacobs Engineering Group Inc For On-Call Engineering Services Change Order #5 And Authorizing The City Manager To Execute The Agreement On Behalf Of The City.

Summary: This scope includes minor tasks not related to other contracts with the city and allows for state and federal loan and grant administration tasks. This effort increases the existing contract not-to-exceed amount from \$20,000 to \$32,000.

Recommended Action: Direct staff to develop a resolution for approval at the next regular council meeting.

Fund Name: Capital Improvement Trust

Account Number: 304.000.5408

Available Budget \$: \$0.00 Transfer from Fund 303 (Operating Reserve) as needed

ATTACHMENTS:

<input type="checkbox"/> Memo	<input type="checkbox"/> Council Minutes
<input type="checkbox"/> Staff Report	<input type="checkbox"/> Proposed Ordinance
<input checked="" type="checkbox"/> Correspondence	<input type="checkbox"/> Proposed Resolution
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<input type="checkbox"/> Citizen	<input type="checkbox"/> Legal Notice
<input type="checkbox"/> Consultant Report	<input type="checkbox"/> Other _____

Roll Call

Aye **Nay**

Mayor

M___ S___ **Jeffrey** ___ ___

Council Member

M___ S___ **Brubaker** ___ ___

M___ S___ **Kimmons** ___ ___

M___ S___ **Davis** ___ ___

M___ S___ **Kyser** ___ ___

Passed Failed

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501 North Broadway
St. Louis, Missouri 63102
United States
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F +1.314.335.5104
F +1.314.335.5141
www.jacobs.com

December 15, 2021

Dana Ulmer
Director of Utilities
City of Moberly
101 West Reed Street
Moberly, MO 65270

Project Name: Moberly On-Call Engineering
Project Number: C5X55925

Subject: Proposal for Engineering Services Change Order #5

Dear Dana:

Jacobs Engineering Group, Inc. (Jacobs) is pleased to present our proposal to provide the City of Moberly (City) with on call Professional Engineering Services. This contract will cover minor tasks not related to other contracts with the City.

SCOPE

Tasks will be as requested by the City. It is anticipated that the majority of the budget will be used for loan and grant administration tasks.

FEE PROPOSAL

Our proposed fee the work described herein is to add an additional not to exceed cost of \$12,000 to the original contract dated October 3, 2019, Change Order #2 dated April 15, 2020, Change Order #3 dated May 22, 2020, and change order #4 dated November 6, 2020. Total not to exceed cost is increased to \$32,000.

SCHEDULE

Schedule will be on a task by task basis

ADDITIONAL CONTRACTUAL HOURLY RATES

The following hourly rates are valid through the end of calendar year 2022.

Description	Rate
Project Manager	\$130.00

December 15, 2021

Subject: Proposal for Engineering Services Change Order #5

Other hourly rates will be presented to and agreed upon by the City prior to the execution of work depending on what personnel are needed to complete the task.

This work will be performed under the Professional Services Agreement dated October 5, 2020. We will endeavor to be as efficient as we can in performing the work to minimize costs. If you have any questions, please let me know. Thank you for the opportunity to continue our long standing support of the City.

Very truly yours,

Jacobs Engineering Group, Inc.

Tobin Lichti, P.E.
Project Manager

Authorization to Proceed:

City of Moberly

Jacobs Engineering Group, Inc.

By _____

By _____

Title _____

Title _____

Date _____

Date _____

City of Moberly

City Council Agenda Summary

Agenda Number: _____

WS #3.

Department: Public Utilities

Date: January 3, 2022

Agenda Item: Municipal Separate Storm Sewer System Storm Water Management Plan Update

Summary: The City of Moberly is required by the Missouri Department of Natural Resources to have an NPDES (discharge) permit for the City's separate storm sewer system. This permit is issued for a period of five years. Upon receipt of feedback and direction from Missouri DNR, the Utilities Department, Stormwater Division, in consultation with Barr Engineering, revised the Stormwater Management Plan (SWMP) to match the MS4 Permit received in October 2021 and effective October 1, 2021. This includes required changes to Moberly's Stormwater Land Disturbance Manual, Post-Construction Manual and the Land Disturbance Field Manual. Outreach events are to be held over the next 60 days for stakeholders, City of Moberly staff, and the general public.

Changes to Stormwater Management Plan (SWMP) and Land Disturbance/Post-Construction Manuals

SWMP Changes:

- Changed responsible person designation to job title instead of name
- Added an iterative design process to assess the effectiveness of the SWMP each year
- Changed recordkeeping mechanism to spreadsheets instead of logbook

Minimum Control Measure 1 (MCM 1): Public Education and Outreach Program on Stormwater Impacts

- Added non-homeowning residents as a target audience for education
- Removed solid waste managers as a target audience
- Added nutrient pollution and construction pollutants as target pollutants
- Removed rain barrel program, installation of outfall signs, brochure distribution, and article calendar as outreach mechanisms
- Expanded Master Gardener partnership to partnerships with local environmental organizations (including the Master Gardeners)
- Added social media posts, trash cleanups, and article publication as outreach mechanisms for MCM 1
- Established forms on city website for submitting stormwater questions or concerns
- City will offer erosion and sediment control training to contractors at least once per permit cycle

MCM 2: Public Involvement and Participation

- Changed Minimum Control Measure 2 (MCM 2) to only cover public involvement in permit renewal
- Changed Stormwater Committee meeting schedule to once per permit cycle
- Established requirement for annual Stormwater update to City Council
- Created Stormwater complaint forms on City website

MCM 3: Illicit Discharge Detection & Elimination

- Stormwater Department will inspect at least 60% of all outfalls per permit cycle instead of inspecting 19 representative outfalls quarterly
- Added storm sewer mapping, household hazardous waste recycling program, targeted presentations, stormwater complaint forms, public education, and city staff training to illicit discharge prevention Best Management Practices (BMPs)
- Removed educational conference as illicit discharge prevention BMP
- Added explanation of how priority areas are chosen

MCM 4: Construction Site Stormwater Runoff Control

- Described criteria for stream inspections
- Described prioritization mechanism for construction inspections
- Added time limit for responses to public complaints
- Added stormwater complaint forms as BMP
- Changed contractor self-inspection frequency to once every 14 days and within 72 hours of a 2.98-inch rainfall

MCM 5: Post-Construction Stormwater management in New Development and Redevelopment

- MS4 inspectors need annual training on post-construction stormwater controls
- Required annual inspection of permanent stormwater controls
- Described time limit for post construction stormwater permit renewal
- Updated deadline for requiring post construction stormwater permits
- Described inspection criteria
- Described inspection frequency
- Added storm sewer mapping project and stormwater complaint forms as BMPs

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

- Required salt/de-ice training for municipal employees
- Required SOPs for all municipal departments by June, 2022
- Established procedures to establish if there are impacts to water quality for new flood management projects

Land Disturbance Manual:

Managers of sites with a Land Disturbance Permit are required to perform self-inspections at least once every 14 days, and within 48 hours of any rain event with 2.98 inches or more of rain

Post-Construction Manual

- Required annual inspection of permanent stormwater controls
- Described time limit for post construction stormwater permit renewal
- Updated deadline for requiring post construction stormwater permits
- Described inspection criteria
- Described inspection frequency

Recommended Action: Review the Storm Water Management Plan. Direct staff to develop an ordinance for acceptance of updated plan.

Fund Name: N/A

Account Number: N/A

Available Budget \$: N/A

ATTACHMENTS:**Roll Call****Aye****Nay**

<input type="checkbox"/> Memo	<input type="checkbox"/> Council Minutes
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<input type="checkbox"/> Application	<input type="checkbox"/> Budget Amendment
<input type="checkbox"/> Citizen	<input type="checkbox"/> Legal Notice
<input type="checkbox"/> Consultant Report	<input checked="" type="checkbox"/> Other <u>Draft Plans & Permit</u>

MayorM___ S___ **Jeffrey****Council Member**M___ S___ **Brubaker**M___ S___ **Kimmons**M___ S___ **Davis**M___ S___ **Kyser**

Passed Failed

Post-Construction Stormwater Manual

Prepared for
City of Moberly, Missouri

December 2021



Post-Construction Stormwater Manual

December 2021

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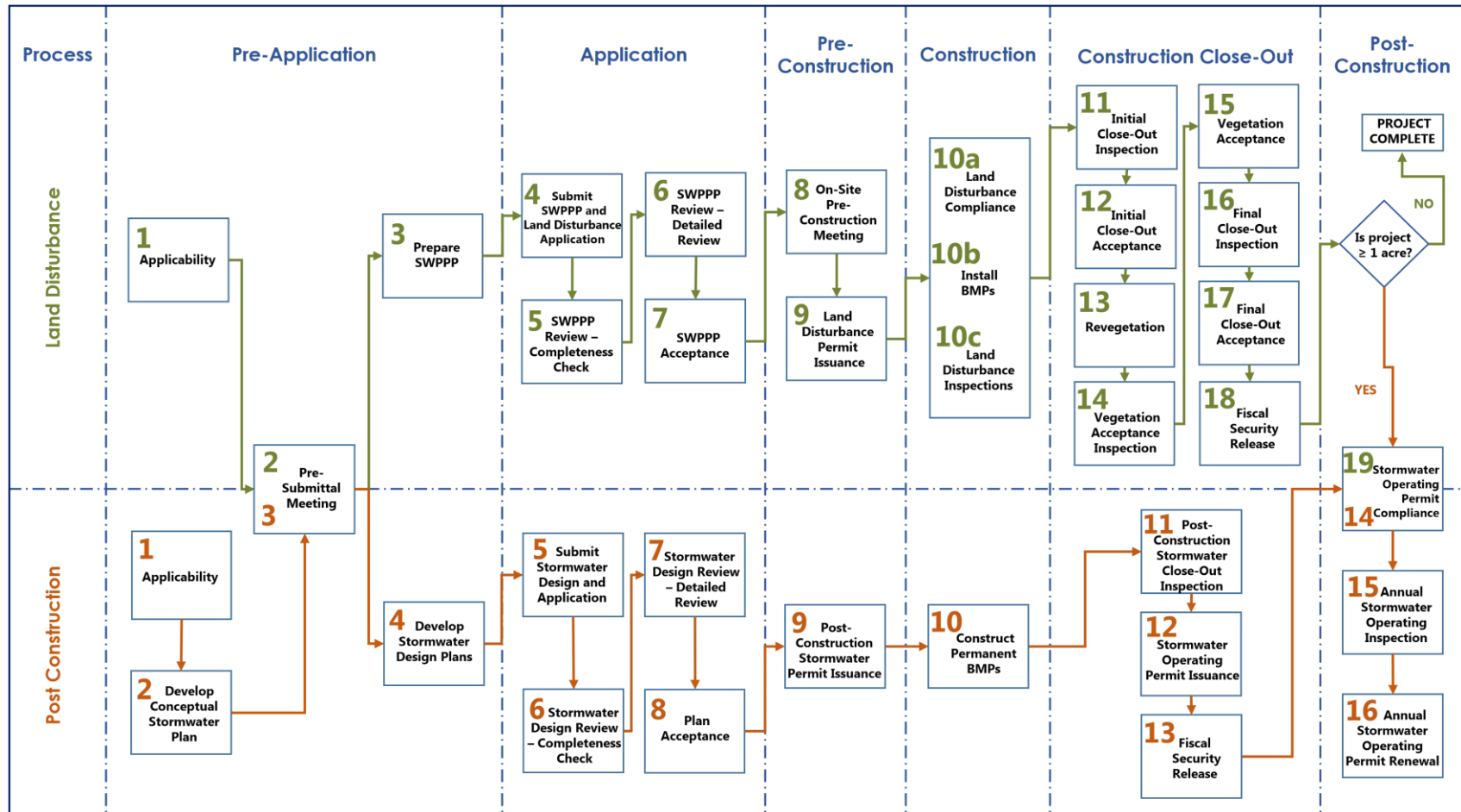
Appendix A	Required Checklist and Cost Estimate for a Fee in Lieu of Permanent BMP(s)
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Post-Construction Stormwater Permit Process

Phase	Step No.	Post-Construction Stormwater Step Description	Section No.
Pre-Application	1	Applicability: Confirm that a Post-Construction Stormwater Permit is required.	1.2
	2	Develop Conceptual Stormwater Plan: With assistance of a design engineer (Missouri PE), develop a conceptual stormwater plan, including conceptual permanent best management practices (BMPs).	2.1
	3	<ul style="list-style-type: none"> • Pre-Submittal Meeting: Contact the City of Moberly Public Utilities Department (City) to schedule a pre-submittal meeting. • Meet with City to discuss applicable permits, post-construction stormwater requirements, and the conceptual stormwater plan. Required attendees at this meeting shall include, but are not limited to, the Applicant's design engineer. 	2.2
	4	Develop Stormwater Design Plans: A design engineer shall develop stormwater design plans that include appropriate permanent BMPs in accordance with Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Post-Construction Stormwater Manual (Manual).	3.1 - 3.7
Application	5	Submit Stormwater Design and Application: Submit Post-Construction Stormwater Application, stormwater design plans, and other required documents to City for review. An application fee shall be included with this submittal.	4.1
	6	Stormwater Design Review – Completeness Check: The City shall conduct a pre-review to check the stormwater design plans and supporting documents for a basic level of completeness based on compliance with Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual. If deemed incomplete, the submittal shall be returned to the Applicant for modification and resubmission.	4.2.1
	7	Stormwater Design Review – Detailed Review: Once the submittal is deemed complete, the City shall conduct a detailed review of the stormwater design plans and supporting documents for compliance with Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual. If deficiencies are noted, the City shall provide written comments to the Applicant; such comments may include questions, requests for additional information, and/or requests for modifications to the stormwater design in order to comply with applicable requirements. If such comments are received, the Applicant shall address each comment and resubmit revised documents along with a summary of how each comment was addressed.	4.2.1
	8	Plan Acceptance: <ul style="list-style-type: none"> • When City has found the stormwater design to meet the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the stormwater design plans will be accepted. • The Applicant shall post the required fiscal security and submit at least 3 sets of the stormwater design plans, sealed and signed by a Missouri PE, to the City to be signed and returned. 	4.2.2

Phase	Step No.	Post-Construction Stormwater Step Description	Section No.
Pre-Construction	9	Post-Construction Stormwater Permit Issuance: If Applicant is in compliance with the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue a Post-Construction Stormwater Permit.	4.3
Construction	10	Construct Permanent BMPs: Ensure construction of permanent BMPs in accordance with the accepted stormwater designs, requirements of Ch. 34, Art. IV of the City's Code of Ordinances, and guidance provided in this Manual.	5.1.1
Construction Close-Out	11	Post-Construction Stormwater Close-Out Inspection: <ul style="list-style-type: none"> After the site is stabilized (including final vegetation), contact the City to schedule the post-construction stormwater close-out inspection. A representative of the Permittee shall attend the post-construction BMP inspection. Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection. 	5.1.2 - 5.1.3
	12	Stormwater Operating Permit Issuance: When City has found the stormwater BMP(s) to be constructed in accordance with the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the City shall give the Owner a signed post-construction stormwater close-out inspection form and transition the Post-Construction Stormwater Permit to a Stormwater Operating Permit.	5.2
	13	Fiscal Security Release: Submit a Fiscal Security Release Form to the City to be signed and returned.	5.2
Post-Construction	14	Stormwater Operating Permit Compliance: Ensure compliance with the Stormwater Operating Permit.	6.1
	15	Annual Stormwater Operating Inspection: <ul style="list-style-type: none"> Once a year, contact the City to schedule a stormwater operating inspection. A representative of the Owner shall attend each stormwater operating inspection. If deficiencies are noted by the City, the Owner must provide to the City, within 2 weeks of the inspection, a plan and schedule to correct the deficiencies. Correct deficiencies as requested by the City as soon as practicable and no later than 3 months after the inspection, unless specifically arranged with the City. Once deficiencies are corrected, contact the City to schedule a follow-up inspection. If deficiencies are not corrected within 3 months and no alternative arrangements have been made with the City, deficiencies will be corrected by the City at the Owner's expense. 	6.1
	16	Annual Stormwater Operating Permit Renewal: If Owner is in compliance with the Stormwater Operating Permit, the City shall renew the Permit after completion of the annual stormwater operating inspection.	6.1

Land Disturbance and Post-Construction Process Overview



1.0 Introduction

Step in Section 1.0:

Step 1 – Applicability:

Confirm that a Post-Construction Stormwater Permit is required. (Section 1.2)

1.1 Post-Construction Stormwater Permit Program

As required by the Missouri Department of Natural Resources (MDNR) State Operating Permit No. MO-R040030 for Regulated Small Municipal Separate Storm Sewer Systems (MS4), the City of Moberly (City) implements, and enforces a program developed to address the quality of long-term stormwater runoff from new development and redevelopment projects.¹ This Post-Construction Stormwater Permit Program establishes controls on the quantity and quality of stormwater released from post-construction developments and is designed to achieve the following objectives.²

- Protect against increased flooding and decreased water quality of downstream areas and streams due to effects of development;
- Protect the welfare of individuals and their property by reducing the effects of development;
- Protect the environment and aquatic habitat of fish and other species.

The City's Post-Construction Stormwater Permit Program is authorized by Chapter 34, Article IV of the City Code of Ordinances and administered and enforced by the City's Public Utilities Department through issuance of Post-Construction Stormwater Permits. Post-Construction Stormwater Permit requirements and guidance are contained within this *Post-Construction Stormwater Manual* (Manual). The City also implements and enforces a Land Disturbance Permit Program with requirements and guidance contained within the City's *Land Disturbance Manual* and supplemental *Land Disturbance Field Manual*.

The requirements within this Manual should be regarded as the minimum requirements for protecting the public health, safety, comfort, convenience, prosperity, and welfare of the residents of the City. The City reserves the right to apply more stringent criteria as it deems necessary. Additionally, the City reserves the right to change, modify, or alter these requirements at any time. The *Post-Construction Stormwater Manual* shall be construed to further its underlying purposes and intent. Whenever a provision in this Manual or any provision in any law, ordinance, resolution, rule, or regulation of any kind, contain requirements covering any of the same subject matter, whichever are more restrictive or impose higher standards shall govern.

¹ Adapted from Missouri State Operating Permit (No. MO-R040030), Part 4.2.5.1.

² Adapted from the City's Code of Ordinances, Ch. 34, Art. IV, Section 34-101.

1.2 Projects Requiring a Post-Construction Stormwater Permit

Step 1

Applicability

The City requires that a project's owner and engineer obtain a Post-Construction Stormwater Permit prior to the start of activities within the City. All such projects within the City must obtain a Post-Construction Stormwater Permit even if the project has been approved by a state or federal agency.

Projects that require a Post-Construction Stormwater Permit:

- Any project that develops greater than or equal to one acre of land.
- Any project that develops less than one acre when part of a larger common plan of development or sale that will develop a cumulative total of one or more acres over the life of the project.^{3,4}
- Development activities less than one acre in size if the City deems it necessary⁵ to control the quantity and/or quality of post-construction stormwater runoff.

Projects not requiring a Post-Construction Stormwater Permit shall seek to control the release rate and quality of stormwater in order to minimize detrimental downstream impacts.

In addition, any projects meeting the above criteria that have been designed and platted without post-construction stormwater controls are required to obtain a Post-Construction Stormwater Permit. The state of Missouri requires that lots which are part of a common plan of development, obtain a land disturbance permit, if the development is equal to or greater than one acre in size. The City recognizes this state requirement, and recognizes that there are subdivisions within city limits that were planned and platted prior to the implementation of these stormwater regulations. In such cases, the City may consider allowing the landowner to participate in off-site stormwater control or other means of stormwater mitigation to satisfy these requirements. Projects not meeting the criteria listed above are not required to obtain a Post-Construction Stormwater Permit.

1.3 Who Obtains a Post-Construction Stormwater Permit?

The Post-Construction Stormwater Permit shall be signed by the project owner, the engineer, and any third party acting on behalf of the owner or engineer (e.g., consultant, attorney). Before a Post-

³ An owner or developer may have several adjacent projects that individually may not be subject to the phasing requirements. Such projects should not be treated separately for purposes of erosion and sediment control. If the individually platted projects are adjacent to each other and grading may or may not be occurring at the same time, the City will treat the sum of the individual projects as one large project. The sum of the individual projects shall be subject to the area phasing requirements.

⁴ As defined in the Missouri State Land Disturbance Permit, a "Larger Common Plan of Development or sale" is a *contiguous area where multiple separate and distinct construction activities are occurring under one plan*; and, as defined in the USEPA Construction Stormwater General Permit, a "Common Plan of Development or Sale" is a *contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one common plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur on a specific plot.*

⁵ Adapted from the City's Code of Ordinances, Ch. 34, Art. IV, Section 34-103.

Construction Stormwater Permit is issued, the owner, the engineer, and any third party acting on behalf of the owner or engineer are referred to as "applicants." After the permit is issued, they are referred to as "permittee(s)." If the property changes ownership, the owner must provide information regarding the change of ownership to the City. The new owner must obtain a new Post-Construction Stormwater Permit.

A permittee is any person who is issued a Post-Construction Stormwater Permit by the City and that person(s) is legally responsible for complying with the Post-Construction Stormwater Permit. If a corporation applies for a permit, then a manager, officer of the corporation, or other legally authorized person must sign the permit as the Permittee.

Permittee(s) (owner, engineer, or any third party acting on behalf of the owner or engineer) are responsible for meeting all of the requirements of the City's Post-Construction Stormwater Permit Program. This Manual is used by a design engineer to develop stormwater control measures. This Manual covers the entire Post-Construction Stormwater Permit process.

1.4 Fee In Lieu of a Post-Construction Stormwater Permit

On a case-by-case basis, the City may identify an opportunity for construction or improvement of a multi-project (area-wide) permanent stormwater Best Management Practice (BMP). In the event of such an opportunity, the City may accept a fee in lieu of (FILO) a Post-Construction Stormwater Permit, and thus, construction of a permanent stormwater BMP. The purpose of the fees collected by the City through the FILO option is to provide an alternative Post-Construction Stormwater Permit for projects and a funding source for the construction and improvement of the City's stormwater management system.

Examples of opportunities when the FILO option may be appropriate include, but are not limited to, the following:

- Site characteristics restrict a project from achieving the stormwater design requirements of this Manual (refer to Section 3.0).
- The City recognizes an opportunity for construction or improvement of an area-wide permanent stormwater BMP that may prove favorable to a project-specific BMP.
- Stormwater management may be more impactful for a project in an off-site location, e.g., upstream of the project area.

If a project owner and engineer opt to pursue the FILO option, they should discuss the potential for this option during preliminary project meetings with the City. Upon approval of the FILO option for a project, the project owner and engineer shall provide a cost estimate to the City that includes, at minimum, the engineering, design, construction, and contingency costs for a permanent detention and/or infiltration BMP that adheres to the design requirements established in Section 3.0 of this Manual. Additionally, the cost estimate shall be developed with the assumption the detention and/or infiltration BMP would be constructed on the project site. The project owner and engineer shall use the required checklist and cost estimate form in Appendix A to develop the required cost estimate. Table 1 provides a summary of the

required items for the cost estimate. Additional details and requirements for the cost estimate are provided in Appendix A.

Table 1 Required FILO Option Cost Estimate Items

Category	Description
General Construction	Engineering and Design
	Permitting
	Mobilization
	Erosion Control
	Other, as needed ⁽¹⁾
Storm Sewer – Junction Box	Junction Box
	Pipe
	End Section
	Riprap
	Other, as needed ⁽¹⁾
Detention or Infiltration BMP ⁽¹⁾	Riprap
	Excavation
	Topsoil
	Grading
	Seeding
	Other, as needed ⁽¹⁾
Contingency	10% of Total

(1) To be determined by the project owner, engineer, and City staff pending site conditions and stormwater management needs.

2.0 Pre-Submittal Meeting

Steps in Section 1.4:

Step 2 – Develop Conceptual Stormwater Plan:

With assistance of a design engineer (Missouri PE), develop a conceptual stormwater plan, including conceptual permanent BMPs (Section 2.1).

Step 3 – Pre-Submittal Meeting:

- Contact the City's Public Utilities Department (PUD) to schedule a pre-submittal meeting.
- Meet with the City to discuss applicable permits, post-construction stormwater requirements, and the conceptual stormwater plan. Required attendees at this meeting shall include, but are not limited to, the Applicant's design engineer (Section 2.2).

2.1 Conceptual Stormwater Plan

Step 2

Develop Conceptual Stormwater Plan

In preparation for attending a pre-submittal meeting with PUD staff, a conceptual stormwater plan shall be developed with a design engineer's assistance. The conceptual stormwater plan shall consist of a conceptual-level proposal of permanent stormwater BMPs that would be appropriate for the site and meet the requirements described in Section 3.0. Ideally, the design engineer shall conduct a pre-design site assessment, as described in Section 3.3, prior to preparing the conceptual stormwater plan.

2.2 Pre-Submittal Meeting

Step 3

Pre-Submittal Meeting

Before developing stormwater design plans or other submittal documents for a development project, a pre-submittal meeting with PUD staff is required, unless deemed otherwise by the City. The purpose of the pre-submittal meeting is to discuss applicable Post-Construction Stormwater Permit Program requirements and confirm what related plans and permits may be required. The meeting will also include initial discussion of a conceptual stormwater plan that may be appropriate for the site.

At minimum, the owner and the design engineer for the stormwater design plans shall attend the pre-submittal meeting. The owner or owner's representative should bring the following information to the meeting:

- Name, type, and location of development;
- Brief description of site topography and drainage features;
- Size of development site and anticipated developed area in acres;

- Conceptual stormwater plan (Section 2.1); and
- List of anticipated plans and applicable permits.

The owner or design engineer may contact the City to schedule the pre-submittal meeting and it may be held in conjunction with a pre-submittal meeting for the Land Disturbance Permit Program. Other City, state, and federal permits may apply to a project, including a City Land Disturbance Permit. Contact information for the City, MDNR Northeast Regional Office, and U.S. Army Corps of Engineers – Kansas City District is provided in Appendix B. For more details on potentially applicable permits to stormwater and land disturbance projects, refer to Table 2-1 in the *Land Disturbance Manual*.

3.0 Stormwater Design Requirements

Step in Section 3.0:

Step 4 – Develop Stormwater Design Plans:

A design engineer shall develop stormwater design plans that include appropriate permanent BMPs in accordance with Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual (Sections 3.1 through 3.7).

Step 4

Develop Stormwater Design Plans

3.1 Overview

Stormwater design plans must be developed for all projects within the City that are required to obtain a Post-Construction Stormwater Permit (Section 1.2). All stormwater design plans must be prepared by, or under the responsible charge of, sealed (stamped), and signed by a professional engineer registered in the state of Missouri (referred to in this Manual as the "design engineer"). It is the design engineer's responsibility to prepare the stormwater design plans according to the requirements found in this Manual.

Stormwater designs shall:

- Be designed to achieve the objectives described in Section 3.2;
- Be appropriate for site-specific conditions (assessed as described in Section 3.3);
- Preserve natural areas to the extent possible (as described in Section 3.4);
- Include appropriate permanent stormwater BMPs selected and designed as described in Sections 3.5 and 3.6.

Required stormwater design-related submittals are described in Section 3.7.

3.2 Design Objectives

To comply with the City's Post-Construction Stormwater Permit Program, stormwater designs must include long-term controls on the quantity and quality of stormwater released from post-construction developments. Such long-term stormwater controls shall be designed to achieve the following objectives:⁶

⁶ Adapted from the City's Code of Ordinances, Ch. 34, Art. IV, Section 34-101.

- Protect against increased flooding and decreased water quality of downstream areas and streams due to effects of development;
- Protect the welfare of individuals and their property by reducing the effects of development;
- Protect the environment and aquatic habitat of fish and other species.

To achieve these design objectives, the City requires applicants to seek to control the quantity (volume and peak runoff rate) and quality of stormwater runoff to mimic pre-development conditions to the extent feasible (where pre-development condition is defined as the natural condition of a site before development occurred). Related design criteria are described further in Section 3.6.

3.3 Pre-Design Site Assessment

It is highly recommended that the design engineer visit the site to assess existing conditions prior to beginning design of permanent stormwater BMPs. Ideally, this site assessment shall occur prior to preparing a conceptual stormwater plan (Section 2.1) and participating in a pre-submittal meeting with the City (Section 2.2); however, if that is not possible, it should still occur prior to preparing stormwater design plans.

During this site assessment, the design engineer should consider how the proposed development of the site will alter these conditions and how permanent stormwater BMPs can be implemented so that post-development stormwater runoff conditions will mimic pre-development stormwater runoff conditions to the extent feasible. The site assessment should include the following:

- Existing stormwater drainage patterns, including:
 - Stormwater runoff;
 - Stormwater run-on from other areas;
 - Where stormwater currently discharges to and where it will discharge to after development (e.g., storm sewer, water body).
- Existing site topography (e.g., existing steep or mild slopes).
- Existing land cover, including:
 - Whether the site contains naturally vegetated areas that should, if possible, be preserved;
 - How existing land cover compares to proposed land cover (e.g., grassy or wooded areas, impervious surfaces such as asphalt, concrete, and rooftops).
- Existing or potential space restrictions (e.g., what is the current site layout, how might space restrictions affect permanent stormwater BMP design).

- Identifying downstream water bodies and downstream landowners, including potential for the proposed development to impact them.

3.4 Preserve Natural Areas

Natural areas that are stable and pervious, such as grass or tree covered spaces, should be preserved to the extent practical. Preserving natural area aids in maintaining the site's ability to infiltrate stormwater into the ground and thus:

- Allows natural recharge of water into the ground;
- Minimizes the increase in stormwater runoff leaving the site as the result of the development;
- Reduces the amount of stormwater that needs to be managed by permanent stormwater BMPs and thus reduces the size of such BMPs.

Stormwater runoff can also be directed to flow across natural areas and thus improve stormwater quality through filtration.

If a site already contains large amounts of impervious surfaces, it may be possible to return some of these areas to natural, pervious surfaces. Wherever feasible, site layout should be designed to minimize impervious surfaces and maximize pervious surfaces.

3.5 Permanent BMP Selection

The design engineer shall use their best professional judgement to select permanent stormwater BMPs that are appropriate for site-specific conditions and intended to achieve the objectives described in Section 3.2 and meet the design criteria described in Section 3.6. In some cases, multiple permanent stormwater BMPs may be necessary at a site to reliably achieve design objectives.

Potential permanent stormwater BMP options include, but are not limited to:

- Detention basins (i.e., dry ponds);
- Retention basins (i.e., wet ponds);
- Infiltration systems (e.g., infiltration basins, infiltration trenches);
- Filtration / biofiltration systems;
- Bioretention systems (e.g., rain gardens);
- Constructed wetlands;
- Bioswales / vegetated swales;
- Hydrodynamic separators;

- Pervious pavement / pavers;
- Green roofs;
- Rain barrels and cisterns.

Refer to resources such as the MDNR's "Protecting Water Quality: A Field Guide to Erosion, Sediment and Stormwater Best Management Practices for Development Sites in Missouri and Kansas" and "Missouri Guide to Green Infrastructure Integrating Water Quality into Municipal Stormwater Management" for additional potential options and associated design considerations.

Note that the City has discretion to approve or disapprove the use of specific stormwater BMPs based on site-specific conditions both on site and downstream. Discussion of proposed stormwater BMPs with the City is recommended, beginning with discussion of a conceptual stormwater plan (Section 2.1) during the pre-submittal meeting (Section 2.2).

As an alternative to installing permanent stormwater BMPs on site, the applicant could also pursue one of the following options:

- Propose a stormwater design for a larger area that would include management of stormwater from the site. An area-wide stormwater design would be required to achieve the same design objectives (Section 3.2) and meet the same design criteria (Section 3.6) as an on-site design. If this is a preferred option, the design engineer shall contact the City to discuss the feasibility of implementing an area-wide design.
- Pay a fee in lieu of constructing a permanent stormwater BMP. If this is a preferred option, the applicant shall refer to Section 1.4 of this Manual.

3.6 Design Criteria

To achieve the design objectives described in Section 3.2, the City requires applicants to seek to control the quantity (volume and peak runoff rate) and quality of stormwater runoff to mimic pre-development conditions to the extent feasible (where pre-development condition is defined as the natural condition of a site before development occurred).

Specifically, the permanent stormwater BMPs at a site shall be designed in accordance with the following criteria:

- **Water Quality Criteria:** BMPs designed to retain and release stormwater shall retain the 1-year, 24-hour storm event (at minimum) and release it over a 24-hour period (at minimum);
- **Water Quantity Criteria:**
 - Mimic pre-development condition stormwater runoff volume up to the 25-year, 24-hour design storm;

- Mimic pre-development condition peak stormwater runoff rates up to the 2-, 10-, and 25-year, 24-hour design storms (i.e., post-development peak discharge rate shall be equal to or less than the pre-development peak discharge rate for each frequency);
- Consider downstream capacity: if downstream stormwater structures are not capable of conveying flow from the 100-year, 24-hour design storm, then additional detention capacity or additional conveyance structures shall be provided.
- Prevent erosion by providing protection at any discharge point (e.g., velocity dissipation, stabilization);
- Provide a vehicle access and minimum 10-foot-wide easement for inspecting, operating, and maintaining all stormwater features. Easements shall include additional width to consider project features as needed (e.g., stormwater infrastructure, buried utilities, etc.).

This Manual is to serve as a minimum standard and guidance document. It is the responsibility of the design engineer to design measures that will adequately control stormwater.

If the design engineer determines that any of these design criteria are infeasible, the design engineer shall provide the City with documentation of infeasibility, along with proposed alternative methodology for achieving the design objectives (Section 3.2), to the extent feasible. Additionally, if the design engineer determines that any post-construction stormwater requirement poses a safety hazard on their particular project, it is the design engineer's responsibility to notify the City in writing of their concerns and recommend an approach to lessen potential problems.

Note that the City has discretion to disapprove stormwater designs that are deemed unlikely to consistently achieve the design objectives (Section 3.2) based on best professional judgment.

3.7 Submittal Requirements

3.7.1 Design Plans

Hard copy plans must be submitted to the City showing the design of all permanent stormwater BMPs. A site layout must be submitted showing the location of all BMPs on the site. Detail sheets must also be included to show the specific size and design of all BMPs to be constructed or installed. As applicable to the specific BMP, the details sheets shall include plan view(s), profile view(s), inlet detail(s), outlet structure detail(s), hydraulic profile(s) for features such as emergency spillways, pretreatment system detail(s), etc. All plan sheets shall be 24" x 36" unless otherwise approved by the City. Drawings submitted for final acceptance must be sealed and signed by the design engineer registered in the state of Missouri.

3.7.2 Calculations

Calculations that must be submitted are:

- Hydrologic calculations performed to determine pre- and post-development stormwater runoff;
- Outlet structure and spillway rating curve(s) (as applicable);

- Stormwater routing calculations (as applicable).

If modeling software is used, sufficient documentation shall be provided in order to describe the inputs into the model, methods used, and final results.

3.7.3 Operation and Maintenance Plan and Agreements

An operation and maintenance plan shall also be submitted. This plan shall list the operations and maintenance that will be needed for all permanent stormwater BMPs once construction is complete in order to ensure that they continue working as designed in the future. The plan shall be designed to ensure adequate long-term operation and maintenance of all permanent stormwater BMPs, including, as appropriate, agreements between the permittee and other parties such as post-development landowners. If, during review or any point in the future, the maintenance plan is found to be inadequate for preserving the functionality of the permanent stormwater BMP(s), the City requires that it be amended to remedy deficiencies.

4.0 Application and Design Review

Steps in Section 4.0:

Step 5 – Submit Stormwater Design and Application:

The applicant submits the Post-Construction Stormwater Application, stormwater design plans, and other required documents to City for review. An application fee shall be included with this submittal (Section 4.1).

Step 6 – Stormwater Design Review – Completeness Check:

The City shall pre-review the stormwater design plans and supporting documents to check for a basic level of completeness based on compliance with Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual. If deemed incomplete, the submittal will be returned to the Applicant for modification and resubmission (Section 4.2.1).

Step 7 – Stormwater Design Review – Detailed Review:

Once the submittal is deemed complete, the City shall conduct a detailed review of the stormwater design plans and supporting documents for compliance with of the City's Code of Ordinances and guidance provided in this Manual. If deficiencies are noted, the City will provide written comments to the Applicant; such comments may include questions, requests for additional information, and/or requests for modifications to the stormwater design in order to comply with applicable requirements. If such comments are received, the Applicant shall address each comment and resubmit revised documents along with a summary of how each comment was addressed (Section 4.2.1).

Step 8 – Plan Acceptance:

- When the City has determined the stormwater design meets the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the stormwater design plans will be accepted.
- The Applicant shall post the required fiscal security and submit at least three sets of the stormwater design plans, sealed and signed by a Missouri PE, to the City to be signed and returned (Section 4.2.2).

Step 9 – Post-Construction Stormwater Permit Issuance:

If the Applicant is in compliance with the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue a Post-Construction Stormwater Permit (Section 4.3).

4.1 Post-Construction Stormwater Permit Application

Step 5

Submit Stormwater Design and Application

After completing all applicable plans and designs in accordance with the requirements of this Manual, the permittee shall submit the following to the City:

- Stormwater design plans;
- All required calculations showing the stormwater design methodology and how the design meets applicable design criteria (as described in Section 3.6);
- Related permits and plans, including a maintenance plan;
- Stormwater permit application (Appendix C);
- Required checklist for acceptance of permanent BMPs (Appendix D);
- Stormwater permit application fee, which consists of a base fee and per acre charge.

4.2 Stormwater Design Review and Acceptance

4.2.1 Stormwater Design Review

Step 6

Stormwater Design Review – Completeness Check

The City will review the stormwater design for completeness within approximately 10 business days after the plans and documents are submitted. Upon submittal of the design, the applicant shall be prepared to respond promptly to any questions, requests for additional information, and/or requests for SWPPP modifications. If the design does not meet the requirements described in Section 3.0, it will be returned to the applicant for revisions. The one-week review period will begin again upon submittal of the revised design. The revision and review process will continue until the design is deemed complete by the City.

Step 7

Stormwater Design Review – Detailed Review

Once the City deems the stormwater design complete, a detail review based on the requirements outlined in Section 3.7 will take place. The proposed post-construction stormwater controls will be checked for proper application, timing, placement, design, and maintenance plan. Typically, written comments will be provided to the applicant within 25 business days of the City accepting the stormwater design as complete. This applies to initial submittals as well as resubmittals. The applicant shall revise the stormwater design and fully address each comment from the City. If the City does not deem the comment revisions sufficient, the stormwater design must be revised. Beginning with the third comment resubmittal, the City may charge an additional review fee each time the stormwater design must be resubmitted. After all review comments are addressed, the applicant will be notified by the City that the stormwater design has been preliminarily

Acceptance by the City does not preclude the applicant(s)/permittee(s) from complying with all other applicable federal, state, and local regulations.

accepted. Other permits, such as a building permit, will not be issued until a Post-Construction Stormwater Permit has been issued.

4.2.2 Stormwater Design Acceptance

Step 8

Plan Acceptance

When the City has determined the stormwater design plans comply with the guidance provided in this Manual, the design plans will be accepted. Once the design plans have been accepted, the applicant shall submit the following to the City:

- Specified number of sealed design plan copies signed by a professional engineer registered in the state of Missouri . The number of copies may be dependent upon the project.
- Fiscal security must also be submitted at this time.

Final acceptance will occur when the design plans are signed by the City and fiscal security has been submitted.

4.2.3 Fiscal Security

The City requires applicants to post fiscal security for any project needs a Post-Construction Stormwater Permit. This allows the City to complete permanent stormwater BMPs if the permittee does not fulfill the requirements of the permit within the timeframe specified by the City. The amount of fiscal security required for a Post-Construction Stormwater Permit is based on the probable cost of installing the permanent stormwater BMPs required on a site.

The City accepts an Irrevocable Letter of Credit (ILOC) to allow for the security to be held until final close-out acceptance, which is when the Stormwater Operating Permit is issued. If the ILOC expires prior to the final close-out acceptance, the letter of credit needs to be extended a minimum of 14 days prior to the expiration date. The City will draw upon the fiscal security if it is not extended prior to the 14-day deadline.

4.3 Issuance of Post-Construction Stormwater Permit

Step 9

Post-Construction Stormwater Permit Issuance

Once all plans, designs, and fiscal security have been received and accepted by the City, the City will issue the Post-Construction Stormwater Permit, which is valid for one year from the date the permit is signed by the City. If additional time is needed, the permittee(s) should contact the City and start the renewal process at least 14 days prior to the expiration date of the original permit. Permittee(s) must have a valid Post-Construction Stormwater Permit at all times.

5.0 Construction and Project Close-Out

Steps in Section 5.0:

Step 10 – Construct Permanent BMPs:

Permanent BMPs must be constructed in accordance with the accepted stormwater designs, requirements of Ch. 34, Art. IV of the City's Code of Ordinances, and guidance provided in this Manual (Section 5.1.1).

Step 11 – Post-Construction Stormwater Close-Out Inspection:

- After the site is stabilized (including final vegetation), contact the City to schedule the post-construction stormwater close-out inspection.
- A representative of the Permittee shall attend the post-construction BMP inspection.
- The permittee must correct any deficiencies the City identifies and contact the City to schedule a follow-up inspection (Sections 5.1.2 and 5.1.3).

Step 12 – Stormwater Operating Permit Issuance:

When the City has found the stormwater BMP(s) have been constructed in accordance with the requirements of Ch. 34, Art. IV of the City's Code of Ordinances and guidance provided in this Manual, the City shall give the Owner a signed post-construction stormwater close-out inspection form and transition the Post-Construction Stormwater Permit to a Stormwater Operating Permit (Section 5.2).

Step 13 – Fiscal Security Release:

The permittee will submit a Fiscal Security Release Form to the City to be signed and returned (Section 5.2).

5.1 Post-Construction Stormwater Close-Out Inspection

5.1.1 Preparing for Inspection

Step 10

Construct Permanent BMPs

In preparation for the post-construction stormwater close-out inspection, before the permittee(s) leave the site, the following shall be completed:

- All permanent stormwater BMPs shall be constructed as shown on the design plans in accordance with the guidance provided in this Manual;
- All disturbed areas should be seeded and mulched, or otherwise stabilized, per the City's land disturbance criteria.

Failure to properly complete these items may result in a hold being placed on the issuance of any new building permits or the closing of existing building permits and allowing occupancy.

Once all items are complete, the permittee shall contact the City to schedule the post-construction stormwater close-out inspection. The inspection should be scheduled after the BMPs have been constructed to obtain the first stormwater operating permit. The Post-Construction Stormwater Permit expires once the BMP construction is complete.

5.1.2 Inspection Attendees and Agenda

Step 11

Post-Construction Stormwater Close-Out Inspection

The permittee(s) representative(s) shall attend the post-construction stormwater close-out inspection with the City Inspector.

The following agenda items will be addressed at the post-construction stormwater close-out inspection:

- **Permanent stormwater BMP inspection.** All final BMPs will be inspected to determine general agreement with the design plans and correct installation.
- **Soil stabilization.** The City will confirm steps have been taken to stabilize the soil (seeding, mulching, erosion control blankets, and riprap). This needs to be done to protect against erosion and prevent sediment from being washed downstream. Even after the stormwater measures are approved and an operating permit is obtained, vegetation must still be established as required by the *Land Disturbance Manual* for all areas of the site.

5.1.3 Corrections to Site

The permittee(s) shall make any corrections to the site that the City Inspector has requested. If the corrections are substantial, the City Inspector may require a follow-up inspection prior to issuing acceptance and the Stormwater Operating Permit.

5.2 Stormwater Operating Permit Issuance

Step 12

Stormwater Operating Permit Issuance

After confirming the permanent stormwater BMP(s) have been constructed in accordance with this Manual, the City shall give the Owner a signed post-construction stormwater close-out inspection form. The inspection form allows the issuance of the Stormwater Operating Permit for one year. Re-inspection must be performed each year before the expiration of the Stormwater Operating Permit. The owner must keep the inspection forms on file.

Step 13

Fiscal Security Release

After construction of the permanent stormwater BMPs has been approved, the City will release the fiscal security.

6.0 Stormwater Operating Permit Compliance

Steps in Section 6.0:

Step 14 – Stormwater Operating Permit Compliance:

This allows the City to confirm compliance with the Stormwater Operating Permit (Section 6.1).

Step 15 – Annual Stormwater Operating Inspection:

- Once a year, the Owner's representative will contact the City to schedule a stormwater operating inspection.
- The Owner's representative shall attend each stormwater operating inspection.
- If deficiencies are noted by the City, the Owner must provide a plan and schedule to correct the deficiencies to the City, within 2 weeks of the inspection.
 - The Owner must correct deficiencies requested by the City as soon as practicable, and no later than 3 months after the inspection, unless specifically arranged with the City. Once deficiencies are corrected, the Owner should contact the City to schedule a follow-up inspection.
 - If deficiencies are not corrected within 3 months and no alternative arrangements have been made with the City, deficiencies will be corrected by the City at the Owner's expense (Section 6.1) and the Stormwater Operating Permit may be revoked

Step 16 – Annual Stormwater Operating Permit Renewal:

If the Owner is in compliance with the Stormwater Operating Permit, the City shall renew the Permit after completing the annual stormwater operating inspection (Section 6.1). If the Owner is not in compliance with the Stormwater Operating Permit, the City may revoke the Permit. If the City revokes the Permit, the Owner will need to pay the permit application fee for a new permit.

A stormwater operating permit must be renewed each year after a re-inspection.

6.1 Continued Maintenance and Annual Inspections

Step 14

Stormwater Operating Permit Compliance

The Stormwater Operating Permit requires all permanent stormwater BMPs to be maintained according to the maintenance plan developed during the design phase.

Step 15**Annual Stormwater Operating Permit Inspection**

In order for annual renewal of the Stormwater Operating Permit, the City will perform an inspection each year in order to verify that all permanent stormwater BMPs are being properly maintained (Appendix E). The City has the right to perform an inspection in less than one year if the City believes it is needed due to complaints, known problems, or other concerns. It is the responsibility of the owner to contact the City each year to schedule a re-inspection before the expiration of the stormwater operating permit. A representative of the Owner shall attend each stormwater operating permit inspection.

If adequate maintenance is not being performed, the inspector will list the items that require action before the permit can be renewed and provide the list of deficiencies through written communication to the Owner. Within two weeks of the inspection, the Owner must provide a plan and schedule to fix the deficiencies. The Owner must take the required actions to fix the deficiencies as soon as practicable, and no later than, 3 months after the inspection. Once deficiencies are corrected, the Owner shall contact the City to schedule a follow-up inspection. If deficiencies are not corrected within 3 months, the City will correct the deficiencies at the Owner's expense. The City may grant additional time to fix the deficiencies due to special circumstances.

Step 16**Annual Stormwater Operating Permit Renewal**

If the inspector approves the condition of the permanent stormwater BMPs, the operating permit will be renewed.

7.0 Glossary of Terms

Following is a glossary of some of the terms used in this Manual.

Applicant(s) refers to the owner and engineer who complete and sign the Post-Construction Stormwater Permit application.

Best Management Practice (BMP) refers in this Manual to a measure implemented to control stormwater.

Common Plan of Development or Sale refers to a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one common plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur on a specific plot.

Construction refers to the implementation of a proposed plan of improvements by a contractor that may include excavating, site grading, utility work, paving, building, and other activities that may contribute to the disturbance of land and elevated levels of erosion and sediment.

Design Engineer refers to the professional engineer responsible for the development of the SWPPP.

Development refers to the process of creating new residential, commercial, office, or other land uses through the process of construction.

Erosion is the process by which the land surface is worn away by the action of wind, water, ice, and gravity.

Fiscal Security refers to an irrevocable letter of credit that an owner submits to the City of Moberly to be held as security during the construction process and to be drawn upon in the case of nonperformance on the part of the permittee(s).

Inspector refers to the City of Moberly representative who visits sites to check for compliance with the Post- Construction Stormwater Permit.

Moberly Public Utilities or City Utilities refers to the department within the City of Moberly that has the authority and responsibility to manage, enforce, and regulate stream buffer activities within the City of Moberly.

Permittee(s) refers to the owner and engineer who obtain a Post-Construction Stormwater Permit.

Post-Construction Stormwater Permit refers to the permit obtained from the City of Moberly prior to commencement of land-disturbing activities as defined in this Manual.

Post-Construction Stormwater Permit Process refers to the process applicants proceed through to obtain a Post-Construction Stormwater Permit from the City of Moberly.

Post-Construction Stormwater Program refers to the program developed and administered by the City of Moberly to regulate the quantity and quality of stormwater within the unincorporated limits of the City of Moberly.

Pre-Development Condition refers to the natural condition of a site before development occurred.

Professional Engineer refers to an individual currently registered with the Missouri State Board of Registration as a professional engineer, practicing engineering in accordance with state law.

Sediment Basin refers to an impoundment that captures sediment-laden runoff and releases it slowly, providing prolonged settling times to capture coarse and fine-grained soil particles.

Stormwater means runoff generated as a result of a precipitation event.

Stormwater Pollution Prevention Plan (SWPPP) refers to the complete package of required information submitted to the City of Moberly for review and acceptance for a land disturbance permit which include drawings, Land Disturbance report, Report Checklist, and Option of Probable Cost Example Worksheet.

8.0 Revisions

This section is intended to provide a location for any revisions and updates to the information in this Manual that may be made available by the City prior to the complete republishing of the Manual.

Any revisions will be dated and will refer back to the section modified. It is suggested that revisions be kept in chronological order within this section.

Date	Section	Revision
December 2021	3.7.3, 6.0	Revised text for requirements of the new Comprehensive MS4 Permit, effective October 1, 2021.

9.0 References

- Columbia, Missouri. Stormwater Management & Water Quality Manual. February 1, 2009. Douglas County, Colorado. Grading, Erosion, and Sediment Control (GESD) Manual. March 2004.
- Gribbin, John E. Introduction to Hydraulics and Hydrology with Applications for Stormwater Management. 3rd Edition. Thomson Delmar Learning. Clifton Park, NY. 2007.
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- United States Environmental Protection Agency. National Menu of Stormwater Best Management Practices. 9 Jan. 2008. <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index>. Cfm.
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Appendices

Appendix A

Required Checklist and Cost Estimate for a Fee in Lieu of Permanent BMP(s)



Required Checklist and Cost Estimate for a Fee in Lieu of Permanent BMP(s)

Item Category	Item Description	Quantity	Unit Measurement	Unit Price	Total Price	Notes <i>Include estimate justification and relevant details/assumptions</i>	Approval/Comments (City Use Only):
General Construction	Engineering and Design			\$	\$		
	Permitting			\$	\$		
	Mobilization			\$	\$		
	Erosion Control			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal							
Storm Sewer - Junction Box	Junction Box			\$	\$		
	Pipe			\$	\$		
	End Section			\$	\$		
	Riprap			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal							
Detention or Infiltration BMP ⁽¹⁾	Riprap			\$	\$		
	Excavation			\$	\$		
	Topsoil			\$	\$		
	Grading			\$	\$		
	Seeding			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal					\$		
Total Estimate, with Contingency					\$		
Contingency (10% of Total Fee)					\$		
Total Estimate, with Contingency					\$		

(1) To be determined by the project owner, engineer, and City staff pending site conditions and stormwater management needs.

Required Checklist and Cost Estimate for a Fee in Lieu of Permanent BMP(s)



Item Category	Item Description	Quantity	Unit Measurement	Unit Price	Total Price	Notes <i>Include estimate justification and relevant details/assumptions</i>	Approval/Comments (City Use Only):
General Construction	Engineering and Design			\$	\$		
	Permitting			\$	\$		
	Mobilization			\$	\$		
	Erosion Control			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal							
Storm Sewer - Junction Box	Junction Box			\$	\$		
	Pipe			\$	\$		
	End Section			\$	\$		
	Riprap			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal							
Detention or Infiltration BMP ⁽¹⁾	Riprap			\$	\$		
	Excavation			\$	\$		
	Topsoil			\$	\$		
	Grading			\$	\$		
	Seeding			\$	\$		
	Other, as needed ⁽¹⁾			\$	\$		
Subtotal				\$	\$		
Total Estimate, with Contingency				\$	\$		
Contingency (10% of Total Fee)				\$	\$		
Total Estimate, with Contingency				\$	\$		

(1) To be determined by the project owner, engineer, and City staff pending site conditions and stormwater management needs.

Appendix B

Contact List

Contact Information

(Information is subject to change)

City of Moberly Public Utilities Department

101 West Reed Street

Moberly, MO 65270

Phone: (660) 269-8705

Missouri Department of Natural Resources

Northeast Regional Office

1709 Prospect Drive

Macon, MO 63552

Phone: (660) 385-8000

Fax: (660) 385-8090

U.S. Army Corps of Engineers – Kansas City District

Missouri State Regulatory Office

221 Bolivar Street, Suite #103

Jefferson City, MO 65101

Phone: (573) 634-2248

Fax: (573) 634-7960

Appendix C

Post-Construction Stormwater Permit Application

STORMWATER PERMIT APPLICATION MOBERLY, MO

PROPERTY OWNER		CONTRACTOR	
Name:		Name:	
Address:		Address:	
Contact Name:	Phone:	Contact Name:	Phone:
ADDITIONAL SIGNATORY		ADDITIONAL SIGNATORY	
Name:		Name:	
Title:		Title:	
Project Role:		Project Role:	
Address:		Address:	
Contact Name:	Phone:	Contact Name:	Phone:
Project Name:			
Location:			
Acres Disturbed:			
Stormwater Design Description (also attach plans):			
Stormwater Volume Treated by Design:			
<p>By signing below, all applicants hereby apply for a City of Moberly Stormwater Permit for the aforementioned property and certify as follows:</p> <ol style="list-style-type: none"> 1. To the best of my/our knowledge, the information provided herein is correct; 2. Stormwater Design Plans and Calculations for the site were prepared and submitted in accordance with the Post-Construction Stormwater Manual, all local, state, and federal permits; and 3. I certify I am legally authorized to sign on behalf of and bind the above-listed entity. <p>The Stormwater Permit is granted with the explicit understanding that it is the Permittee's responsibility to:</p> <ol style="list-style-type: none"> 1. Allow the City of Moberly unrestricted access to the site to conduct regular site inspections; 2. Comply with all requirements of the Post-Construction Stormwater Manual; and 3. Comply with all local, state, and federal requirements. 			
PROPERTY OWNER		ENGINEER OF RECORD	
Signature:		Signature:	
Print Name:		Print Name:	
Date:		Date:	

ADDITIONAL SIGNATORY		ADDITIONAL SIGNATORY		WS #3.	
Signature:		Signature:			
Print Name:		Print Name:			
Title:		Title:			
Date:		Date:			
PERMIT APPROVAL (CITY USE ONLY)					
Base Fee: \$250.00	Additional cost: \$25 x _____ disturbed acres = \$_____	Base Fee:	\$_____	Renewal <input type="checkbox"/>	\$100
		Permit Fee:	\$_____	Transfer <input type="checkbox"/>	\$100
		Total Fee:	\$_____		
Date Paid:		Amount:	<input type="checkbox"/> Check (list check # _____) <input type="checkbox"/> Cash		
Engineer's Estimate \$_____ x 1.15 = Total Security \$_____			Security Received: <input type="checkbox"/> Y <input type="checkbox"/> N		
Date Application Accepted:					
STAFF APPROVAL		STAFF APPROVAL			
Signature:		Signature:			
Print Name:		Print Name:			
Title:		Title:			
Date:		Date:			

Appendix D

Required Checklist for Acceptance of Permanent BMPs

Required Checklist for Acceptance of Permanent BMPs



1. Design Plans (submit 24" x 36" plan sheets via hard copy)

- | | | |
|------------------------------|-----------------------------|---|
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 1. Site layout that shows the location of each BMP |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 2. BMP details, as appropriate: |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | a. Plan view(s) |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | b. Profile view(s) |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | c. Inlet detail(s) |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | d. Outlet structure detail(s) |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | e. Hydraulic profile(s) for features such as emergency spillways, pretreatment system details, etc. |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | f. Additional design feature(s), if applicable |

2. Calculations

- | | | |
|------------------------------|-----------------------------|---|
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 1. Hydrologic calculations performed to determine pre- and post-development stormwater runoff |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 2. Outlet structure and spillway rating curve(s), if applicable |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 3. Modeling methods, inputs, and final results, if applicable |

3. Maintenance Plan (one for each permanent stormwater BMP)

- | | | |
|------------------------------|-----------------------------|---|
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 1. Maintenance required for continued operation of the BMP after construction |
| <input type="checkbox"/> yes | <input type="checkbox"/> no | 2. Maintenance agreements between BMP owner and other parties, if applicable |

Appendix E

City Inspection Form

STORMWATER OPERATING PERMIT AND INSPECTION FORM

MOBERLY, MO



WS #3.

Project:	Date of Inspection:
Contractor:	Report No:
Owner / Permittee:	Permit No:

Others Present (List title; print and sign name):

1.
2.
3.

Plans on site:

Type of Inspection:

SW Description	Maintenance Item	Maintenance Required?			If yes, describe:	Date Items to be Completed <small>(Write NA where applicable)</small>	Date Complete
		Yes	No	NA			
	Constructed according to plans						
	Inlets/outlets						
	Emergency spillway						
	Vegetation						
	Trash/debris						
	General maintenance						
	Other comments						
SW Description	Maintenance Item	Maintenance Required?			If yes, describe:	Date Items to be Completed <small>(Write NA where applicable)</small>	Date Complete
		Yes	No	NA			
	Constructed according to plans						
	Inlets/outlets						
	Emergency spillway						
	Vegetation						
	Trash/debris						
	General maintenance						
	Other comments						
SW Description	Maintenance Item	Maintenance Required?			If yes, describe:	Date Items to be Completed <small>(Write NA where applicable)</small>	Date Complete
		Yes	No	NA			
	Constructed according to plans						
	Inlets/outlets						
	Emergency spillway						
	Vegetation						
	Trash/debris						
	General maintenance						
	Other comments						

Stormwater Operating Permit – Initial Inspection? Yes ☐ No ☐

If yes:

- Yes ☐ No ☐ Address areas that need action and schedule a re-inspection?
- Yes ☐ No ☐ Stormwater work is approved. The Stormwater Operating Permit is valid for one year from date of the inspection. In order to renew, schedule an inspection with the City of Moberly before the one year period ends.

Stormwater Operating Permit – Annual Inspection? Yes ☐ No ☐

If yes:

- Yes ☐ No ☐ Address areas that need action and schedule a re-inspection?
- Yes ☐ No ☐ Stormwater work is approved. The Stormwater Operating Permit is renewed for one year. In order to renew, schedule an inspection with the City of Moberly before the one year period ends.

By signing below, all signatories hereby declare their presence and/or awareness the inspection dated on this form occurred:

PROPERTY OWNER	ADDITIONAL SIGNATORY
Signature:	Signature:
Print Name:	Print Name:
Date:	Title:
	Date:
STAFF APPROVAL	STAFF APPROVAL
Signature:	Signature:
Print Name:	Print Name:
Title:	Title:
Date:	Date:

Land Disturbance Field Manual

Prepared for
City of Moberly, Missouri

December 2021



Land Disturbance Field Manual

December 2021

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Contact information:

For City requirements, use this manual and contact the City of Moberly Public Utilities Department:

Stormwater Coordinator or Stormwater Inspectors City Hall
101 West Reed Moberly, MO 65270
Phone: (660) 263-4420

For State requirements, contact:

Missouri Department of Natural Resources Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552
Phone: (660) 385-8000
Fax: (660) 385-8090

For Federal requirements working in or near streams or wetlands, contact:

U.S. Army Corps of Engineers - Kansas City District Missouri State Regulatory Office
221 Bolivar Street, Suite #103
Jefferson City, MO 65101 Phone: (573) 634-2248
Fax: (573) 634-7960

1.0 Introduction

1.1 Land Disturbance Field Manual

This *Land Disturbance Field Manual* is designed to assist with field compliance throughout construction and close-out of the Land Disturbance Permitting Program. The Land Disturbance Permitting Program is designed to promote and enforce erosion and sediment controls during land disturbance activities on public and private construction projects within the City of Moberly (City). The City's Land Disturbance Program complies with the Federal Clean Water Act (40 CFR, 122.26) and the Missouri Department of Natural Resources State Operating Permit No. MO-R040030 for Regulated Small Municipal Separate Storm Sewer Systems (MS4).

The *Land Disturbance Field Manual* is meant to be used in conjunction with the City's *Land Disturbance Manual* and, when applicable, *Post-Construction Stormwater Manual*. The *Land Disturbance Field Manual* is authorized by the City's Land Disturbance Ordinance (Chapter 34, Article III of the City's Code of Ordinances) and enforced by the City's Public Utilities Department. The manual may be revised at any time.

1.2 Land Disturbance Field Process Overview

The purpose of the *Land Disturbance Field Manual* is to assist Land Disturbance permittees with compliance during the construction and construction close-out phases of the Land Disturbance Process. Steps 10a-18 of Table 1-1 provide a brief overview to the steps applicable to the construction and construction close-out phases of the land disturbance process. The following sections in this manual provide general construction practices and inspection procedures applicable to the construction and construction close-out phases. For more detail on the process, refer to the City's *Land Disturbance Manual* and *Post-Construction Manual*.

Table 1-1 Land Disturbance Process Overview

Phase	Step No.	Land Disturbance (LD) Step Description	Land Disturbance Manual Section No.
Pre-Application	1	Applicability: Confirm that a Land Disturbance Permit is required.	1.2
	2	Pre-Submittal Meeting: <ul style="list-style-type: none"> Contact the City of Moberly Public Utilities Department (City) to schedule a pre-submittal meeting. Meet with City to discuss applicable permits and stormwater pollution prevention plan (SWPPP) requirements. 	2.1
	3	Prepare SWPPP: Prepare a SWPPP in accordance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> .	3.1 - 3.3
Application	4	Submit SWPPP and Land Disturbance Application: Submit Land Disturbance Application, SWPPP, and other required documents to City for review. An application fee shall be included with this submittal.	4.1
	5	SWPPP Review – Completeness Check: The City shall conduct a pre-review of SWPPP to check the basic level of completeness based on compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> . If deemed incomplete, the submittal shall be returned to the Applicant for modification and resubmission.	4.2
	6	SWPPP Review – Detailed Review: Once the submittal is deemed complete, the City shall conduct a detailed review of the SWPPP and supporting documents for compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> . If deficiencies are noted, the City shall provide written comments to the Applicant; such comments may include questions, requests for additional information, and/or requests for modifications to the SWPPP in order to comply with applicable requirements. If such comments are received, the Applicant shall address each comment and resubmit revised documents along with a summary of how each comment was addressed.	
	7	SWPPP Acceptance: <ul style="list-style-type: none"> When City has found the SWPPP to meet the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i>, the SWPPP will be accepted. The Applicant shall post the required fiscal security and submit at least 3 copies of the SWPPP to the City to be signed and returned. 	4.2

Phase	Step No.	Land Disturbance (LD) Step Description	Land Disturbance Manual Section No.
Pre-Construction	8	On-Site Pre-Construction Meeting: <ul style="list-style-type: none"> • Contact the City to schedule an on-site pre-construction meeting. • Prepare for and attend on-site pre-construction meeting. Required attendees at this meeting shall include, but are not limited to, the Applicant's Land Disturbance Manager. 	4.3
	9	Land Disturbance Permit Issuance: If <i>Applicant</i> is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> , the City shall issue a Land Disturbance Permit.	4.4
Construction	10a	Land Disturbance Compliance: Ensure compliance with requirements of the Land Disturbance Permit.	5.1
	10b	Install BMPs: Ensure installation of temporary BMPs prior to land disturbance or construction activities and permanent BMPs at the appropriate times in accordance with the accepted SWPPP and stormwater designs, requirements of Ch. 34, Art. III of the City's Code of Ordinances, and guidance provided in the <i>Land Disturbance Manual</i> and the <i>Post-Construction Stormwater Manual</i> .	5.3
	10c	Land Disturbance Inspections: <ul style="list-style-type: none"> • Contact the City to schedule applicable land disturbance inspections. • Permittee's Land Disturbance Manager shall attend scheduled City land disturbance inspections. • Correct deficiencies as requested by the City. 	5.4

Phase	Step No.	Land Disturbance (LD) Step Description	Land Disturbance Manual Section No.
Construction Close-Out	11	Initial Close-Out Inspection: <ul style="list-style-type: none"> • Prepare site for initial close-out inspection. • Contact the City to schedule initial close-out inspection. • Permittee's Land Disturbance Manager shall attend initial close-out inspection. • Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection. 	6.1
	12	Initial Close-Out Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> , City shall issue initial close-out acceptance.	6.1
	13	Revegetation: <ul style="list-style-type: none"> • Perform monthly inspections during the revegetation process. • Correct deficiencies in on-site BMPs and control weeds as deemed necessary during inspections or as requested by City. 	6.1.4
	14	Vegetation Acceptance Inspection: <ul style="list-style-type: none"> • Contact the City to schedule vegetation acceptance inspection when vegetative growth has reached the required coverage. • Permittee's Land Disturbance Manager shall attend vegetation acceptance inspection. • Correct deficiencies as requested by the City and, if requested, contact the City to schedule a follow-up inspection. 	6.1.4
	15	Vegetation Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> , City shall issue vegetation acceptance.	6.1.4
	16	Final Close-Out Inspection: <ul style="list-style-type: none"> • Prepare site for final close-out inspection, including removal of temporary BMPs. • Contact the City to schedule the final close-out inspection. • Permittee's Land Disturbance Manager shall attend final close-out inspection. • Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection. 	6.1.6
	17	Final Close-Out Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in the <i>Land Disturbance Manual</i> , City shall issue final close-out acceptance.	6.1.6
	18	Fiscal Security Release: Submit a Fiscal Security Release Form to the City to be signed and returned.	6.3
Post-Construction	19	Stormwater Operating Permit Compliance: Ensure compliance with the Stormwater Operating Permit as applicable.	Refer to the <i>Post-Construction Stormwater Manual</i>

2.0 General Construction Practices

2.1 Documents to Remain On Site

Documents to remain on site throughout construction¹ include:

- A copy of the SWPPP, including all amendments;
- Inspection records;
- Results of any monitoring or analysis; and
- All project permits.

2.2 Land Disturbance Best Management Practices

Prior to any Land Disturbance activity at the project site, the following BMPs shall be employed:

- Delineate (flag, stake, etc.) "Do Not Disturb" areas, including, but not limited to, limits of construction, environmentally sensitive areas, and buffers (refer to Sections 3.3.1 and 3.3.2 of the *Land Disturbance Manual*);
- Install all BMPs necessary to prevent soil erosion (refer to Sections 3.3.4, 3.3.5, and 3.3.8 of the *Land Disturbance Manual*);
- Install sediment control BMPs along site perimeters that will receive pollutant discharges (refer to Sections 3.3.6 and 3.3.7 of the *Land Disturbance Manual*);
- Designate a stabilized staging area (away from drainage ways and storm sewer inlets) that will include portable toilets;
- Install a vehicle-trackout BMP at all construction entrances, and, where applicable, install storm drain BMPs (refer to Sections 3.3.9 and 3.3.10 of the *Land Disturbance Manual*).

General construction BMPs shall include, but are not limited to:

- Implement effective sediment perimeter controls and effective erosion controls, as applicable (refer to Section 3.0 of the *Land Disturbance Manual*);
- Stabilize soils in a timely manner (refer to Section 3.3.5 of the *Land Disturbance Manual*);
- Protect steep slopes (refer to Section 3.3.8 of the *Land Disturbance Manual*);

¹ Adapted from the Records section in the Missouri State Land Disturbance Permit (No. MO-RA00000).

- Properly store, handle, apply, and dispose of potential pollutants (refer to Section 3.3.10 of the *Land Disturbance Manual*);
- Do not wash equipment and machinery on site;
- Provide a concrete washout area in the stabilized staging area, when applicable; and
- Provide solid and hazardous waste management, including proper disposal.

Specifically, for pesticides, storage areas shall be protected from the elements, warning labels and signage shall be properly displayed, and properly disposed of through a licensed firm or facility. Petroleum products require more stringent guidelines that include:

- Protect product from the elements;
- Line the storage area with plastic sheeting or similar material;
- Create an impervious berm around the perimeter equal to the largest container's capacity;
- Clearly label all products;
- Store tanks off the ground;
- Securely fasten lids;
- Properly dispose of oil and oily wastes, such as cans, rags, etc.;
- Do not mix used oil for recycling with degreasers, solvents, antifreeze, or brake fluid; and
- Fuel and maintain vehicles in stabilized staging areas.

2.3 Spill Response

2.3.1 Spill Response Procedures

All hazardous wastes that are transported, stored, or used for maintenance, cleaning, or repair shall be managed according to the provisions of the Missouri Hazardous Waste Laws and Regulations. Spill response procedures shall be posted in a conspicuous place, and persons trained in spill handling shall be on site and/or on call at all times. Materials for cleaning up spills should be kept on site and made easily available. Spills should be cleaned up immediately, and the contaminated material should be properly disposed of.

2.3.2 Spill Reporting

It is required by state law that petroleum product spills in excess of 50 gallons be reported to the Missouri Department of Natural Resources. Spills shall be reported to the following number:

Missouri Department of Natural Resources
(573) 634-2436

Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area like a road ditch that drains into one of the above. If applicable, report oil releases to:

National Response Center
(800) 424-8802

In the event of a spill that is reported to the state or federal government, the City Public Utility Department and City Fire Department shall also be notified:

City Public Utility Department
(660) 263-4420

City of Moberly Fire Department
(660) 269-8705

Failure to report and clean up any spill shall result in issuance of a Stop Work Order (Section 3.5). Spills released onto soil should be dug up and properly disposed of, while spills on pavement should be absorbed with sawdust, kitty litter, or another product designed for that purpose.

3.0 Inspections and Violations

3.1 Land Disturbance Inspections

During the construction phase, erosion and sediment controls will be inspected regularly by the Land Disturbance Manager to consider the following:

- Overall effectiveness of the controls for reducing erosion and trapping sediment on the site; and
- Proper installation and maintenance of the controls.

The site must be inspected according to the following schedules:

- At least once per 14 calendar days; and
- Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour rainfall event (2.94 inches) has ceased.

If problems are found on the site, they must be corrected within 48 hours. It is recommended that inspections are performed by Wednesday each week so that problems can be fixed by Friday of the same week.

Appendix A contains the Land Disturbance Inspection form. All inspection forms must remain on site with the SWPPP.

3.2 Mandatory City Inspections

The permittee(s) shall contact the City to schedule the following mandatory inspections:

- Pre-construction meeting/inspection of initial BMPs;
- Topsoil inspection after topsoil is stripped and stockpiled;
- Anytime during construction when a new Land Disturbance Manager or Alternate Land Disturbance Manager is chosen;
- Initial close-out inspection;
- Vegetation acceptance inspection;
- Final close-out inspection;
- Two years after final inspection, or when grass has reached the required vegetative cover in accordance with Section 6 of the *Land Disturbance Manual*, and prior to removing on-site BMPs; and
- For staged and phased SWPPPs where more than 40 acres need to be disturbed, and where work occurs in multiple grading phases.

Refer to the *Land Disturbance Manual* for detail regarding each inspection. All inspection requests need to be called into the City by 3:30 pm the day before the inspection, with the exception of the pre-construction meeting. The City requires notice at least 3 business days prior to the inspection for the pre-construction meeting.

3.3 Quality Assurance Inspections

The City will perform quality assurance by performing random inspections in addition to mandatory City inspections to ensure the Land Disturbance Manager is performing the required quality control inspections. During these quality assurance inspections, the City Inspector will also perform his/her own inspection of the Land Disturbance BMPs. If sediment appears to be leaving the site; or the City takes stormwater samples when less than 3.51 inches of rainfall has fallen in a 24-hour period reading greater than 280 nephelometric turbidity units (NTUs), the City will require the Land Disturbance Manager to request a revision to the SWPPP by the design engineer.

3.4 Re-Inspection Fees

To offset the cost of additional inspections on noncompliant sites, the City requires that re-inspection fees be paid in person at the City Public Utilities Department office prior to receiving subsequent inspections. Re-inspection fees shall be charged for all projects that are deficient due to the following:

- Permittee(s) fails to properly install all initial BMPs prior to the scheduled pre-construction meeting;
- Required attendees fail to attend the scheduled pre-construction meeting;
- Permittee(s) fails to have the SWPPP on site during the pre-construction meeting;
- Permittee(s) receives a Stop Work Order (fee consists of new permit fee in this case);
- Permittee(s) fails to obtain vegetation acceptance from the City prior to requesting a final release of fiscal security;
- Permittee(s) removes any BMPs prior to receiving the City's authorization; and
- Land Disturbance Inspector finds violations of Land Disturbance Permit requirements during routine inspections.
- Failure to cancel any inspection before 3:30 pm the day before a scheduled inspection, in the event that a site is not ready for an inspection.

3.5 Violations

Failure to comply with any term, condition, limit, deadline or other provision of the Land Disturbance Permit or failure to obtain a Land Disturbance Permit, constitutes a violation of the City's Land Disturbance Ordinance and may constitute a violation of state and federal laws as well.

Level I Violations have the most severe impact on people and the environment while Level III Violations have the least severe impact.

3.5.1 Level I Violation

Level I Violations result in an immediate issuance of a Stop Work Order. Example Level I Violations include the following:

- Clearing, grubbing, or grading without a Land Disturbance Permit;
- Failure to schedule a pre-construction meeting;
- Failure to be able to contact the Land Disturbance Manager or Alternate Land Disturbance Manager during any level of violation;
- Failure to restrict operations to approved limits of construction;
- Failure to clean up material tracked onto roadways and adjacent paved areas;
- Exporting material to, or importing material from, a non-permitted site;
- Exporting/importing soil material without a variance;
- Failure to follow an approved phasing plan; and/or
- Failure to correct Level II Violations per the directives of the Land Disturbance Inspector.

Stop Work Orders. The City is authorized to order work to be stopped on any project that disturbs the land and is not in compliance with the requirements of the Land Disturbance Permit. The posted Stop Work Order will specify which corrective actions need to be taken before land disturbance activities can continue. Safety-related items (e.g., backfilling of holes and trenches) as well as corrective actions may be completed; however, the permittee(s) shall inform the Land Disturbance Inspector of such activities.

When placed on a permitted site, a Stop Work Order will either suspend or revoke the Land Disturbance Permit for that site. If the permit is suspended, the permittee(s) must perform the tasks stated in the Stop Work Order and obtain a signed Stop Work Order Release Form from the City before land disturbance activities can continue. An inspection may be required for the City to determine if sufficient corrective actions have been taken. If the permit is revoked, the following steps must be taken:

- Correct the deficient practices that caused the Stop Work Order;
- Reapply for a Land Disturbance Permit and pay another permit fee;
- Call the City to schedule a site inspection; and
- Obtain a new Land Disturbance Permit after the corrected work has been approved by a Land Disturbance Inspector.

If the property owner chooses to stop work and not renew a permit after it has been revoked, then the site topography and vegetation must be returned to its original condition within the timeframe stated in the Stop Work Order. If the site is not reestablished within the stated timeframe, it is considered a direct violation of the City Land Disturbance Code.

Any person violating any provision of the City Land Disturbance Code shall be deemed guilty of a misdemeanor and each day during which any violation of any of the provisions of this division is committed, continued, or permitted shall constitute a separate offense.

3.5.2 Level II Violations

Level II Violations are viewed by the City to pose a moderate immediate risk to the health, safety, or welfare of people and/or the environment; however, if not immediately corrected, may pose a serious risk. Remediation for Level II Violations shall commence immediately after the permittee(s) is notified of the violation(s). Example Level II Violations include the following:

- Tracking material onto roadways and adjacent paved areas;
- Failure to make required plan revisions;
- Failure to perform BMP maintenance as directed by the City Land Disturbance Inspector; and
- Failure to correct Level III Violations per the directives of the Land Disturbance Inspector.

3.5.3 Level III Violations

Level III Violations are viewed by the City to pose a low immediate risk to the health, safety, or welfare of people and/or the environment; however, if not corrected quickly, may pose a more serious risk. Level III Violations shall be corrected within 48 hours of inspection unless otherwise specified in writing by the Land Disturbance Inspector. Example Level III Violations include the following:

- Failure to provide routine maintenance for erosion and sediment controls;
- Installing non-City-accepted erosion and sediment control BMPs;
- Failure to provide temporary inlet protection within 48 hours of pouring an inlet;
- Failure to provide inlet protection within 48 hours of placement of asphalt or concrete pavement;
- Staging of equipment outside of the stabilized staging area;
- Failure to have accepted Land Disturbance Permit, SWPPP, and inspection forms on site; and
- Failure to follow BMP installation schedule in SWPPP for interim and final BMPs.

4.0 Revisions

This section is intended to provide a location for any revisions and updates to the information in this manual that may be made available by the City prior to the complete republishing the manual.

Any revisions will be dated and will refer back to the section modified. It is suggested that revisions be kept in chronological order within this section.

Date	Section	Revision
December 2021	3.1	Updated inspection frequency to match MS4 Permit effective October 1, 2021.

Appendix A

Land Disturbance Inspection Form

Land Disturbance Manager Inspection Report

Moberly, MO



Level I violations shall result in issuance of a Stop Work Order and revocation of the Land Disturbance Permit, **Level II violations** shall be corrected immediately upon receipt of this inspection form, and **Level III violations** shall be corrected within 48 hours unless otherwise directed by the City Stormwater Coordinator.

Failure to complete the Level II or Level III violations, as directed below, may result in issuance of a Level I violation and Stop Work Order. This inspection report shall be kept on site and made available to the Stormwater Coordinator upon request until final acceptance is granted.

Project:	Date of Inspection:
Contractor:	Report No:
Owner/Permittee:	Permit No:

Others Present (List title; print and sign name):

- 1.
- 2.
- 3.

Plans on site:

Weekly inspections on site:

Weekly inspections up to date:

of BMPs currently installed:

BMP Description	Maintenance Required?		Course of Action Required	Date Items to be Completed	Date Completed
	Yes	No			

Comments:

Land Disturbance Manager : _____

and/or Alternate Land Disturbance Manager : _____

Name

Signature

Land Disturbance Manual

Prepared for
City of Moberly, Missouri

December 2021



Land Disturbance Manual

December 2021

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This Manual is intended to be used as a guidance and requirements manual by developers, contractors, and professional engineers prior to construction to develop a Stormwater Pollution Prevention Plan (SWPPP) in order to receive a Land Disturbance Permit from the City of Moberly (City) and during and after construction to comply with Land Disturbance Permit requirements. The City will also use this Manual to update Land Disturbance requirements. This Manual is enforceable by City ordinance and the Clean Water Act. Once the SWPPP is accepted by the City, the permittee(s) are also advised to consult the City's *Land Disturbance Field Manual*, which focuses on providing guidance and requirements to the contractor(s) in the field during and after construction and references this Manual for further details. Applicants and permittees are also advised to consult the City's *Post-Construction Stormwater Manual* for additional guidance and requirements that may be applicable prior to, during, and after construction.

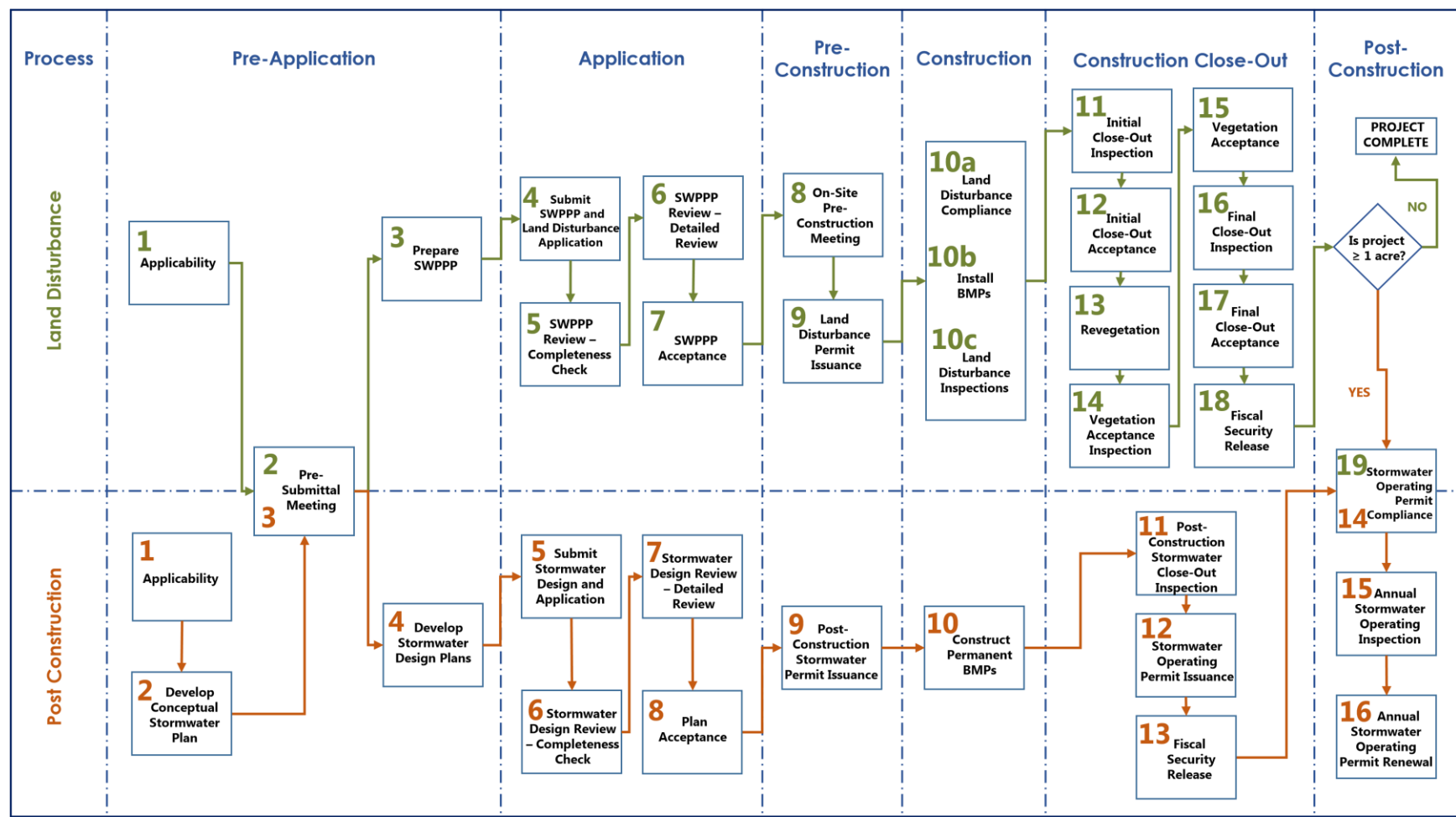
Land Disturbance Permit Process

Phase	Step No.	Land Disturbance Step Description	Section No.
Pre-Application	1	Applicability: Confirm that a Land Disturbance Permit is required.	1.2
	2	Pre-Submittal Meeting: <ul style="list-style-type: none"> Contact the City of Moberly Public Utilities Department (City) to schedule a pre-submittal meeting. Meet with City to discuss applicable permits and stormwater pollution prevention plan (SWPPP) requirements. 	2.0
	3	Prepare SWPPP: Prepare a SWPPP in accordance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Land Disturbance Manual (Manual).	3.1 - 3.3
Application	4	Submit SWPPP and Land Disturbance Application: Submit Land Disturbance Application, SWPPP, and other required documents to City for review. An application fee shall be included with this submittal.	4.1
	5	SWPPP Review – Completeness Check: The City shall conduct a pre-review of SWPPP to check the basic level of completeness based on compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual. If deemed incomplete, the submittal shall be returned to the Applicant for modification and resubmission.	4.2
	6	SWPPP Review – Detailed Review: Once the submittal is deemed complete, the City shall conduct a detailed review of the SWPPP and supporting documents for compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual. If deficiencies are noted, the City shall provide written comments to the Applicant; such comments may include questions, requests for additional information, and/or requests for modifications to the SWPPP in order to comply with applicable requirements. If such comments are received, the Applicant shall address each comment and resubmit revised documents along with a summary of how each comment was addressed.	4.2
	7	SWPPP Acceptance: <ul style="list-style-type: none"> When City has found the SWPPP to meet the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the SWPPP will be accepted. The Applicant shall post the required fiscal security and submit at least 3 copies of the SWPPP to the City to be signed and returned. 	4.2
Pre-Construction	8	On-Site Pre-Construction Meeting: <ul style="list-style-type: none"> Contact the City to schedule an on-site pre-construction meeting. Prepare for and attend on-site pre-construction meeting. Required attendees at this meeting shall include, but are not limited to, the Applicant's Land Disturbance Manager. 	4.3
	9	Land Disturbance Permit Issuance: If Applicant is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue a Land Disturbance Permit.	4.4

Phase	Step No.	Land Disturbance Step Description	Section No.
Construction	10a	Land Disturbance Compliance: Ensure compliance with requirements of the Land Disturbance Permit.	5.1
	10b	Install BMPs: Ensure installation of temporary BMPs prior to land disturbance or construction activities and permanent BMPs at the appropriate times in accordance with the accepted SWPPP and stormwater designs, requirements of Ch. 34, Art. III of the City's Code of Ordinances, and guidance provided in this Manual and the <i>Post-Construction Stormwater Manual</i> .	5.3
	10c	Land Disturbance Inspections: <ul style="list-style-type: none"> • Contact the City to schedule land disturbance inspections. • Permittee's Land Disturbance Manager shall attend scheduled City land disturbance inspections. • Correct deficiencies as requested by the City. 	5.4
Construction Close-Out	11	Initial Close-Out Inspection: <ul style="list-style-type: none"> • Prepare site for initial close-out inspection. • Contact the City to schedule initial close-out inspection. • Permittee's Land Disturbance Manager shall attend initial close-out inspection. • Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection. 	6.1
	12	Initial Close-Out Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, City shall issue initial close-out acceptance.	6.1
	13	Revegetation: <ul style="list-style-type: none"> • Perform monthly inspections during the revegetation process. • Correct deficiencies in on-site BMPs and control weeds as deemed necessary during inspections or as requested by City. 	6.1.4
	14	Vegetation Acceptance Inspection: <ul style="list-style-type: none"> • Contact the City to schedule vegetation acceptance inspection when vegetative growth has reached the required coverage. • Permittee's Land Disturbance Manager shall attend vegetation acceptance inspection. • Correct deficiencies as requested by the City and, if requested, contact the City to schedule a follow-up inspection. 	6.1.4
	15	Vegetation Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, City shall issue vegetation acceptance.	6.1.4
	16	Final Close-Out Inspection: <ul style="list-style-type: none"> • Prepare site for final close-out inspection, including removal of temporary BMPs. • Contact the City to schedule the final close-out inspection. • Permittee's Land Disturbance Manager shall attend final close-out inspection. • Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection. 	6.1.6
	17	Final Close-Out Acceptance: Once site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, City shall issue final close-out acceptance.	6.1.6
	18	Fiscal Security Release: Submit a Fiscal Security Release Form to the City to be signed and returned.	6.1.6

Phase	Step No.	Land Disturbance Step Description	Section No.
Post-Construction	19	Stormwater Operating Permit Compliance: Ensure compliance with the Stormwater Operating Permit as applicable.	Refer to the <i>Post-Construction Stormwater Manual</i>

Land Disturbance and Post-Construction Process Overview



1.0 Introduction

Step in Section 1.0:

Step 1 – Applicability:

Confirm that a Land Disturbance Permit is required. (Section 1.2)

1.1 Land Disturbance Permit Program

As required by the Missouri Department of Natural Resources (MDNR) State Operating Permit No. MO-R040030 for Regulated Small Municipal Separate Storm Sewer Systems (MS4), the City of Moberly (City) implements, and enforces a program developed to reduce pollutants in stormwater runoff from construction activities that result in land disturbance.¹ This Land Disturbance Permit Program establishes controls activities related to land disturbance and is designed to achieve the following objectives:²

- To protect the quality of local streams, lakes, and other bodies of water from the effects of increased erosion and sediment discharge;
- To protect the welfare of individuals and their property by reducing the amount of sediment that leaves land disturbance sites;
- To protect the environment and aquatic habitat of fish and other species; and
- To reduce the need for maintenance of storm sewers and ditches as well as the dredging of lakes and ponds

The City's Land Disturbance Permit Program is authorized by Chapter 34, Article III of the City's Code of Ordinances and administered and enforced by the City's Public Utilities Department through issuance of Land Disturbance Permits. Land Disturbance Permit requirements and guidance are contained within this *Land Disturbance Manual* (Manual) and the supplemental *Land Disturbance Field Manual*. The City also implements and enforces a Post-Construction Stormwater Permit Program with requirements and guidance contained within the City's *Post-Construction Stormwater Manual*.

The requirements within this Manual shall be regarded as the minimum requirements for the protection of the public health, safety, comfort, convenience, prosperity, and welfare of the residents of the City. The City reserves the right to apply more stringent criteria as it deems necessary. Additionally, the City reserves the right to change, modify, or alter these requirements at any time. The *Land Disturbance Manual* shall be construed to further its underlying purposes and intent of erosion and sediment control.

¹ Adapted from Missouri State Operating Permit (No. MO-R040030), Part 4.2.4.1.

² Adapted from the City's Code of Ordinances, Ch. 34, Art. III, Section 34-77.

Whenever a provision in this Manual or any provision in any law, ordinance, resolution, rule or regulation of any kind, contain requirements covering any of the same subject matter, whichever are more restrictive or impose higher standards shall govern.

1.2 Projects Requiring a Land Disturbance Permit

Step 1

Applicability

The City requires that a project's owner and contractor obtain a Land Disturbance Permit prior to the start of applicable land-disturbance activities within the City. All such projects within the City must obtain a Land Disturbance Permit even if the project has been approved by a state or federal agency or are covered under the state Land Disturbance Permit, Permit No. MORA00000. Examples include projects in which a 404 Permit has been obtained from the U.S. Army Corps of Engineers (USACE), which can be required when work is on or near a drainageway or wetland. See Table 2-1 for more information.

Projects that require a Land Disturbance Permit:³

- Any project that disturbs greater than or equal to one acre of land.
- Any project that disturbs less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project.^{4,5}
- Land disturbance associated with installation of utilities in excess of 1,000 linear feet.
- Land disturbance located within 100 feet of a drainageway.
- Fill or excavation of 50 or more cubic yards of material, not related to building of a detached single-family residential unit.
- Land disturbance activities less than one acre in size if the City deems it necessary to prevent sediment and erosion from occurring.

Projects not requiring a Land Disturbance Permit are still obligated to control erosion and sediment.

Projects that do not require a Land Disturbance Permit:

- Land-disturbance activity as described in 10 CSR 20-6.200.(1)(8)8, where MDNR water quality standards are not exceeded. Examples of water quality standards that shall not be exceeded are unsightly color or turbidity; standards that shall be met are no deposits of sediment, maintenance

³ Adapted from the City's Code of Ordinances, Ch. 34, Art. III, Section 34-79.

⁴ An owner or developer may have several adjacent projects that individually may not be subject to the phasing requirements. Such projects shall not be treated separately for purposes of erosion and sediment control. If the individually platted projects are adjacent to each other and grading may or may not be occurring at the same time, the City will treat the sum of the individual projects as one large project. The sum of the individual projects shall be subject to the area phasing requirements.

⁵ If a project meets criteria 1, a Post-Construction Permit must be obtained. Refer to the City's *Post-Construction Stormwater Manual* for further assistance.

of beneficial uses, no harmful effects on aquatic life, and no impairment of natural biological community.

- Agricultural stormwater discharges and irrigation return flows. Animal Feeding Operations (AFO) are not included in the agricultural exemption.

1.3 Who Obtains a Land Disturbance Permit

The Land Disturbance Permit Application is ordinarily signed by the project owner and the contractor. Before a Land Disturbance Permit is issued, the owner and the contractor are referred to as "applicants". After the permit is issued, they are referred to as "permittees".

A permittee is any person who is issued a Land Disturbance Permit by the City and that person(s) is legally responsible for complying with the Land Disturbance Permit. If a corporation applies for a permit, then a manager, officer of the corporation, or other authorized person must sign the permit as the permittee.

2.0 Pre-Submittal Meeting

Step in Section 2.0:

Step 2 – Pre-Submittal Meeting:

- Contact the City's Public Utilities Department (PUD) to schedule a pre-submittal meeting.
- Meet with the PUD to discuss applicable permits and Stormwater Pollution Prevention Plan (SWPPP) requirements.

Step 2

Pre-Submittal Meeting

Before preparing a SWPPP or other submittal documents for a construction project, a pre-submittal meeting is required, unless deemed otherwise by PUD staff. The purpose of the pre-submittal meeting is to discuss applicable Land Disturbance Permit Program requirements and confirm what related plans and permits may be required. The meeting will also include initial discussion of the general configuration of controls that may be appropriate for the site.

At minimum, the owner and the design engineer of the SWPPP shall attend the pre-submittal meeting. The owner or design engineer may contact the City to schedule the pre-submittal meeting and it may be held in conjunction with a pre-submittal meeting for the Post-Construction Stormwater Permit Program. The owner or owner's representative shall bring the following information to the meeting:

- Name, type, and location of land disturbance;
- Brief description of site topography and drainage features;
- Size of construction site and anticipated disturbed area in acres; and
- List of anticipated plans and applicable permits to accompany SWPPP.

Table 2-1 provides a list of city, state, and federal permits that may apply to Land Disturbance projects that occur within the City.

Table 2-1 Additional Potentially Applicable Permits (not all inclusive)

Unit of Government	Permit	Permit Trigger	Resources
City of Moberly	Post-Construction Stormwater Permit	<ul style="list-style-type: none"> • Development of greater than or equal to one acre of land or development of less than one acre when part of a larger common plan of development or sale that will develop a cumulative total of one or more acres over the life of the project • Any project which has differential runoff between the pre-developed and post-developed peak flows of 0.5 cfs or greater for the 2-year storm with a storm duration equal to the time of concentration for the watershed • Development activities less than an acre in size if the City deems if necessary to control the quantity/quality of post-construction stormwater runoff • Any project the City determines to have a potential impact to health, safety, and welfare of people and/or the environment regardless of the size of the project. 	<i>Post-Construction Stormwater Manual</i>
	Building Permit	Proposed development includes a structure	--
State of Missouri DNR ⁶	Land Disturbance Permit ⁷	Land disturbance activities equal to or greater than 1.0 acre	Appendix A: Contact List
	Open Burning Permit	Contact City Fire Department	--
	401 Water Quality Certification	Excavation activity associated with a dredge and fill project in "waters of the United States" that require a Federal 404 Permit from the United States Army Corps of Engineers (USACE) may also require this state certification to ensure water quality is not degraded (requirement determined during the federal 404 permitting process)	--
USACE	Section 404 Permit	Excavation or construction projects in "waters of the United States" (including streams, lakes, ponds, wetlands, etc.) may require a USACE Section 404 Permit. The level of permitting depends upon the extent of the disturbance.	Appendix A: Contact information for USACE Kansas City District
Federal Emergency Management Agency (FEMA)	Elevation Certificate or No-Rise Certificate	Proposed land disturbance impacts the regulatory floodplain	--

3.0 SWPPP Requirements

Step in Section 3.0:

Step 3 – Prepare SWPPP:

Prepare a SWPPP in accordance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual. (Sections 3.1 and 3.3)

3.1 Stormwater Pollution Prevention Plan (SWPPP)

3.1.1 Background

The applications for city and state land disturbance permits require SWPPPs to reduce erosion and sedimentation. Due to the removal of land cover, construction sites may have erosion rates anywhere from 3 to 100 times that of normal croplands. Erosion is a naturally occurring process, and therefore, almost impossible to entirely prevent on a construction site. For this reason, an effective SWPPP shall contain measures that seek to prevent erosion before it begins, as well as measures that trap sediment once it has begun to erode. Section 3.0 of this Manual provides best management practices (BMPs) to limit erosion and sedimentation at construction sites.

3.1.2 SWPPP Preparation

SWPPPs prepared in accordance with Section 3.0 of this Manual will additionally meet state requirements. SWPPPs are required to be prepared by, or under the responsible charge of, and signed and stamped by, a professional engineer registered in Missouri. Within this Manual, the professional engineer is referred to as the design engineer. Responsibilities of the design engineer include:

- Attend pre-submittal and on-site pre-construction meetings;
- Prepare the SWPPP in accordance to state and City requirements outlined in this Manual using professional knowledge and judgement; and
- Notify the City of any project safety hazards or concerns and recommend mitigation strategies.

3.1.3 Staged and Phased SWPPPs

Grading operations may not take place over the whole site at once. Instead, the site may be divided into separate grading phases each disturbing the smallest area possible while performing an activity. During

⁶ This is not to be considered an exhaustive or current list; therefore, applicants are advised to contact the state.

⁷ The state requires a SWPPP that is fulfilled by the development of the City SWPPP, requirements for updating SWPPPs, performing site inspections, and keeping an inspection report log.

construction, each grading phase shall be approved by the Land Disturbance Inspector. Additional information on drawing requirements for these stages is provided in Section 3.3.

3.2 General SWPPP Requirements

Step 3

Prepare SWPPP

As previously mentioned, the purpose of the SWPPP is to ensure the design, implementation, and management of BMPs to prevent erosion and sedimentation associated with land disturbance. To meet both the City and MDNR SWPPP⁸ requirements, the SWPPP must:

- List and describe all outfalls, including discharge flow type (i.e., pipe or sheet flow) and location of the site and outfalls to receiving waterbodies;
- Incorporate the required practices described in this chapter;
- Incorporate erosion control practices specific to site conditions;
- Provide for maintenance and adherence to the plan; and
- Discuss whether or not a 404/401 Permit is required for the project.

3.2.1 Nature of Construction Activity

The SWPPP shall describe the nature of the project by including the following:

- A brief description of the project, including its function (e.g., low density residential, highway, etc.) and enough facility and outfall information to be of practical use to contractors and site construction workers to guide the installation and maintenance of BMPs;
- The intended sequence and timing of soil disturbance activities at the site; and
- Total area to be disturbed by excavation, grading, or other construction activity.

3.2.2 Figures

The SWPPP shall include a general map (e.g., US Geological Survey quadrangle map) with enough detail to identify the location of the construction site and waters of the State within one mile of the project site. In addition to the general location map, a legible map shall be submitted with the SWPPP that includes the following:

- Direction(s) of stormwater flow and approximate slopes anticipated after grading activities;

⁸ Refer to the Requirements section of the Missouri State Land Disturbance Permit.

- Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
- Location of major structural and non-structural BMPs identified in the SWPPP;
- All temporary and permanent access locations;
- Locations where stabilization practices are expected to occur;
- Location of off-site material, waste, borrow, or equipment storage areas;
- Locations of all stockpiles;
- Limits of construction, including areas to be avoided, such as sensitive areas or stream corridors;
- Locations of all waters of the State (including wetlands);
- Locations where stormwater discharges to a surface water; and
- Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

For any project requiring a land disturbance permit and disturbing more than one acre, separate drawings are required for the initial (i.e., clearing), interim (i.e., grading), and final (i.e., stabilizing) stages of a project. This is to clarify, both to the design engineer and field personnel, what erosion and sediment controls are appropriate at the outset of construction, during site development, and at the end of construction prior to final establishment of vegetation.

3.2.3 Description of BMPs

The SWPPP shall list and describe structural and non-structural BMPs that will be used at the site. The SWPPP shall provide the following general information for each BMP, which will be used one or more times at the site:

- Physical description of the BMP;
- Site conditions that must be met for effective use of the BMP;
- BMP installation/construction procedures, including typical drawings; and
- Operation and maintenance procedures for the BMP.

The SWPPP shall provide the following information for each specific instance where a BMP is to be installed:

- Whether the BMP is temporary or permanent;
- Where, in relation to other site features, the BMP is to be located;

- When the BMP will be installed in relation to each phase of the land disturbance procedures to complete the project; and
- Site conditions that must be met before removal of the BMP, if the BMP is temporary.

Section 3.3 provides further detail regarding BMP use at a project site.

3.3 Specific SWPPP Requirements

In order to develop an effective SWPPP, the City requires that each of the following ten elements be addressed. The elements are designed to reduce erosion while also trapping sediment that does erode before it leaves the site. Design information for the elements is available from the City.

Elements of an Effective SWPPP:

1. Identify and protect environmentally sensitive areas;
2. Stabilize drainageways;
3. Balance earthwork on-site (or for each phase);
4. Limit the size of grading phases to reduce soil exposure;
5. Stabilize exposed soils in a timely manner;
6. Implement effective perimeter controls;
7. Use sedimentation basins;
8. Protect steep slopes from erosion;
9. Protect inlets, storm sewer outfalls, and culverts from erosion; and
10. Implement construction site chemical control BMPs.

3.3.1 Element 1: Identify and Protect Environmentally Sensitive Areas

Sensitive resources, particularly downstream waterbodies, shall be identified within and downstream of the project site and may include:

- Sinkholes;
- Losing streams;
- Caves;
- Wetlands;
- Mature timber stands;

- Steep slopes to be undisturbed; and
- Potential stormwater infiltration areas.

These sensitive areas shall be protected whenever possible. In addition, many types of sensitive areas are protected by city, state, or federal law. Sensitive areas shall be clearly labeled on the SWPPP, and clearing and grading operations shall be planned in a way that will avoid and protect these areas. Construction fence, or another approved means, shall be used on the site to protect and preserve sensitive areas. If sensitive areas are identified downstream by the design engineer, it will be noted on the Required Checklist for Preliminary Acceptance of SWPPP in Appendix B. In this case, an attachment to the checklist will be required. This attachment will include an estimated cost to bring the downstream sensitive area back to its original condition prior to the damage. This estimated cost will be included in the opinion of probable cost submitted in the SWPPP.

3.3.2 Element 2: Stabilize Drainageways

Existing drainageways shall not be filled or dredged within the limits of the stream without verifying with the USACE that it is not regulated by them. If so, they may require a 404 permit (Table 2-1). Appendix A has contact information for the USACE district that covers the City area. It shall be noted that only the USACE can determine if a drainageway requires a 404 permit.

3.3.2.1 Buffers⁹

Major drainageways, streams, rivers, or lakes within the city limits of the City and located on or adjacent to a project shall be protected by one of the following:

- A 50-foot undisturbed natural buffer;
- An undisturbed buffer less than 50 feet and supplemented by erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer;
- If infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Even if drainageways are not regulated with a stream buffer, construction activities in or around the drainageway shall be minimized.

Buffers shall be measured perpendicularly from any of the following points, whichever is further landward from the water:

- The ordinary high water mark of the waterbody;
- The edge of the stream or river bank, bluff, or cliff, whichever is applicable.

⁹ Adapted from Item 8.f of the Requirements section in the Missouri State Land Disturbance Permit.

Limits of construction shall be clearly shown on the SWPPP to indicate the exact limits of grading adjacent to a stream buffer. Construction fence shall be installed on the stream buffer delineation.

Crossing a drainageway containing a regulated stream buffer with construction equipment requires a temporary stream crossing. Unless otherwise approved by the City, temporary stream crossings must be spaced a minimum of 2,000 feet apart as measured in the drainageway.

The following activities are allowed within the stream buffer area:

- Water quality monitoring and stream gauging;
- Removal of individual trees within the stream buffer that are in danger of falling, causing damage to dwellings or other structure or causing blockage of the stream, with the verbal approval from the City; and
- Timber cutting necessary to preserve the forest from extensive pest infestation, disease infestation, or threat from fire may be performed, with the verbal approval from the City.

The following practices and activities are restricted within the stream buffer area:

- Clearing of existing vegetation;
- Soil disturbance by grading, stripping, or other practices;
- Filling or dumping of any material including, but not limited to, yard waste and demolition debris;
- Drainage by ditching, underdrains or other systems;
- Use, storage, or application of pesticides;
- Storage or operation of motorized vehicles, except for maintenance and emergency;
- Development that includes, but is not limited to, structures, roads, bridges, paths, parking lots, outfalls of treated sewer, outfalls of stormwater, and utilities; and
- Removing or cutting vegetation, except for maintenance of existing vegetation.

3.3.2.2 Disturbance or Creation of Small Drainageways or Ditches not within a City Regulated Stream Buffer

It may be impossible, or undesirable, to avoid all construction in existing ditches and minor drainageways that drain a small amount of upland area off the site. Many development projects require existing topography to change. The existing ditches and small drainageways may be moved, resized, or piped to

accept the development. Permittees shall use the Missouri Use Designation Dataset and the National Hydrography Dataset to delineate ditches and drainageways.¹⁰

Most will require some form of stabilization during the construction phase to include ditch checks or some type of liner, such as rolled erosion control products, plastic liners, and rock liners. Ditch checks will slow down the velocity of the stormwater to reduce erosion and promote sedimentation. The ditch check shall be in place until the channel has been permanently stabilized to handle stormwater flows.

3.3.2.3 Temporary (Diversion) Ditches

Most sites will require temporary (diversion) ditches or some other type of conveyance BMP at upslope and downslope perimeters, at the top of steep slopes, and downstream of slope drains to reduce the flow of stormwater over disturbed, unprotected areas. The design engineer shall determine if a permanent ditch will be required, if not, it may be more appropriate to install some other type of conveyance BMP that will not require filling the temporary ditch after the site is stabilized.

3.3.3 Element 3: Balance Earthwork on Site (or for each phase)

Earthwork shall be balanced whenever possible; however, there may be some instances where balancing earthwork is not practical. In these cases, a variance shall be requested during the review of the SWPPP. Variances requested after the work has been completed will not be considered. The variance request shall address the following items:

- Reason for variance;
- Amount of material to be imported or exported;
- Location of disposal site, if export, or source site, if import;
- Land Disturbance Permit numbers for disposal or source sites;
- Detailed haul route plan; and
- Type and number of trucks required to complete import or export.

During construction, each grading phase shall be accepted by the Land Disturbance Inspector prior to starting work on the next phase.

3.3.4 Element 4: Limit the Size of Grading

For sites where the total disturbed area will exceed 40 acres, or wherever it is possible for areas less than 40 acres, grading operations shall not take place at the same time. In order for this to occur, the site must be divided into separate grading phases. All sites shall be evaluated for the phasing of grading operations regardless of the size of the disturbed area. Techniques such as over excavation, stockpiling, and replacement of soils may be used, if necessary, as long as they are approved by the City. Seeding and

¹⁰ The Requirements section and Part V of the Missouri State Land Disturbance Permit require BMPs to capture and treat runoff up to and including a 2-year, 24-hour storm event.

mulching shall be completed within 5 days of the Land Disturbance Inspector's acceptance of the phase or a Stop Work Order shall be issued (Section 7.3).

3.3.5 Element 5: Stabilize Exposed Soils in a Timely Manner¹¹

Topsoil stripping and replacement is critical for the successful re-establishment of vegetation after a project is constructed. Topsoil shall be stripped to a depth of 6 inches unless otherwise accepted by the Land Disturbance Inspector. Wood material in the area to be stripped shall be removed prior to stripping, but grasses shall be left in the topsoil layer to be stripped. Topsoil stripping shall not take place outside the accepted limits of construction. Topsoil stripping, stockpiling, and re-spreading in areas to be vegetated shall be a mandatory practice. The location of all topsoil stockpiles must be shown in the SWPPP. Stockpiles shall have side slopes no steeper than 3:1.

Stabilization of all areas disturbed by construction shall be **initiated immediately** and **completed** within **14 calendar days** after the disturbance has temporarily or permanently ceased, unless infeasible due to weather and equipment malfunctions. For temporary stabilization, the permittee shall construct BMPs. For final stabilization, the permittee shall perform the following procedures:

- After a minimum of 4 inches of topsoil is re-spread on the site, the installation of final stabilization BMPs shall be completed;
- Applicable BMPs for final stabilization consist of seeding and mulching, rolled erosion control products and hydraulic erosion control;
- For permanent stabilization, the City requires areas to be seeded, mulched, or permanently landscaped.

3.3.6 Element 6: Implement Effective Perimeter Controls

3.3.6.1 Upslope Perimeters

Design engineers shall estimate the flow rate and volume of stormwater from the upslope area and determine if the stormwater shall be ponded uphill of the disturbed area or conveyed around or through the land disturbance area. If the upslope stormwater is conveyed down a disturbed slope greater or equal to 4:1, the design engineer shall consider using temporary slope drains.

If the design engineer decides to pond the sheet flow-stormwater upslope of the land disturbance, instead of moving the stormwater through or around the site, the design engineer shall consider a silt fence or a ponding berm. Upslope-stormwater is not required to run through a sedimentation structure or be ponded on site.

¹¹ Adapted from Item 8.h of the Requirements section in the Missouri State Land Disturbance Permit.

3.3.6.2 Downslope Perimeters

All disturbed sheet flow areas shall run through a sediment control measure, for example, ponded behind a BMP prior to leaving the site or entering an undisturbed drainageway or ditch.

3.3.7 Element 7: Use Sedimentation Basins¹²

Runoff from disturbed areas less than 1.0-acre may be treated by a sediment trap. It is suggested that land disturbance areas greater than 1.0-acre use a sediment basin. The following practices apply to the use of sedimentation basins:

- The outlet and spillway of a sedimentation basin shall be designed and constructed as a stable conveyance channel. Conveyance channels shall consist of a stabilized diversion ditch or some other stable conveyance BMP;
- The sedimentation basin shall be designed, at a minimum, to treat a local 2-year, 24-hour storm.
- Sediment shall be removed from the sedimentation basin when the basin is 50% full;
- The sedimentation basin shall be maintained until final stabilization of the disturbed area served by the basin;
- If the use of a sedimentation basin is infeasible, the SWPPP shall evaluate and specify other similarly effective BMPs from appropriate BMP guidance documents available from the City.

If the downstream area for any sediment structure is considered environmentally sensitive, the design engineer shall use flocculants to enhance the settling of the sediment in the sedimentation structures and ponding BMPs.

3.3.8 Element 8: Protect Steep Slopes¹³

Slopes steeper than 3:1 are difficult to vegetate and maintain. If the slope is greater than 3% and greater than 150 feet in length, the permittee shall establish interim stabilization within seven days of ceasing operations on that part of the site. The following BMPs apply to steep slopes:

- Approved permanent stabilization is required to control erosion on all sites that cannot be graded at a 3:1 slope;
- At a minimum, slopes steeper than 4:1 shall be protected with a rolled erosion control product. In some cases, retaining walls may be necessary to control grades on a site;
- New steep slopes between 3:1 and 4:1 shall incorporate terracing;

¹² Adapted from Item 8.j of the Requirements section in the Missouri State Land Disturbance Permit.

¹³ Adapted from Item 8.h of the Requirements section in the Missouri State Land Disturbance Permit.

- A stable conveyance BMP like a permanent or temporary diversion ditch shall be placed above all steep slopes on the site that may receive concentrated or sheet flows. A temporary slope drain may be used until a permanent diversion ditch can be stabilized with vegetation;
- Where steep-cut slopes are planned near the site perimeters, a minimum of 6-feet between the property line and the top of the cut slope shall be reserved for the diversion ditch, unless otherwise accepted by the City.

3.3.9 Element 9: Erosion Protection of Inlets, Storm Sewer Outfalls, and Culverts¹⁴

The entrances to storm sewer inlets shall be protected to reduce the inflow of sediment. Likewise, storm sewer outfalls and culvert outlets shall be protected against scour and erosion. In general, the following BMPs apply for storm sewers and culverts:

- All storm sewer inlets on a site must be provided with inlet protection. The type of inlet protection to be used must be specified on the SWPPP;
- All culvert inlets on a site shall be provided with a reinforced rock berm or another BMP to slow down the water prior to entering the culvert;
- Inlets shall be cleaned weekly or following a rainfall that generates runoff;
- Storm sewer outfalls and culvert outlets shall be permanently protected against erosion with a riprap apron or other approved means. Riprap shall be installed at the same time as construction of the storm sewer outfall or culvert;
- All disturbed sheet flow areas shall be treated by running through a sediment structure or ponded behind a BMP with the proper amount of storage prior to leaving the site. Most inlet protection does not provide sufficient volume of storage for ponding. When storage is not available at the inlet, the stormwater must run through a sediment structure or be ponded behind a BMP with proper storage prior to leaving the site, which can occur before or after entering the inlet.

3.3.10 Element 10: Construction Site Chemical and Waste Control BMPs

Construction often produces many other pollutants in addition to sediment, including, but not limited to:

- Construction materials, such as discarded building materials, concrete truck and mortar mix washout
- Pesticides;
- Petroleum products;

¹⁴ Adapted from Item 8.i of the Requirements section in the Missouri State Land Disturbance Permit.

- Nutrients;
- Sanitary waste;
- Other solid wastes; and
- Other construction chemicals, such as paint, oils, etc

General construction practices regarding potential pollutants include:

- When applicable, all potential pollutants shall be properly, stored, handled, applied, and disposed of to minimize discharge from wash waters, spills and leaks, and exposure of building materials;
- Sanitary facilities shall be provided for construction workers. Sanitary facilities shall be located in the stabilized staging area away from drainageways. Sanitary facilities shall never be placed near storm sewer inlets;
- Minimize access locations while accounting for traffic and pedestrian safety;
- Provide vehicle tracking control at all access locations and adjacent to staging areas;
- Do not wash equipment and machinery on site;
- Manage dewatering with appropriate BMPs sufficient to treat water pumped off site;
- Provide a concrete washout area, when applicable; and
- Provide solid and hazardous waste management, including proper disposal.

Specifically, for pesticides, storage areas shall be protected from the elements, warning labels and signage shall be properly displayed, and properly disposed of through a licensed firm or facility. Petroleum products require more stringent guidelines that include:

- Protect product from the elements;
- Line the storage area with plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity 100% of the largest container's capacity;
- Clearly label all products;
- Store tanks off the ground;
- Securely fasten lids;
- Properly dispose of oily and oily wastes, such as cans, rags, etc.;
- Do not mix used oil for recycling with degreasers, solvents, antifreeze, or brake fluid; and

- Fuel and maintain vehicles in stabilized staging areas.

3.3.11 Spill Response

3.3.11.1 Spill Response Procedures

All hazardous wastes that are transported, stored, or used for maintenance, cleaning, or repair shall be managed according to the provisions of the Missouri Hazardous Waste Laws and Regulations. Spill response procedures shall be posted in a conspicuous place, and persons trained in spill handling shall be on site and/or on call at all times. Materials for cleaning up spills shall be kept on site and made easily available. Spills shall be cleaned up immediately, and the contaminated material shall be properly disposed of.

3.3.11.2 Spill Reporting

It is required by state law that spills of a petroleum product in excess of 50 gallons be reported to the MDNR. Spills shall be reported to the following number:

Missouri Department of Natural Resources
(573) 634-2436

Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area like a road ditch that drains into one of the above. If applicable, report oil releases to:

National Response Center
(800)-424-8802

In the event of a spill that is reported to the state or federal government, the City shall also be notified. Failure to report and clean up any spill shall result in issuance of a Stop Work Order (Section 7.3). Spills released onto soil shall be dug up and properly disposed of, while spills on pavement shall be absorbed with sawdust, kitty litter, or another product designed for that purpose.

4.0 Application, SWPPP Review, and Pre-Construction

Steps in Section 4.0:

Step 4 – Submit SWPPP and Land Disturbance Application:

Submit Land Disturbance Application, SWPPP, and other required documents to City for review. An application fee shall be included with this submittal. (Section 4.1)

Step 5 – SWPPP Review – Completeness Check:

The City shall conduct a pre-review of the SWPPP to check the basic level of completeness based on compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual. If deemed incomplete, the design engineer's revisions submittal shall be returned to the applicant for modification and resubmission. (Section 4.2)

Step 6 – SWPPP Review – Detailed Review:

Once the submittal is deemed complete, the City shall conduct a detailed review of the SWPPP and supporting documents for compliance with Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual. If deficiencies are noted, the City shall provide written comments to the Applicant; such comments may include questions, requests for additional information, and/or requests for modifications to the SWPPP in order to comply with applicable requirements. If such comments are received, the Applicant shall address each comment and resubmit revised documents along with a summary of how each comment was addressed. (Section 4.2)

Step 7 – SWPPP Acceptance:

- When the City has found the SWPPP to meet the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the SWPPP will be accepted;
- The Applicant shall post the required fiscal security and submit at least 3 copies of the SWPPP to the City to be signed and returned (Section 4.2).

Step 8 – On-Site Pre-Construction Meeting:

- Contact the City to schedule an on-site pre-construction meeting.
- Prepare for and attend on-site pre-construction meeting. Required attendees at this meeting include, but are not limited to, the Applicant's Land Disturbance Manager (Section 4.3).

Step 9 – Land Disturbance Permit Issuance:

If Applicant is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue a Land Disturbance Permit (Section 4.4).

4.1 Land Disturbance Application

Step 4

Submit SWPPP and Land Disturbance Application

Upon completion of the SWPPP in accordance with this Manual and when ready to apply for a Land Disturbance Permit, the permittee shall submit the following to the City:

- Signed and stamped SWPPP;
- Signed and stamped Checklist for Preliminary Acceptance of SWPPP (Appendix B);
- Signed Land Disturbance Application (Appendix C);
- MDNR Land Disturbance Permit Coverage;
- Other required documents; and
- Permit application fees, which consist of a base fee and per-acre charge (Appendix D).

4.2 SWPPP Review and Acceptance

4.2.1 SWPPP Review

Step 5

SWPPP Review – Completeness Check

The City will review the SWPPP for completeness within one week of the initial submittal. Upon the submittal of the SWPPP, the applicant shall be prepared to promptly respond to any questions, requests for additional information, and/or requests for SWPPP modifications. If the SWPPP does not meet a basic level of completeness based on the requirements outlined in Section 3.0, it will be returned to the applicant for revisions. The one-week review period will begin again upon submittal of the revised SWPPP. The revision and review process will continue until the SWPPP is deemed complete by the City.

Step 6

SWPPP Review – Detail Review

Once the City deems the SWPPP complete, a detailed review based on the requirements outlined in Section 3.0 will take place. Typically, written comments will be provided to the applicant within 25 business days of the City accepting the SWPPP as complete, for the purpose of beginning the administrative revision process. This applies to initial submittals as well as resubmittals. The applicant shall revise the SWPPP and fully address each comment from the City. If the City does not deem the comment revisions sufficient, the SWPPP must be revised. Beginning with the third comment resubmittal, the City may charge an additional review fee each time the SWPPP must be resubmitted.

4.2.2 SWPPP Acceptance

Step 7

SWPPP Acceptance

When City has found the SWPPP to be in compliance with the guidance provided in this Manual, the SWPPP will be accepted. Once the SWPPP has been accepted, the applicant shall submit the following documents and fees to the City:

- Specified number of copies (at least 3) of SWPPPs signed and sealed by the design engineer, bound and stapled, and folded to 9 by 12 inches; and
- Fiscal security for projects that have a probable cost of sediment and erosion control installation of 250 dollars or more (refer to fiscal security estimate worksheet in Appendix E).¹⁵

Signed SWPPPs will be returned to the applicant and are valid for two years following the signature date. The City will retain one set of signed SWPPPs and a variable number of project drawings, depending on the project type. If additional time is needed at the end of two years, the applicant must submit the SWPPP to the City for re-review and re-acceptance.

4.2.3 Fiscal Security

The City accepts an Irrevocable Letter of Credit (ILOC). A copy of an approved ILOC Form is located in Appendix F. The ILOC shall allow for the security to be held until final close-out acceptance. Information regarding the release of fiscal security is provided in Section 6.2. The cost of the erosion and sediment controls shall be estimated using the probable cost worksheet included in Appendix E of this Manual and secured with an ILOC prior to final acceptance of the SWPPP for the subdivision.

If the project, including the revegetation process, takes longer than two years, the permittee shall extend the posted letter of credit for a minimum of one additional year. The letter of credit shall be extended a minimum of 14 days prior to the expiration date. The City will draw upon the fiscal security if it is not extended prior to the 14-day deadline.

4.3 Applicant Tasks Prior to Permit Execution

Prior to a Land Disturbance Permit execution, the applicant shall perform the following tasks, which are described in subsequent sections:

- Designate a Land Disturbance Manager and Alternate Land Disturbance Manager (Section 4.3.1);
- Contact the City to schedule the on-site pre-construction meeting with at least three days' notice;

¹⁵Fiscal security insures the site can be stabilized by the City if the permittee does not fulfill the requirements of the permit within a specified time frame by the City. If the design engineer notes that sensitive areas exist downstream of the land disturbance on the Required Checklist for Preliminary Acceptance of SWPPP, which is submitted as part of the SWPPP, the City may require an additional fiscal security to insure that the area is protected. This will ensure the permittee's attempt to protect downstream sensitive areas to the maximum practical extent, which will reduce future litigations with downstream property owners, the City, and permittees for land disturbance.

- Prepare for the on-site pre-construction meeting (Section 4.3.3);
- Install initial BMPs prior to pre-construction meeting. No formal notification to the City is required unless modifications are to be made. If the applicant proposes BMP modifications, they must be accepted by the City; and
- Attend on-site pre-construction meeting (Section 4.3.3).

4.3.1 Land Disturbance Manager

At the pre-construction meeting (Section 4.3.3), the permittee(s) must designate a Land Disturbance Manager and Alternate Land Disturbance Manager. The Land Disturbance Manager and Alternate must provide the City with a 24-hour emergency contact number. In the event the Land Disturbance Manager (or Alternate Land Disturbance Manager) is not on site, and cannot be reached during any level of violation, a Stop Work Order shall be issued. The Land Disturbance Manager, who may be any employee of the owner or contractor, will be the primary contact person between the permittee and the City.

Responsibilities of the Land Disturbance Manager include:

- Act on behalf of the permittee to ensure the project remains in compliance (permittee remains legally responsible);
- Be present at the project site a majority of the time;
- Respond to requests made by the City staff;
- Correct any project deficiencies;
- Until final BMPs are installed, perform inspections in accordance with Section 5.4.1;
- After final BMPs are installed, perform monthly inspections until the close of the permit; and
- Maintain all records throughout the Project's duration.

The Alternate Land Disturbance Manager shall be able to serve in the same capacity as the Land Disturbance Manager and will be the contact person if the Land Disturbance Manager is not available. The Land Disturbance Manager must inform the Alternate Land Disturbance Manager of any absences, keep the Alternate up-to-date on the status of the SWPPP implementation, and ensure that the Alternate Land Disturbance Manager assumes the Land Disturbance Manager's responsibilities during any absence.

If the permittee(s) intend to change personnel for any reason, written notification must be provided to the City. A field meeting between the City Land Disturbance Inspector and new Land Disturbance Manager or Alternate must be scheduled within seven days of the change. The meeting will be to discuss site conditions and the responsibilities of the Land Disturbance Manager.

4.3.2 Preparation for On-site Pre-Construction Meeting

Prior to the pre-construction meeting, the Land Disturbance Manager shall:

- Thoroughly review the SWPPP and Land Disturbance Field Manual. It is the Land Disturbance Manager's responsibility to understand all of the requirements of the Land Disturbance Permit process as laid out in these document;
- Sign the Responsible Party Designation Form (Appendix G; owner/operator must also sign the form)

4.3.3 On-site Pre-Construction Meeting

Step 8

On-Site Pre-Construction Meeting

4.3.3.1 Attendees

In addition to the City Land Disturbance Inspector, the following representatives shall attend the pre-construction meeting:

- Owner or Owner's representative (the contractor may NOT be the owner's representative);
- General contractor;
- Land Disturbance Manager and Alternate Land Disturbance Manager (one or both may be the same as the owner or general contractor representative);
- Grading sub-contractor, if different than the general contractor;
- Design engineer (the design engineer's attendance is not mandatory; however, it is strongly recommended that the design engineer attend to avoid possible delays if the City or the permittee(s) determine that modifications to the SWPPP are necessary).

If one of the mandatory attendees is not present at the pre-construction meeting, the accepted SWPPP is not in the Land Disturbance Manager's possession, or if the installation of the initial BMPs is not approved by the Land Disturbance Inspector, the meeting will be rescheduled and the applicant will be assessed a \$50.00 re-inspection fee. The fee shall be paid to the City prior to scheduling another pre-construction meeting.

4.3.3.2 General Meeting Items

The following items will be addressed at the pre-construction meeting:

- Introductions;
- Exchange of contact information;

- Field review of SWPPPs;
- Acceptance of Responsible Party Designation Form;
- Inspection of initial BMPs;¹⁶
- Acceptance of initial BMPs and the Responsible Party Designation Form – if accepted, the City Land Disturbance Inspector sign the Land Disturbance Permit application, and submit it to the City for processing. Construction shall not start until an issued Land Disturbance Permit is obtained from the City as described in Section 4.4.

4.4 Issuance of Land Disturbance Permit

Step 9

Land Disturbance Permit Issuance

The City will issue the Land Disturbance Permit generally within 24 hours after the signing of the Land Disturbance Permit Application by the Land Disturbance Inspector (either at the pre-construction meeting or at a follow-up inspection). Once the permittee(s) picks up the issued Land Disturbance Permit, construction can begin. Other than the installation of the initial BMPs shown on the SWPPP, no stripping operations, haul road grading, or other construction shall occur before a Land Disturbance Permit has been issued.

A Land Disturbance Permit is valid for one year after the permit is signed by the City. If additional time is needed, the permittee(s) shall contact the City and begin the renewal process at least 14 days prior to the original permit's application date. The permit must be valid at the project's final close-out.

4.4.1 Permit Transfer

In the instance a project or portion of a project is sold to a new owner, or if the contractor on the permit has changed, the Land Disturbance Permit must be transferred to a new owner and/or contractor. The transfer requires a new Land Disturbance Permit Application form, transfer fee, new fiscal security (new owner only), and another pre-construction meeting. If the transfer does not occur, the City will issue a Stop Work Order (Section 7.3).

¹⁶ If modifications or corrections to the BMPs are necessary, the Land Disturbance Inspector will inform the permittee(s) that such corrections must be made and that a follow-up inspection shall be scheduled with the City. The Land Disturbance Inspector must accept the corrected BMPs before the Land Disturbance Permit can be signed or any other inspections can take place. If schedule completion of stabilization is required and major revisions are needed to the schedule, the Land Disturbance Manager will be required to submit a revised schedule prior to the Inspector signing the Land Disturbance Permit application. Modifications to the SWPPP will, in most cases, require acceptance of the design engineer who sealed and signed the SWPPP. The re-inspection requires a one-day notice (by 3:30 pm the weekday prior to the inspection).

5.0 Construction

Steps in Section 5.0:

Step 9a – Land Disturbance Compliance:

Ensure compliance with requirements of the Land Disturbance Permit. (Section 5.1)

Step 9b – Install BMPs:

Ensure installation of temporary and permanent BMPs at the appropriate times in accordance with the accepted SWPPP and stormwater designs, requirements of Ch. 34, Art. III of the City's Code of Ordinances, and guidance provided in this Manual and the *Post-Construction Stormwater Manual*. (Section 5.3)

Step 9c – Land Disturbance Inspections:

- Contact the City to schedule applicable land disturbance inspections;
- Permittee's Land Disturbance Manager shall attend scheduled City land disturbance inspections;
- Correct deficiencies as requested by the City (Section 5.4).

5.1 Land Disturbance Permit Compliance

Step 10a

Land Disturbance Compliance

Once the Land Disturbance Permit is obtained and on site, construction can begin. The permittees (owner and contractor) are responsible for ensuring compliance with requirements of the Land Disturbance Permit at all times.

5.2 Documents that Shall Remain On Site

A copy of the SWPPP, any amendments to the SWPPP, inspection records, results of any monitoring or analysis, and any project permits must remain on site at all times. Once the Land Disturbance Permit is obtained, it must also remain on site. In the event the required documents are not on site, a Level III Violation (Section 7.2) will be issued.

5.3 Temporary and Permanent BMPs

Step 10b

Install BMPs

It is the responsibility of the Land Disturbance Manager to ensure that temporary and permanent BMPs are installed at the earliest opportunity that grading or construction of new facilities allow or as identified on the SWPPP.

5.4 Construction Phase Inspections

5.4.1 Land Disturbance Inspections

Step 10c

Land Disturbance Inspections

During the construction phase, erosion, and sediment controls will be inspected regularly by the Land Disturbance Manager and the City Land Disturbance Inspector to consider the following:

- Overall effectiveness of the controls for reducing erosion and trapping sediment on the site; and
- Proper installation and maintenance of the controls.

The Land Disturbance Manager is responsible for inspecting the site according to the following schedules:

- At least once per 14 calendar days; and

Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour rainfall event (2.94 inches) has ceased. If problems are found on the site, the Land Disturbance Manager shall ensure corrections be performed within 48 hours. It is recommended the Land Disturbance Manager performs inspections on Wednesday each week so that problems can be fixed by Friday of the same week. The Land Disturbance Manager Inspection Form is located in Appendix H.

The City Land Disturbance Inspector will perform quality assurance inspections at random to ensure the Land Disturbance Manager is performing the required Land Disturbance Inspections. The City Inspection Form is located in Appendix H. During these quality assurance inspections the City Land Disturbance Inspector will also perform his/her own inspection of the Land Disturbance BMPs. If sediment appears to be leaving the site; or the City takes stormwater samples when less than 3.51 inches of rainfall has fallen in a 24-hour period reading greater than 280 nephelometric turbidity units (NTUs), the City will require the Land Disturbance Manager to request a revision to the SWPPP by the design engineer.

If a new Land Disturbance Manager or Alternate Land Disturbance Manager is chosen, the permittee(s) shall contact the City to schedule an inspection. All inspection requests need to be called into the City by 3:30 pm the day before the inspection (3 business days prior to the inspection for the pre-construction meeting).

5.4.2 Re-Inspection Fees

To offset the cost of additional inspections on noncompliant sites, the City requires that re-inspection fees be paid in person at the City offices prior to receiving subsequent inspections. Re-inspection fees shall be charged for all projects that are deficient due to the following:

- Permittee(s) fails to properly install all initial BMPs prior to the scheduled pre-construction meeting;
- Required attendees fail to attend the scheduled pre-construction meeting;

- Permittee(s) fails to have the SWPPP on site during the pre-construction meeting;
- Permittee(s) receives a Stop Work Order (fee consists of new permit fee in this case);
- Permittee(s) fails to obtain vegetation acceptance from the City prior to requesting a final release of fiscal security;
- Permittee(s) removes any BMPs prior to receiving authorization by the City;
- Land Disturbance Inspector finds violations of Land Disturbance Permit requirements during routine inspections; and

Failure to cancel any inspection before 3:30 pm the day prior to a scheduled inspection in the event that a site is not ready for an inspection.

6.0 Project Close-Out

Steps in Section 6.0:

Step 11 – Initial Close-Out Inspection:

- Prepare site for initial close-out inspection;
- Contact the City to schedule initial close-out inspection. Permittee's Land Disturbance Manager shall attend initial close-out inspection.
- Correct deficiencies as requested by the City and, if requested, contact the City of schedule a follow-up inspection (Section 6.1).

Step 12 – Initial Close-Out Acceptance:

Once the site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue initial close-out acceptance (Section 6.1).

Step 13 – Revegetation:

- Perform monthly inspections during the revegetation process;
- Correct deficiencies in on-site BMPs and control weeds as deemed necessary during inspections or as requested by City (Section 6.1.4).

Step 14 – Vegetation Acceptance Inspection:

- Contact the City to schedule vegetation acceptance inspection when vegetative growth has reached the required coverage;
- Permittee's Land Disturbance Manager shall attend vegetation acceptance inspection;
- Correct deficiencies as requested by the City and, if requested, contact the City and schedule a follow-up inspection. (Section 6.1.4)

Step 15 – Vegetation Acceptance:

Once the site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue vegetation acceptance (Section 6.1.4).

Step 16 – Final Close-Out Inspection:

- Prepare the site for final close-out inspection, including removal of temporary BMPs;
- Contact the City to schedule final close-out inspection;

- Permittee's Land Disturbance Manager shall attend final close-out inspection;
- Correct deficiencies as requested by the City and, if requested, contact the City and schedule a follow-up inspection (Section 6.2.1).

Step 17 – Final Close-Out Acceptance:

Once the site is in compliance with the requirements of Ch. 34, Art. III of the City's Code of Ordinances and guidance provided in this Manual, the City shall issue final close-out acceptance (Section 6.2.1).

Step 18 – Fiscal Security Release:

Submit a Fiscal Security Release Form to the City to be signed and returned (Section 6.2.2).

Step 19 – Stormwater Operating Permit Compliance:

Ensure compliance with the Stormwater Operating Permit as applicable (refer to the *Post-Construction Stormwater Manual*).

6.1 Initial Close-Out

6.1.1 Preparation for the Initial Close-Out Inspection

Step 11

Initial Close-Out Inspection

Once land disturbance activities are completed, the Land Disturbance Manager shall contact the City to schedule an initial close-out inspection. The Land Disturbance Manager shall contact the City prior to 3:30 pm the day before the inspection. To allow time for the resolution of issues, the initial close-out inspection shall be scheduled a minimum of 2 weeks prior to a scheduled request for closing a building permit and allowing occupancy.

In preparation for the initial close-out inspection before the permittee(s) leave the site, the Land Disturbance Manager shall undertake the following:

- Clean all streets, sidewalks, and flowlines of sediment with a street sweeper or other approved means. Washing of streets, sidewalks, and flowlines is in direct violation of City criteria. Clean all inlets, trickle channels, and all other drainage features;
- Remove temporary erosion and sediment controls (if directed by approved Land Disturbance Inspector) and install/maintain permanent erosion and sediment control BMPs according to the final SWPPP; and
- Ensure that all disturbed areas are seeded and mulched, or otherwise stabilized, per the City's criteria.

Failure to properly complete these items may result in a hold being placed on the issuance of any new building permits or the closing of existing building permits and allowing occupancy.

6.1.2 Inspection Attendees and Agenda

Representatives of the permittee(s), including the Land Disturbance Manager, shall attend the initial close-out inspection along with the Land Disturbance Inspector.

The following agenda items will be addressed at the initial close-out inspection:

- Inspection of permanent BMPs: All permanent BMPs will be inspected including topsoil spreading, soil preparation, and seeding and mulching;
- Inspection of site cleanup: Cleanup of the site and adjoining streets is checked; and
- Discussion of vegetation requirements: The required vegetation inspections and coverage are described in the following sections.

6.1.3 Site Corrections and Initial Close-Out Acceptance

Step 12

Initial Close-Out Acceptance

The permittee(s) shall make any corrections to the site requested by the City Land Disturbance Inspector. If the corrections are substantial, the Land Disturbance Inspector may require a follow-up inspection be scheduled prior to issuing initial close-out acceptance.

6.1.4 Vegetation Establishment

Step 13

Revegetation

The permittee(s) shall perform monthly inspections during the revegetation process and correct deficiencies in on-site BMPs and control weeds as deemed necessary during inspections or as requested by City.

6.1.5 Vegetation Inspections and Maintenance

The permittee(s) shall undertake the following inspections and maintenance operations until the vegetated areas meet the required coverage, or final stabilization. In addition, Land Disturbance Inspector will make periodic inspections of the revegetation area. Required vegetation coverage shall be at least 70% over 100% of the site.

Inspection and maintenance requirements include the following:

- Seeded and mulched areas shall be inspected monthly by the permittee(s) until a written acceptance of vegetation is received from the City. Repairs, reseeding, and mulching shall be undertaken at least twice per year, or as requested by the Land Disturbance Inspector, for any areas failing to meet the required coverage;
- Rill and gully erosion shall be filled with topsoil prior to reseeding. The reseeding method shall be approved by the City; and
- Noxious weeds shall be controlled in a manner approved by the City.

6.1.6 Acceptance

Step 14

Vegetation Acceptance Inspection

Once a site as met the coverage outlined in Section 6.1.5, the permittee(s) shall contact the City to schedule the vegetation acceptance inspection. It is the duty of the City Land Disturbance Inspector to confirm that vegetation has met the required coverage and that noxious weeds have been controlled. The permittee's Land Disturbance Manager shall attend the vegetation acceptance inspection.

At the inspection, the City Land Disturbance Inspector will either accept the vegetation or stipulate the corrections that have to be made. Corrections shall be made as requested by the City. If corrections are substantial, the Land Disturbance Inspector may require that a follow-up inspection be scheduled with the City.

Step 15

Vegetation Acceptance

If the required vegetation coverage has been met, the Land Disturbance Inspector will issue written acceptance of the vegetation and give the permittee(s) instructions to remove the remaining on-site BMPs.

6.2 Final Close-Out

6.2.1 Final Close-Out Inspection

Step 16

Final Close-Out Inspection

After obtaining written acceptance of the vegetation coverage, the remaining on-site BMPs shall be removed and properly disposed of. The site shall be cleaned and any areas disturbed as a result of the BMP removal shall be seeded and mulched. Once the site is prepared for the final close-out inspection, permittee(s) shall contact the City to schedule the inspection. The permittee's Land Disturbance Manager shall attend the final close-out inspection.

Land Disturbance Inspector will check the removal of BMPs and either accept the work or stipulate the required corrections. Corrections shall be made as requested by the City. If corrections are substantial, the Land Disturbance Inspector may require that a follow-up inspection be scheduled with the City.

Step 17

Final Close-Out Acceptance

Once the site is in compliance, the City shall issue final close-out acceptance.

6.2.2 Release of Fiscal Security

Step 18

Fiscal Security Release

Once final close-out acceptance has been obtained, the permittee(s) may submit a copy of all Land Disturbance Manager Inspection Reports and a Release of Land Disturbance Fiscal Security Request Form to the City. A copy of this form is included in Appendix I. After the City has received a completed request form, it will be signed by the Land Disturbance Inspector and the project's fiscal security will be released.

After the fiscal security is released by the City, the project is complete.

Step 19

Stormwater Operating Permit Compliance

As mentioned in Section 1.0, if the project disturbs 1.0 acre or more of land or disturbs less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project, refer to the City's *Post-Construction Stormwater Manual*. If applicable, compliance with the Stormwater Operating permit shall be ensured.

7.0 Violations and Enforcement

7.1 Penalties and Enforcement

Failure to comply with any term, condition, limit, deadline, or other provision of the Land Disturbance Permit, or failure to obtain a Land Disturbance Permit, constitutes a violation of the City's Land Disturbance Ordinance and may also constitute a violation of state and federal laws.

In addition to any other legal or equitable remedies that the City may have for Land Disturbance Permit violations, the City may cease issuance of all building permit approvals and other permissions until such violations are corrected and the permittee(s) takes additional steps to ensure compliance with the Land Disturbance Permit.

7.2 Violations

The City classifies violations in three categories depending upon the severity of the violation. Enforcement action varies for each category. Level I Violations have the most severe impact on people and the environment while Level III Violations have the least severe impact.

Violations can be issued any time the City finds a site to be out of compliance with any of the land disturbance requirements found in this Manual. When a violation occurs, written notice will be given by the City through an inspection form or other written means. When a violation is issued, corrective actions, along with a timeframe to complete the corrective actions, will be specified by the City. If violations are not resolved within the specified timeframe, they may become an increasingly severe violation.

Violations of the Land Disturbance Ordinance may result in a violation of state and federal laws and be subject to civil penalties.

7.2.1 Level I Violations

Level I Violations are viewed by the City to pose an immediate serious risk to the health, safety, or welfare of people and/or the environment. Level I Violations result in an immediate issuance of a Stop Work Order (Section 7.3). Example Level I Violations include the following:

- Clearing, grubbing, or grading without a Land Disturbance Permit;
- Failure to schedule a pre-construction meeting;
- Failure to be able to contact the Land Disturbance Manager or Alternate Land Disturbance Manager during any level of violation;
- Failure to restrict operations to approved limits of construction;
- Failure to clean up the tracking of material onto roadways and adjacent paved areas;
- Exporting material to, or importing material from, a non-permitted site;

- Exporting/importing soil material without a variance;
- Failure to follow an approved phasing plan; and/or
- Failure to correct Level II Violations per the directives of the Land Disturbance Inspector.

7.2.2 Level II Violations

Level II Violations are viewed by the City to pose a moderate immediate risk to the health, safety, or welfare of people and/or the environment; however, if not immediately corrected, may pose a serious risk. Remediation for Level II Violations shall commence immediately after the permittee(s) is notified of the violation(s). Example Level II Violations include the following:

- Tracking of material onto roadways and adjacent paved areas;
- Failure to make required plan revisions;
- Failure to perform BMP maintenance as directed by the City Land Disturbance Inspector; and
- Failure to correct Level III Violations per the directives of the Land Disturbance Inspector.

7.2.3 Level III Violations

Level III Violations are viewed by the City to pose a low immediate risk to the health, safety, or welfare of people and/or the environment; however, if not corrected quickly, may pose a more serious risk. Level III Violations shall be corrected within 48 hours of inspection unless otherwise specified in writing by the Land Disturbance Inspector. Example Level III Violations include the following:

- Failure to provide routine maintenance for erosion and sediment controls;
- Installation of non-City-accepted erosion and sediment control BMPs;
- Failure to provide temporary inlet protection within 48 hours of pouring of an inlet;
- Failure to provide inlet protection within 48 hours of placement of asphalt or concrete pavement;
- Staging of equipment outside of the stabilized staging area;
- Failure to have accepted Land Disturbance Permit, SWPPP, and inspection forms on site; and
- Failure to follow schedule of installation of BMPs in SWPPP for interim and final BMPs.

7.3 Stop Work Order

The City is authorized to order work to be stopped on any project that disturbs the land that is not in compliance with the requirements of the Land Disturbance Permit. The Stop Work Order form is located in Appendix J. A Stop Work Order may be issued for any Level I Violation.

If a project is issued a Stop Work Order, the City will post the Stop Work Order on the site and all on-site work must be stopped. The posted Stop Work Order will specify what corrective actions are needed before land disturbance activities can continue. Safety-related items (e.g., backfilling of holes and trenches) as well as corrective actions may be completed; however, the permittee(s) shall inform the Land Disturbance Inspector of such activities. The following actions are considered a direct violation of the City's Land Disturbance Code when a Stop Work Order has been issued:

- Removing a posted Stop Work Order by anyone other than an official of the City;
- Continuing land disturbance activities without performing the required corrective actions listed in the Stop Work Order; and
- Not performing the required corrective actions within the time frame specified in the Stop Work Order.

When placed on a permitted site, a Stop Work Order will either suspend or revoke the Land Disturbance Permit for that site. If the permit is suspended, the permittee(s) must perform the tasks stated in the Stop Work Order and obtain a signed Stop Work Order Release Form (Appendix K) from the City before land disturbance activities can continue. An inspection may be required for the City to determine if sufficient corrective actions have been taken. If the permit is revoked, the following steps must be taken:

- Correct the deficient practices that caused the Stop Work Order;
- Reapply for a Land Disturbance Permit and pay the permit fee;
- Call the City to schedule a site inspection; and
- Obtain a new Land Disturbance Permit after approval of the corrected work from a Land Disturbance Inspector.

If the property owner chooses to stop work and not renew a permit after it has been revoked, then the site topography and vegetation must be returned to its original condition within the timeframe stated in the Stop Work Order. If the site is not reestablished within the stated time frame, it is considered a direct violation of the City Land Disturbance Code.

Any person violating any provision of the City Land Disturbance Code shall be deemed guilty of a misdemeanor and each day during which any violation of any of the provisions of this division is committed, continued, or permitted shall constitute a separate offense.

7.4 Default

7.4.1 Default of Permittee

In the event that there is a default by the permittee(s) of any of the requirements of the Land Disturbance Permit, SWPPP, and/or *Land Disturbance Manual*, remedies will be in accordance with the remedies

identified in this *Land Disturbance Manual* and any other remedies provided by law. A default by permittee(s) shall be based on conditions including, but not limited to, the following.

Default Conditions:

- Permittee(s) fails to construct the improvements in substantial compliance with the SWPPP and the other requirements of the Land Disturbance Permit;
- Permittee(s) fails to complete construction of the Land Disturbance improvements by the completion date provided in the schedule of completion in the SWPPP or Permit;
- Permittee(s) fails to fix any noncompliance issues specified in any written notice of noncompliance within the timeframe specified in the notice;
- Permittee(s) breaches or fails to comply with any obligation of the Land Disturbance Permit;
- Permittee(s) becomes insolvent, files a voluntary petition of bankruptcy, is adjudicated as bankrupt pursuant to an involuntary petition in bankruptcy, or a receiver is appointed for the permittee; and
- Permittee(s) fails to maintain in full force and affect a letter of credit in the amounts specified above or in the Land Disturbance Permit.

7.4.2 Notice of Default

If the City, or representative of the City, gives notice that a default by the permittee(s) exists, and if the permittee(s) fails to cure such default within the time specified, the City shall be entitled to: (a) make a draw on the letter of credit for the amount reasonably determined by the City to be necessary to cure the default in a manner consistent with the approved SWPPP up to the face amount of the letter of credit; and (b) sue the permittee(s) for recovery of any amount necessary to cure the default over and above the amount available under the letter of credit.

7.4.3 City Right to Complete Improvements

The City shall have the right to complete the Land Disturbance improvements in substantial accordance with the SWPPP, the opinion of probable costs, and other requirements of this *Land Disturbance Manual*. It can do this either itself, by contract with a third party, or by assignment of its rights to a successor permittee(s) who has acquired the property by purchase, foreclosure, or otherwise. The City, any contractor under contract with the City, or any such successor permittee(s), their agents, subcontractors, and employees shall have the nonexclusive right to enter the subject property for the purpose of completing the Land Disturbance improvements.

7.4.4 Use of Funds by City

Any funds obtained by the City under a letter of credit, or recovered by the City from the permittee(s) by suit or otherwise, will be used by the City to pay the costs of completing the Land Disturbance improvements in accordance with the SWPPP and the other requirements of this *Land Disturbance*

Manual. The funds will also be used to pay the reasonable costs and expenses of the City in connection with the default by the permittee(s), including reasonable attorneys' fees, with the surplus, if any, to be returned to the permittee(s).

8.0 Revisions

This section is intended to provide a location for any revisions and updates to the information in this Manual that may be made available by the City prior to the complete republishing of the Manual.

Any revisions will be dated and will refer back to the section modified. It is suggested that revisions be kept in chronological order within this section.

Date	Section	Revision
December 2021	3.2, 3.3.10, 5.4.1	Revised text for requirements of the new Comprehensive MS4 Permit, effective October 1, 2021.

9.0 Glossary of Terms

Following is a glossary of some of the terms used in this Manual.

Applicant(s) refers to the owner and contractor who complete and sign the Land Disturbance Permit application.

Alternate Land Disturbance Manager refers to an on-site representative who serves, in the absence of the Land Disturbance Manager, as the permittee(s) contact person with the City of Moberly and who is responsible for ongoing compliance with the Land Disturbance Permit.

Best Management Practice (BMP) refers in this Manual to a measure implemented by a contractor to control construction site erosion or sediment.

Concrete Washout Area is a shallow excavation with a small perimeter berm to isolate concrete truck washout operations.

Construction refers to the implementation of a proposed plan of improvements by a contractor that may include excavating, site grading, utility work, paving, building, and other activities that may contribute to the disturbance of land and elevated levels of erosion and sediment.

Construction Fence consists of orange plastic fencing, or other approved material, attached to support posts and used to control access to the construction site and delineate limits of construction.

Design Engineer refers to the professional engineer responsible for the development of the SWPPP.

Development refers to the process of creating new residential, commercial, office, or other land uses through the process of construction.

Dewatering consists of a gravel filter provided on the suction end of a pump to reduce the pumping of sediment and a riprap pad at the discharge end of the pump to provide erosion protection. Dewatering includes settling the discharge water in a small basin or sediment pond before releasing to receiving waters.

Diversion Ditch is a small earth channel used to divert and convey runoff to a sediment basin, check dam, or drainageway. Depending on slope, the diversion swale may need to be lined with erosion control matting, plastic (for temporary installations only), or riprap.

Drainageway is any natural or artificial watercourse including, but not limited to, streams, rivers, creeks, ditches, channels, canals, waterways, gullies, ravines, or washes in which water flows in a definite direction or course, either continuously or intermittently, including any area adjacent to it that is subject to inundation by reason of overflow or floodwater and meets any of the following conditions:

- Provides for conveyance of stormwater runoff from an upstream property or development.

- Defined as "waters of the United States" by the USACE.
- Supports riparian area or sensitive habitat.
- Tributary area equal to or greater than 20 acres.
- Alternation or filling will change the manner in which runoff is discharged onto a downstream property and potentially results in a negative impact to that downstream property.

Erosion is the process by which the land surface is worn away by the action of wind, water, ice, and gravity.

Export means transporting material from a construction site to another location.

Fiscal Security refers to an irrevocable letter of credit that an owner submits to the City of Moberly to be held as security during the construction process and to be drawn upon in the case of nonperformance on the part of the permittee(s).

Import means transporting material from an off-site area to the project site to be used as fill.

Inlet Protection consists of a reinforced rock berm placed in front of (but not blocking) a curb opening inlet or around an area inlet to reduce sediment in runoff entering the inlet.

Land Disturbance Inspector refers to the City of Moberly representative who visits construction sites to check for compliance with the Land Disturbance Permit.

Land Disturbance Manager refers to an on-site representative who serves as the permittee(s)' contact person with the City of Moberly and who is responsible for ongoing compliance with the Land Disturbance Permit.

Land Disturbance Permit refers to the permit obtained from the City of Moberly prior to commencement of land-disturbing activities as defined in the City of Moberly's *Land Disturbance Manual*.

Land Disturbance Permit Process refers to the process **applicants** proceed through to obtain a permit to commence land-disturbing activities within the City of Moberly.

Land Disturbance Permit Program refers to the program developed and administered by the City of Moberly to regulate land-disturbing activities within the unincorporated limits of the City of Moberly.

Level I Violations are viewed by the City of Moberly to pose an immediate serious risk to the health, safety, or welfare of people and/or the environment and result in an immediate issuance of a stop work order.

Level II Violations are viewed by the City of Moberly to pose a moderate immediate risk to the health, safety, or welfare of people and/or the environment; however, if not immediately corrected, will pose a serious risk. Remediation for Level II Violations shall commence immediately after the permittees are notified of the violation(s).

Level III Violations are viewed by the City of Moberly to pose a low immediate risk to the health, safety, or welfare of people and/or the environment; however, if not corrected quickly, will pose a more serious risk. Level III Violations shall be corrected within 48 hours of inspection unless otherwise specified in writing by the **Land Disturbance Inspector**.

Limits of Construction refers to the area shown on the SWPPP that delineates areas in which construction activities can take place including staging, storage, and stockpiling.

Moberly Public Utilities refers to the department within the City of Moberly that has the authority and responsibility to manage, enforce, and regulate stream buffer activities within the City of Moberly.

Permittee(s) refers to the owner and contractor who obtain a Land Disturbance Permit.

Professional Engineer refers to an individual currently registered with the Missouri State Board of Registration as a professional engineer, practicing engineering in accordance with state law.

Reinforced Rock Berm consists of a linear mass of gravel enclosed in wire mesh to form a porous filter, able to withstand overtopping. The berm is heavy and stable and promotes sediment deposition on its upstream side as well as reducing flow velocities.

Rolled Erosion Control Product is a fibrous blanket of straw, jute, excelsior, or coconut material trenched in and staked down over prepared, seeded soil. The matting reduces both wind and water erosion.

Sediment Basin refers to an impoundment that captures sediment-laden runoff and releases it slowly, providing prolonged settling times to capture coarse and fine-grained soil particles.

Sediment Trap consists of a riprap berm with a small upstream basin that acts to trap coarse sediment particles.

Sedimentation means the deposition of soil particles dislodged by erosion.

Seeding and Mulching consists of seeding disturbed areas with permanent grasses and spreading straw mulch to provide immediate protection against raindrop and wind erosion and, as the grass cover becomes established, to provide long-term stabilization of exposed soils.

Silt Fence is a temporary sediment barrier constructed of woven fabric stretched across supporting posts. The bottom edge of the fabric is placed in an anchor trench that is backfilled with compacted soil.

Stabilized Staging Area refers to stripping topsoil and spreading a layer of granular material in the area to be used for a trailer, parking, storage, unloading, and loading. A stabilized staging area reduces the likelihood that the vehicles most frequently entering a site are going to come in contact with mud.

Stop Work Order refers to a written notice provided by the City of Moberly's **Land Disturbance Inspector** that revokes a Land Disturbance Permit as a result of a priority violation. Contractors receiving a Stop Work Order shall cease construction operations until the problem is addressed and a signed Stop Work Order Release Form is obtained.

Stormwater means runoff generated as a result of a precipitation event.

Stormwater Pollution Prevention Plan (SWPPP) refers to the complete package of required information submitted to the City of Moberly for review and acceptance, which include drawings, Land Disturbance report, Report Checklist, and Option of Probable Cost Example Worksheet.

Temporary Slope Drain refers to a small culvert or plastic lined channel to convey runoff down a slope or channel bank to reduce the occurrence of rill and gully erosion.

Temporary Stream Crossing refers to a rock layer placed temporarily in a stream to allow construction equipment to cross. A stream crossing may include culverts or provide a low-water crossing, or ford. In either case, excavation of the existing channel banks is to be avoided and, in general, disturbance is to be kept to a minimum.

Terracing consists of creating one or more flat benches in high, steep cut or fill slopes to interrupt runoff and reduce the formation of rill and gully erosion.

Vehicle Tracking Control consists of a pad of 3" to 6" rock at all entrance/exit points for a site that is intended to help strip mud from tires prior to vehicles leaving the construction site.

10.0 References

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- United States Environmental Protection Agency. National Menu of Stormwater Best Management Practices. 9 Jan. 2008. <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>.

Appendices

Appendix A

Contact List

Contact Information

(Information is subject to change)

City of Moberly Public Utilities Department

101 West Reed Street
Moberly, MO 65270
Phone: (660) 269-8705

Missouri Department of Natural Resources

Northeast Regional Office
1709 Prospect Drive
Macon, MO 63552
Phone: (660) 385-8000
Fax: (660) 385-8090

U.S. Army Corps of Engineers – Kansas City District

Missouri State Regulatory Office
221 Bolivar Street, Suite #103
Jefferson City, MO 65101
Phone: (573) 634-2248
Fax: (573) 634-7960

Appendix B

Required Checklist for Preliminary Acceptance of SWPPP

Required Checklist for Acceptance of SWPPP



A. Addressing the Ten Elements of an Effective SWPPP & Overall Design Intent

Element 1: Identify and Protect Environmentally Sensitive Areas.

- ☐ yes ☐ no 1. Conduct site visit and identify on the drawings the sensitive areas such as the following:
☐ yes ☐ no a. Sinkholes or caves. If sinkhole exists on site or disturbed area drains to an off-site sinkhole, it should be shown on all drawings and any area draining to the sinkhole should not be disturbed unless approved by the City.
☐ yes ☐ no b. Losing streams (may require a hydrogeological evaluation from the Missouri Geological Survey).
☐ yes ☐ no c. Forested areas (not to be disturbed).
☐ yes ☐ no d. Single trees (not to be disturbed).
☐ yes ☐ no e. Steep slopes (not to be disturbed).
☐ yes ☐ no f. Potential stormwater infiltration areas.
☐ yes ☐ no g. Other areas deemed sensitive by the City of Moberly.
☐ yes ☐ no 2. Endeavor to avoid, or minimize, disturbance to the sensitive areas identified above.
☐ yes ☐ no 3. Show construction fence or, if approved, construction markers to delineate the limits of construction adjacent to sensitive areas.

Element 2: Stabilize Drainage Ways

- ☐ yes ☐ no 1. Identify waterbodies (streams, rivers, or lakes) within city limits and protect on site with a buffer.
☐ yes ☐ no 2. Show construction fence or, if approved, construction markers to delineate the limits of construction adjacent to stream buffer.
☐ yes ☐ no 3. All drainageways, ditches, and any other concentrated flow areas are stabilized during and after land disturbance.

Element 3: Balance Earthwork on Site (Total or for Each Phase)

- ☐ yes ☐ no 1. Endeavor to balance earthwork quantities on site through the following tasks:
☐ yes ☐ no a. Develop initial grading plan.
☐ yes ☐ no b. Check earthwork quantities for balance.
☐ yes ☐ no c. Raise or lower portions of the site as necessary to try to balance earthwork.
☐ yes ☐ no d. Repeat steps b and c until balance is achieved.
☐ yes ☐ no 2. If it is impossible to balance earthwork quantities on site, prepare letter requesting variance.

Element 4: Limit the Size of Grading Phases to Reduce Soil Exposure

- ☐ yes ☐ no 1. For large projects, determine separate grading phases, each disturbing less than 40 acres.
☐ yes ☐ no 2. Consider separate grading phases for any project size in order to minimize the amount of area being disturbed at any one time.
☐ yes ☐ no 3. Balance earthwork for each phase following the guidance from Element 3, above.

Element 5: Stabilize Exposed Soils in a Timely Manner

- ___ yes ___ no 1. Allow adequate space for topsoil stockpiles.
- ___ yes ___ no 2. Adequately provide stabilization within 14 calendar days after disturbance has temporarily or permanently ceased.

Element 6: Implement Effective Perimeter Controls**A. Upslope Perimeters.**

- ___ yes ___ no 1. Determine areas upslope of the land disturbance that will generate stormwater runoff and will enter the site. Determine if it is entering the site as sheet flow or concentrated flow. Determine if the stormwater should be ponded upslope of the disturbed area or conveyed around or through the land disturbance area as stabilized concentrated flow.
- ___ yes ___ no a. Determine storage requirements behind BMP(s) if ponding upslope stormwater is the proposed method.
- ___ yes ___ no b. Ensure upslope stormwater is conveyed in a stable ditch or drainageway (concentrated flow area), if moving stormwater through or around the land disturbance area is proposed.

NOTE: Upslope stormwater does not need to be treated by a ponding BMP or sedimentation facility if it can be conveyed away from or around the land disturbance areas.

B. Downslope Perimeters.

- ___ yes ___ no 1. Determine the size of sheet flow areas draining to a downslope perimeter or a concentrated flow area. Locate all concentrated flow areas that are disturbed, proposed, or existing. Determine if stormwater from disturbed areas draining to the downslope perimeter is treated or untreated. Treated means all stormwater from disturbed areas has been ponded by a BMP or went through a sedimentation facility.
- ___ yes ___ no a. Check to ensure all ditches or drainageways that are disturbed, proposed, or existing are made stable.
- ___ yes ___ no b. Check to ensure all untreated stormwater is ponded by a BMP or flows through a sedimentation facility.

Element 7: Use Sedimentation Basins

- ___ yes ___ no 1. Runoff from all disturbed areas is treated in a sedimentation facility or ponding BMP, when applicable. In the case sedimentation facilities are used in an area to be treated greater than 1.0 acre, they shall be treated in a sediment basin.
- ___ yes ___ no 2. Wherever possible, sediment basins are to be located within any permanent water quality or quantity detention facilities.

Element 8: Protect Steep Slopes from Erosion**A. Proposed Slopes Shall be no Steeper than 3 to 1.**

- ___ yes ___ no 1. Ensure that no proposed slopes are steeper than 3H to 1V unless otherwise approved by the City of Moberly.
- ___ yes ___ no 2. Show erosion control blanket on slopes steeper than 4 to 1.

B. Runoff Shall be Diverted Away from Steep Slopes.

- ___ yes ___ no 1. Use diversion ditch or temporary slope drains at the top of steep slopes to capture runoff before it flows down the slope.

C. Terracing Shall be Incorporated into the Grading of Steep Slopes.

- ___ yes ___ no 1. Use terracing in steep slopes to break up the flow of incidental water and reduce the development of rill and gully erosion runoff before it flows down the slope.

Element 9: Protect Inlets and Outlets of Storm Sewers and Culverts

- ___ yes ___ no 1. Show inlet protection at all street and area inlets.
- ___ yes ___ no 2. Show culvert protection, temporary at culvert inlets and temporary or permanent at culvert outlets.
- ___ yes ___ no 3. Design outlet protection for all storm sewer outfalls and culvert outlets.
- ___ yes ___ no 4. Show immediate method of stabilization in stream areas disturbed by the construction of the outfall or culvert.

Element 10: General Construction Control BMPs

- ___ yes ___ no 1. Identify all limits of construction. Use construction fence or construction markers to delineate the limits of construction.
- ___ yes ___ no 2. Provide one or more vehicle tracking controls at all entrance/exit points from a public street to the site.
- ___ yes ___ no 3. Show a stabilized staging area near the main access point.
- ___ yes ___ no 4. Show a concrete washout area near all concrete work areas.
- ___ yes ___ no 5. Show temporary access roads and stockpile areas.
- ___ yes ___ no 6. Show locations of all storage and staging areas for equipment, fuel, waste, chemicals, off-site materials, and temporary restrooms.
- ___ yes ___ no 7. Select areas for the vehicle tracking control, stabilized staging area, access roads, and stockpile areas that avoid disturbance to trees, desirable vegetation, steep areas, and low, wet areas.

B. SWPPP Drawings

1. Cover Sheet

- ☐ yes ☐ no 1. Project name.
☐ yes ☐ no 2. Project address (if applicable).
☐ yes ☐ no 3. Owner's contact information.
☐ yes ☐ no 4. Design firm's contact information.
☐ yes ☐ no 5. Plan sheet index.
☐ yes ☐ no 6. Designer's signature block.
☐ yes ☐ no 7. The following note:
 I, property owner's signature, assume and acknowledge any land clearing, construction, or development involving the movement of earth shall be in accordance with the SWPPP. I will maintain a current copy of the SWPPP on the site in a location visible to anyone entering the site. This will allow City personnel to perform quality assurance inspections when no one representing the SWPPP is on site. I will also maintain all site inspections with the SWPPP on site. I understand that the SWPPP is developed to protect the water quality to the maximum extent practicable and this may require modification to the SWPPP during the duration of the project. I understand the project and this SWPPP meet all applicable local, state, and federal requirements. If the representative of the City of Moberly, the Land Disturbance Manager, or the designer of the SWPPP, notifies me that the SWPPP needs to be amended, I will notify the engineer of the SWPPP to ensure recommendations are considered.
- ☐ yes ☐ no 8. SWPPP Designer's signature block with name, date, and Professional Engineer registration number. Signature block shall include the following note:
 I, signature of P.E., certify that the SWPPP has been developed to minimize erosion and reduce sediment from entering any state, city, or privately owned waters to the maximum extent practicable. I have verified any special conditions for this site and have incorporated such into the SWPPP. I shall amend the SWPPP whenever the current SWPPP does not meet state standards for stormwater outfall requirements, site conditions change BMP requirements, excessive amounts of erosion have occurred, and/or noticeable sediment has left the site. I understand that the SWPPP is developed to protect the water quality to the maximum extent practicable, and this may require modification to the SWPPP during the duration of the project. If the owner of properties name or Land Disturbance Manager contacts me to update or change the SWPPP and I agree, then the SWPPP will be updated within 72 hours of noted need of change to the SWPPP. If I disagree with amending the SWPPP and the changes are not required by federal, state, or City requirements, then it should be noted that I take liability for any degradation of water quality that may occur by not making the requested amendment to the SWPPP. If changes are made to the SWPPP, I will publish all changes to the SWPPP with an indicator to all parties as to which copy is current.

- ___ yes ___ no 9. The following note:
 I, signature of Land Disturbance Manager, am the agent of owner of properties name to ensure that this site is in accordance with the SWPPP. I will perform site inspections at least once per week by Thursday so that corrections can be made before the end of Friday and no later than 72 hours after a half inch or more of rainfall in 24 hours. These site inspections will be recorded on a Land Disturbance Inspection form located in the City of Moberly *Land Disturbance Manual*. The purpose of such inspections will be to ensure proper installation, operation, and maintenance of BMPs as well as to determine the overall effectiveness of the SWPPP and the need for any additional control measures. If changes to the SWPPP are required I will notify the owner of properties name and Name of P.E. within 24 hours.
- ___ yes ___ no 10. The following note:
 The SWPPP included herein has been placed in the Moberly File for this project and appears to fulfill applicable Moberly land disturbance criteria, as amended. Additional erosion and sediment control measures may be required of the permittee(s) due to unforeseen erosion problems or if the submitted SWPPP does not function as intended. The requirements of this SWPPP shall be the obligation of the permittee(s) until such time as the SWPPP is properly completed, modified, or voided.
- ___ yes ___ no 11. City Acceptance Block.
- ___ yes ___ no 12. General Location Map at a Scale of 1-inch to 1000- feet to 8000-feet indicating:
- general vicinity of the site location.
 - major roadway names.
 - north arrow and scale.

2. SWPPP Drawing Index Sheet

For projects that require multiple plan-view sheets to adequately show the project area (based on the specified scale ranges), a single plan-view sheet shall be provided at a scale appropriate to show the entire site on one sheet. Areas of coverage of the multiple blow-up sheets are to be indicated as rectangles on the index sheet.

3. Initial SWPPP Plan Sheet

This plan sheet shall provide erosion and sediment controls for the initial clearing, grubbing, and grading of a project. The layout and design of the initial BMPs should be based off the existing topography at the limits of construction. The initial SWPPP should include BMPs for perimeter control to ensure sediment does not leave the site to the maximum extent possible. The initial BMPs will be placed at the same time and prior to the on-site pre-construction meeting and the signing of the Land Disturbance permit application. At a minimum, it shall contain:

- ☐ yes ☐ no 1. Property Lines.
- ☐ yes ☐ no 2. Existing and proposed easements.
- ☐ yes ☐ no 3. Existing topography at one foot contour intervals, extending a minimum of 100 feet beyond the property line.
- ☐ yes ☐ no 4. Location of any existing structures or hydrologic features within the mapping limits.
- ☐ yes ☐ no 5. USGS or other Benchmark used for project.
- ☐ yes ☐ no 6. Limits of construction showing all areas of land disturbance. Stream buffer, sinkhole drainage area, and other sensitive resource areas to be preserved and all other areas outside the limits of land disturbance shall be lightly shaded to clearly show area not to be disturbed.
- ☐ yes ☐ no 7. Location of vehicle tracking control, storage, and staging areas for equipment, fuel, lubricant, chemicals, and waste storage or other off-site materials, and temporary restrooms.
- ☐ yes ☐ no 8. Location of temporary roads if needed.
- ☐ yes ☐ no 9. Location of initial BMPs. BMP IDs to include: symbol, detail number, two to three letter abbreviation, BMP intent, and BMP number.
- ☐ yes ☐ no 10. Design parameters of each BMP placed under BMP ID on initial SWPPP. Nonstandard BMPs must also include design parameter in line with standard design parameters.
- ☐ yes ☐ no 11. Moberly acceptance block.
- ☐ yes ☐ no 12. Other information as may be reasonably required by Moberly.

4. Interim SWPPP Plan Sheet

This plan sheet shows BMPs to control erosion and sediment during and after grading, site construction, and site revegetation process. This plan sheet will include BMPs within the perimeter and any modifications to the perimeter BMPs due to the proposed grading. The interim BMPs will not all be placed at the same time. Therefore a schedule of installation will be within the construction notes on the plan sheet for each BMP number that is installed. At a minimum, it shall contain the following information.

The Interim SWPPP shall show all the information included on the Initial SWPPP, as noted below:

- ___ yes ___ no 1. Existing topography at one foot contour intervals extending a minimum of 100 feet beyond the property line, as shown on Initial SWPPP.
- ___ yes ___ no 2. Location of all existing erosion and sediment control measures on site, as shown on the Initial SWPPP Sheet. Design parameters for initial stage BMPs shall not be shown. If any of the initial BMPs will be moved or removed during the interim plan, the construction notes should state the BMP number and when they the action should occur.
- ___ yes ___ no 3. All items from the Initial SWPPP are shown on this Plan.

In addition, the Interim SWPPP shall include the following:

- ___ yes ___ no 4. Proposed topography at one foot contour intervals, showing elevations, dimensions, locations, and slope of all proposed grading.
- ___ yes ___ no 5. Location of interim BMPs, BMP IDs to include: symbol, detail number, two- to three-letter abbreviation, BMP intent, and BMP number. The BMP number is used for a reference number when construction notes need to call out specifics or sequencing to that BMP.
- ___ yes ___ no 6. Locations of all buildings, drainage features and facilities, paved areas, retaining walls, water quality facilities, or other permanent features to be constructed in connection with, or as a part of, the proposed work, per approved building permit.
- ___ yes ___ no 7. The following note:
- Shaded BMPs were installed in initial stage and shall be left in place in interim stage (not moved or removed)
- ___ yes ___ no 8. All interim BMP numbers. Have corresponding notes on the sheet to include: when to install, installation or maintenance details specific to that BMP number that are not covered in standard detail notes.
- ___ yes ___ no 9. Locations of temporary and permanent access locations.
- ___ yes ___ no 10. Summary of cut and fill volumes.
- ___ yes ___ no 11. Moberly acceptance block.
- ___ yes ___ no 12. Other information or data as may be reasonably required by Moberly.

5. Final SWPPP Plan Sheet

This plan sheet shows controls for final completion of the site. The final BMPs may not all be placed at the same time. Therefore a schedule of installation will be within the construction notes on the plan sheet for each BMP number that is installed. All final BMPs will be installed prior to initial close-out inspection. At a minimum, this plan sheet shall contain the indicated information.

The Final SWPPP shall include all information shown on the Initial and Interim Plans, as noted below:

- ☐ yes ☐ no 1. Existing topography in areas of proposed contours are not shown.
☐ yes ☐ no 2. Direction(s) of stormwater flow after grading activities.
☐ yes ☐ no 3. Existing Initial and Interim BMPs shall be shown. Design parameters shall not be shown. If any of the initial or interim BMPs will be moved or removed during the final plan the construction notes should state BMP number and when they the action should occur.

In addition, the following information shall be shown:

- ☐ yes ☐ no 4. Location of final BMPs, BMP IDs to include: symbol, detail number, two to three letter abbreviation, BMP intent, and BMP number. The BMP number is used for a reference number when construction notes call out specifics to that BMP. All final BMPs (including seeding and mulching of any areas not stabilized in the Interim Plan), permanent landscaping, and measures necessary to minimize the movement of sediment off site until permanent vegetation can be established.
☐ yes ☐ no 5. Show area of buildings, pavement, sod, and permanent landscaping per approved site plan for building permit or other drawing required for City approval.
☐ yes ☐ no 6. Show final stabilization methods everywhere except buildings and pavement areas.
☐ yes ☐ no 7. Show surface water buffers.
☐ yes ☐ no 8. Show permanent access locations.
☐ yes ☐ no 9. Show other BMPs considered by the designer to be appropriate.
☐ yes ☐ no 10. State in construction notes all BMPs to be removed along with when they are to be removed.
☐ yes ☐ no 11. Include the following note:
 • Shaded BMPs were installed in initial or interim SWPPP and, unless otherwise indicated, shall be left in place until revegetation establishment is approved by the City.
☐ yes ☐ no 12. Moberly acceptance block.
☐ yes ☐ no 13. Other information as may be reasonably required by Moberly.

6. Moberly General Notes and Details

These sheets show general notes and details for each BMP shown in the drawings.

Notes and details shall include at a minimum:

- ☐ yes ☐ no 1. SWPPP general notes, detail number of all included BMPs, sheet number of BMP detail, BMP symbol and name for all included BMPs.
☐ yes ☐ no 2. All non-standard BMPs added to drawings have been approved by the City.
☐ yes ☐ no 3. All BMPs standard and non-standard include enough detail for the contractor to properly construct them.
☐ yes ☐ no 4. All BMPs standard and non-standard include installation notes and maintenance notes.

C. Submittals for Acceptance of SWPPP

These submittals shall contain the following information:

- ☐ yes ☐ no 1. SWPPP that addresses all of Section A of this checklist.
☐ yes ☐ no 2. SWPPP that addresses all of Section B of this checklist.
☐ yes ☐ no 3. This checklist completely filled out and signed by the design engineer.
☐ yes ☐ no 4. Probable BMP cost worksheet.

D. Signing of this Checklist by the Design Engineer

I, _____ as a licensed professional engineer in the State of Missouri certify that the SWPPP has been developed to minimize erosion and reduce sediment from entering any state, city, or privately owned waters to the maximum extent practicable. I have verified any special conditions for this site and have incorporated such into the SWPPP. I have addressed all of the items within this checklist and the Moberly *Land Disturbance Manual*. I understand this SWPPP is in compliance with all applicable permits, including state and federal permits.

Affix professional engineer seal below then sign and date.

Appendix C

Land Disturbance Permit Application

LAND DISTURBANCE PERMIT APPLICATION

MOBERLY, MO

PROPERTY OWNER	CONTRACTOR
Name:	Name:
Address:	Address:
Contact Name: Phone:	Contact Name: Phone:
Acres (Including grading/excavation/fill):	Estimated material volume _____ cubic yard(s)
Project Name:	
Location:	
<p>By signing below, both applicants hereby apply for a Moberly Land Disturbance Permit for the aforementioned property and certify as follows:</p> <ol style="list-style-type: none"> 1. To the best of my/our knowledge, the information provided herein is correct; 2. A SWPPP for the disturbed area on this site was prepared and submitted in accordance with the <i>Land Disturbance Manual</i>, all local, state, and federal permits; and 3. I certify I am legally authorized to sign on behalf of and bind the above-listed entity. <p>The Land Disturbance Permit is granted with the explicit understanding that it is the Permittee's responsibility to:</p> <ol style="list-style-type: none"> 1. Allow the City of Moberly unrestricted access to the site to conduct regular site inspections; 2. Comply with all requirements of the <i>Land Disturbance Manual</i>, accepted SWPPP, and Land Disturbance Permit; 3. Comply with all local, state, and federal requirements; 4. Immediately cease land-disturbing activities upon receipt of a written Stop Work Order from an authorized representative of the City of Moberly. A Stop Work Order shall be issued and this permit revoked if the Permittee(s) are not in compliance with the Land Disturbance Permit, SWPPP, and /or <i>Land Disturbance Manual</i>, or the permittee(s) fail to take corrective action within the time specified on the written notification of such non-compliance. 	
PROPERTY OWNER	CONTRACTOR
Signature:	Signature:
Print Name:	Print Name:
Date:	Date:

PERMIT APPROVAL (CITY USE ONLY)					WS #3.
Base Fee: \$250.00	Additional cost: \$25 x _____ disturbed acres = \$_____	Base Fee:	\$_____	Renewal <input type="checkbox"/>	\$100
		Permit Fee:	\$_____	Transfer <input type="checkbox"/>	\$100
		Total Fee:	\$_____		
Date Paid: _____		Amount: _____		<input type="checkbox"/> Check (list check # _____) <input type="checkbox"/> Cash	
Engineer's Estimate \$_____ x 1.15 = Total Security \$_____				Security Received: <input type="checkbox"/> Y <input type="checkbox"/> N	
Date SWPPP Accepted: _____					
STAFF APPROVAL					
Name: _____			Title: _____		
Signature: _____			Date: _____		

Appendix D

Land Disturbance Permit Fees

Permit Fees

Below is a list of the basic fees that apply to the Moberly Land Disturbance Program.

Standard Land Disturbance Permit Fee: \$250 + \$25 per acre

Renewal Fee: \$100

Transfer Fee: \$100

Re-Inspection Fee: \$50

If found working without a City-issued permit, a fee of three times the Initial Permit Fee will be imposed.

Appendix E

Opinion of Probable Cost Example Spreadsheet

[illegible]

Appendix F

Irrevocable Letter of Credit Form

IRREVOCABLE LETTER OF CREDIT

We hereby authorize you to draw on _____
(Bank name)

(Street) (City) (State)

_____, for the account of _____
(ZIP code) (Customer name)

(Street) (City) (State)

_____, up to an aggregate amount of _____
(ZIP code) (Dollars)

(\$ _____) available by your drafts at sight accompanied by a certificate purportedly signed by the City of Moberly stating:

- (1) that Moberly is entitled to draw under this Letter of Credit pursuant to that certain Agreement dated _____, 20____, between the City of Moberly and _____; and
(Customer name)
- (2) the amount of money to be drawn on this Letter of Credit.

This Letter of Credit shall expire on _____, 20____. This letter shall expire prior to said date if _____ received a release purportedly signed by the City stating that all or a portion of this Letter of Credit is to be released.

All drafts drawn under this Letter of Credit are to be endorsed hereon and shall bear the clause DRAWN UNDER _____
(Bank name - must be drawable within Moberly)

LETTER OF CREDIT NO. _____, DATED _____.

We hereby agree with the drawers, endorsers, and bona fide holders of drafts drawn under and in accordance with the terms of this Letter of Credit that said drafts shall be duly honored on presentation to us at our office specified above on or before the expiration date. Further, we agree that all fees associated with this letter of credit shall not be the responsibility of Moberly.

(Bank name)

By: _____
(Authorized signature)

Appendix G

Responsible Party Designation Form

RESPONSIBLE PARTY DESIGNATION

Site name: _____ Date: _____

I have been designated the on-site Land Disturbance Manager/Alternate Land Disturbance Manager. I am responsible for maintaining and repairing all erosion and sedimentation controls on the approved site. Additionally, I have read and understand the *Land Disturbance Field Manual* and understand not all City of Moberly requirements are included in the *Land Disturbance Field Manual*. It is my responsibility to ensure compliance with the *Land Disturbance Manual*, Land Disturbance Permit, and accepted SWPPP. I additionally understand I shall be on site the majority of the time and must be able to be reached by the below given phone number 24 hours a day. I reviewed installation sequencing of BMPs in the construction notes of the SWPPP and have identified if any final stabilization will not occur within 30 days from the start of earthmoving activities or within 15 days of substantial completion of grading. If this stabilization will not occur within the required time, I have attached a schedule of completion of stabilization to this sheet. This sheet will be reviewed to ensure that it presents detailed steps of stabilization in a phased format.

Printed Name: _____ Company: _____

Telephone Number: _____ Mobile Number: _____

Signature: _____ Date: _____

Alternate Land Disturbance Manager: _____ Phone #: _____

Signature: _____ Date: _____

I, being the owner/owner's representative understand it is my responsibility to ensure my Land Disturbance Manager understands and complies with all applicable Moberly criteria and will ensure if I change contractors or the Land Disturbance Manager is removed from this project, the new contractor will contact Moberly to receive the information listed in the *Land Disturbance Field Manual* and become designated as the new on-site Land Disturbance Manager. I further understand the permittee(s), as listed on the Land Disturbance Permit, shall remain the legally responsible party(s).

Printed Name: _____ Company: _____

Telephone Number: _____ Mobile Number: _____

Signature: _____ Date: _____

Appendix H

Land Disturbance Inspection Forms

H1 – City Inspection Form

H2 – Land Disturbance Manager Inspection Form

Land Disturbance City Inspection Report

Moberly, MO



Level I violations shall result in issuance of a Stop Work Order and revocation of the Land Disturbance Permit, **Level II violations** shall be corrected immediately upon receipt of this inspection form, and **Level III violations** shall be corrected within 48 hours unless otherwise directed by the City Stormwater Coordinator.

Failure to complete the Level II or Level III violations, as directed below, may result in issuance of a Level I violation and Stop Work Order. This inspection report shall be kept on site and made available to the Stormwater Coordinator upon request until final acceptance is granted.

Project:	Date of Inspection:
Contractor:	Report No:
Owner/Permittee:	Permit No:

Others Present (List title; print and sign name):

- 1.
- 2.
- 3.

Plans on site:

Weekly inspections on site:

Weekly inspections up to date:

of BMPs currently installed:

BMP Description	Maintenance Required?		Course of Action Required	Date Items to be Completed	Date Completed
	Yes	No			

Comments:

Land Disturbance Manager : _____

and/or Alternate Land Disturbance Manager : _____

Name

Signature

Land Disturbance Manager Inspection Report

Moberly, MO



Level I violations shall result in issuance of a Stop Work Order and revocation of the Land Disturbance Permit, **Level II violations** shall be corrected immediately upon receipt of this inspection form, and **Level III violations** shall be corrected within 48 hours unless otherwise directed by the City Stormwater Coordinator.

Failure to complete the Level II or Level III violations, as directed below, may result in issuance of a Level I violation and Stop Work Order. This inspection report shall be kept on site and made available to the Stormwater Coordinator upon request until final acceptance is granted.

Project:	Date of Inspection:
Contractor:	Report No:
Owner/Permittee:	Permit No:

Others Present (List title; print and sign name):

- 1.
- 2.
- 3.

Plans on site:

Weekly inspections on site:

Weekly inspections up to date:

of BMPs currently installed:

BMP Description	Maintenance Required?		Course of Action Required	Date Items to be Completed	Date Completed
	Yes	No			

Comments:

Land Disturbance Manager : _____

and/or Alternate Land Disturbance Manager : _____

Name

Signature

Appendix I

Release of Fiscal Security

RELEASE OF SECURITY LAND DISTURBANCE PERMIT

Date:_____ **File Number:**_____

Project Name:_____

Location:_____

Amount of Security:_____

Date of Approval of Final Closeout Inspection:_____

Appendix J

Stop Work Order

STOP WORK ORDER

All work on site must be stopped in accordance with the Moberly Land Disturbance Ordinance and Section 7 of the *Land Disturbance Manual*.

Due to violations according to the City of Moberly Land Disturbance Ordinance and *Land Disturbance Manual*, the Land Disturbance Permit has been:

☐ Suspended

☐ Revoked

The following corrective actions need to be taken within the next ____ days:

Once the required actions have been taken, the City of Moberly should be contacted in order to verify that all requirements have been met. This stop work order may not be removed by anyone other than an official of the City of Moberly.

Authorized By: _____
signature
title
date

Appendix K

Stop Work Order Release

RELEASE OF

Stop Work Order

The Stop Work Order dated _____ is hereby released. All requirements of the Stop Work Order have been met to the satisfaction of the City of Moberly.

If the land disturbance permit was **suspended** by the Stop Work Order, it is hereby reinstated. If the land disturbance permit was **revoked**, you must re-apply for the land disturbance permit and pay the permit fee.

Authorized By: _____
(date) (signature) (title)

Municipal Separate Storm Sewer System (MS4) Stormwater Management Plan (SWMP)

City of Moberly, Missouri

Prepared for
City of Moberly, Missouri

December 2021

City of

Moberly!

Municipal Separate Storm Sewer System (MS4) Stormwater Management Plan (SWMP)

December 2021

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List of Attachments

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Attachment B	Chapter 34 of the City of Moberly's Code of Ordinances
Attachment C	City of Moberly's Illicit Discharge Detection and Elimination Plan
Attachment D	MS4 Outfall Report and Map
Attachment E	Department Trainings
Attachment F	Missouri DNR MS4 Reporting Form MO 780-1846

Abbreviations and Acronyms

BMP(s)	Best Management Practice(s)
CSO	combined sewer overflow
IDDE	Illicit Discharge Detection and Elimination
MCM(s)	Minimum Control Measure(s)
MDNR	Missouri Department of Natural Resources
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SOPs	standard operating procedures
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
WWTP	Wastewater Treatment Plant

1 Introduction

1.1 Location

The City of Moberly (City), which covers approximately 12 square miles, is located in Randolph County in north central Missouri. As of the 2010 census, Moberly had a population of 13,974. While the majority of land use in Moberly is commercial and residential, significant manufacturing industries are also present within the city limits.

The City is a Municipal Separate Storm Sewer System (MS4) community with a Phase II MS4 National Pollutant Discharge Elimination System (NPDES) General Permit (MO-R040030) issued by the Missouri Department of Natural Resources (MDNR). The City developed its Stormwater Management Plan (SWMP) as a measure to implement this program and comply with their permit. The SWMP describes the City's approach to implementing best management practices (BMPs) for each of the six minimum control measures (MCMs), as outlined in the City's MS4 Missouri State Operating Permit and described in Section 1.2.

The City owns and operates a water treatment plant and distribution system as well as a wastewater treatment plant (WWTP) and collection system. The City has a separate NPDES permit (No. MO-0117960) for the WWTP and combined sewer overflow (CSO) discharges. Treated effluent discharges from the WWTP to the tributary to Coon Creek from Outfall 001 (refer to Table 1-1). The City utilizes combined sewers, in which stormwater runoff is collected in portions of the City's sewage collection system and is treated at the WWTP or directly discharged at CSO. The City operates two CSO storage lagoons, permitted as CSO discharge points, that provide storage and primary treatment for the combined sewage and stormwater during rain events. The permitted CSO outfalls from the lagoons only discharge when the system storage capacity is exceeded. Water from four of Moberly's CSOs (#002-005) is pumped back to the collection system from storage and treated at the WWTP. During high flows, these outfalls may discharge to the surface waters listed in Table 1-1.

Four major streams and their tributaries receive stormwater from the City, including Coon Creek, Sweet Springs Creek, Sugar Creek, and the Elk Fork of the Salt River. Coon Creek and its tributaries receive stormwater from the southeastern part of the City, the Elk Fork of the Salt River and its tributaries receive stormwater from the northeastern part of the City, Sugar Creek and its tributaries receive stormwater from the northwestern part of the City, and Sweet Springs Creek and its tributaries receive stormwater from the southwestern part of the City. The City is not subject to any total maximum daily loads (TMDL) for the receiving waterbodies. Table 1-1 and Table 1-2 identify the outfall locations for NPDES permitted discharges from the City.

Table 1-1 MO-0117960 Outfall Locations and Receiving Waters

Outfall	Source of Discharge	UTM	Receiving Water
001	Municipal Wastewater	X=553968, Y=4364335	Tributary to Coon Creek
002	Combined Sewer Overflow	X=549992, Y=4363712	Tributary to Coon Creek
003	Combined Sewer Overflow	X=550339, Y=4363535	Tributary to Coon Creek
004	Combined Sewer Overflow	X=546585, Y=4361957	Sweet Spring Creek
005	Combined Sewer Overflow	X=546585, Y=4361957	Sweet Spring Creek

Table 1-2 MO-R040030 Outfall Locations

Outfall	Latitude	Longitude	Northing	Easting
Outfall #1	39.4438919100	-92.4356272600	1314663.51800	1658595.76200
Outfall #2	39.4349428027	-92.4187611349	1311407.86000	1663361.75400
Outfall #3	39.4347522118	-92.4186753925	1311338.46400	1663386.03300
Outfall #4	39.4275576337	-92.4138551980	1308719.27434	1664749.95433
Outfall #5	39.4274803181	-92.4138157183	1308691.12463	1664761.13304
Outfall #6	39.4198616297	-92.4188547619	1305914.88300	1663340.25000
Outfall #7	39.4193398413	-92.4162672727	1305725.50200	1664071.39400
Outfall #8	39.4087674705	-92.4303522776	1301871.39800	1660095.31300
Outfall #9	39.4084300844	-92.4211034938	1301750.66400	1662708.62200
Outfall #10	39.4047116099	-92.4340243932	1300393.37500	1659058.85300
Outfall #11	39.4018162559	-92.4265951112	1299340.43700	1661158.94200
Outfall #12	39.3887017097	-92.4127273553	1294567.29400	1665082.22100
Outfall #13	39.3940471351	-92.4203849338	1296512.22400	1662916.27000
Outfall #14	39.3934263806	-92.4254498918	1296284.90800	1661485.07500
Outfall #15	39.3930886900	-92.4283153100	1296161.25800	1660675.38400
Outfall #16	39.4027355400	-92.4521996200	1299670.40500	1653923.60900
Outfall #17	39.4109356000	-92.4443177100	1302658.34500	1656148.95600
Outfall #18	39.4205053800	-92.4747562900	1306140.04300	1647547.96500
Outfall #19	39.4349030643	-92.4519731598	1311386.66500	1653981.36400

The coordinate system used is NAD83 State Plane Missouri Central (in feet).

1.2 Regulatory Background

The MDNR Comprehensive General Permit for Discharges from Regulated Phase II MS4s, Permit MO-R04C030 (MS4 Permit; Attachment A) authorizes Moberly to discharge stormwater. As a city with a population between 10,000 and 40,000, Moberly is categorized as a Group B small MS4, as defined in the MS4 Permit. Part 3 of the MS4 Permit requires permittees to develop and maintain a written SWMP that includes the six MCMs established by the U.S. Environmental Protection Agency, evaluation and reporting efforts, and recordkeeping. The six MCMs are:

1. Public Education and Outreach of Stormwater Impacts (Part 4.1 of the MS4 Permit)
2. Public Involvement and Participation (Part 4.2 of the MS4 Permit)
3. Illicit Discharge Detection and Elimination (Part 4.3 of the MS4 Permit)
4. Construction Site Stormwater Runoff Control (Part 4.4 of the MS4 Permit)
5. Post-Construction Stormwater Management in New Development and Redevelopment (Part 4.5 of the MS4 Permit)
6. Pollution Prevention/Good Housekeeping for Municipal Operations (Part 4.6 of the MS4 Permit)

The Director of Public Utilities and Water Quality Coordinator serve as the responsible persons for the MCMs.

1.3 Purpose and Scope

The purpose of this SWMP is to:

- Provide BMPs for each of the six MCMs.
- Provide measurable goals to evaluate BMPs.
- Provide procedures for compliance with the proper monitoring, recordkeeping, and reporting requirements set forth by the MS4 permit.

Section 2 through Section 7 of this SWMP, which describe the City's Stormwater Program with respect to each MCM, are organized as follows:

- **MCM Requirements:** This section lists the applicable MS4 Permit requirements for each MCM, addressed in Part 4.1 through 4.6 of the MS4 Permit in *italic* text. ***Bold, italic*** text that precedes the permit requirement indicates the MS4 Permit requirement number. **Bold** text that follows the permit requirement indicates where this requirement is met in the SWMP.
- **Target Pollutants and Audiences:** This section provides the pollutant and audiences specific to each MCM. Note, this section is not applicable to MCM 2.

- **Best Management Practices:** This section lists, at a minimum, the required BMPs the City implements for each MCM.
- **Measurable Goals:** This section provides a measurable goal for each BMP listed for the MCM, the evaluation method of BMP effectiveness, and the determination of effectiveness.

DRAFT

2 MCM 1: Public Education and Outreach

2.1 MCM 1 Permit Requirements

- 4.1** *The MS4 Operator shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.*

The public education and outreach program shall, at a minimum include the following:

- 4.1.A** *The MS4 Operator shall target specific audiences who are likely to have significant stormwater impacts.*

1. *Traditional MS4s (cities and counties) shall address the residents being served by the MS4;*
3. *Additional other audiences within the MS4 service area (such as, but not limited to, those listed in Table I [of the Comprehensive Permit]) shall be addressed as listed below:*

Group B: A minimum of one (1) additional audience

The target audiences may remain the same for the entire permit cycle or may change if the tracking and adaptive management reviews show a new target may be better for the MS4. Any changes shall be stated and explained in the MS4 Stormwater Management Program Report.

Addressed in Moberly SWMP Section 2.2 and Table 2-1.

- 4.1.B** *The MS4 Operator shall target specific pollutant(s) in the permittee's education program (such as, but not limited to, those listed in Table II [of the Comprehensive Permit]). 1.) Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit. The same pollutant may be used for more than one target audience, the target pollutant(s) may change annually as needed.*

Addressed in Moberly SWMP Section 2.2 and Table 2-1.

- 4.1.C** *The MS4 Operator must utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the selected target audiences. The message delivered by these BMPs needs to be appropriate to the target audience and relate to the target pollution. The distribution of the BMPs needs to be effective, and when possible associated with the target audience or pollutant (such as a swimming pool water disposal flyer when applying for a swimming pool permit). BMPs which are ongoing throughout the year or permit cycle may be counted as one annual BMP. The permittee's SWMP shall explain how each BMP relates to the target pollutant and target audience. The MS4 Operator may change BMPs during the permit cycle if determined appropriate through tracking and adaptive management reviews show a different BMP may be more effective for the MS4. Any changes shall be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.*

1. *Using Table III [of the Comprehensive Permit], the MS4 Operator shall implement a minimum of the following, including the tracking and adaptive management processes: Group B: Each permit cycle; four (4) education and outreach BMPs from Table III.*

Addressed in Moberly SWMP Section 2.3 and Table 2-2.

4.1.D *The MS4 Operator must create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) must have an effort to impact stormwater runoff by improving water quality.*

1. *Using Table IV [of the Comprehensive Permit], the MS4 Operator shall implement a minimum of the follow including the tracking and adaptive management processes:*

Group B: Each permit cycle; two (2) involvement BMPs from Table IV.

Addressed in Moberly SWMP Section 2.3 and Table 2-2.

4.1.E *The MS4 Operator shall create or support the involvement BMP(s) in Section 4.1.D. To be considered support given to the coordinating groups the MS4 Operator shall at minimum conduct the following or similar:*

- *Plan, or assist with planning, the event or activity;*
- *Contribute supplies, materials, tools, or equipment;*
- *Provide assistance from MS4 staff during the activity;*
- *Provide assistance with recruiting volunteers for events;*
- *Make a space available for projects, meetings, or events;*
- *Advertisement for the events;*
- *Supply disposal services;*
- *Arrange land or stream access;*
- *Financial support; and*
- *In-kind donations such as food.*

Addressed in Moberly SWMP Section 2.3 and Table 2-2.

4.1.F *Using adaptive management as required in parts 4.1.A.3.d and 4.1.B.1.c, all MS4 Operators shall review their Public Education and Outreach on Stormwater Impacts Program, at minimum, annually and update implementation procedures and/or BMPs as necessary within the requirements of this permit. This may be conducted when preparing the MS4 Stormwater Management Program Report for submittal to the Department.*

Addressed in Moberly SWMP Section 2.3 and Table 2-2.

2.2 Target Pollutants and Audiences

Table 2-1 provides a list of target pollutants and their associated potential sources and/or target audiences for MCM 1.

Table 2-1 MCM 1 Target Pollutants and Audiences

Target Pollutant	Potential Sources/ Target Audience(s)
Residential Pollutants: <ul style="list-style-type: none"> Household hazardous waste Litter/solid waste Pesticides and herbicides Pet wastes Used oil 	<ul style="list-style-type: none"> Homeowners Non-homeowners Students; grades K-12 Local college students City Council
Commercial Pollutants: <ul style="list-style-type: none"> Used oil Sediment Litter/solid waste 	<ul style="list-style-type: none"> Business owners Management of large, paved areas
Industrial Pollutants: <ul style="list-style-type: none"> Used oil Sediment Process/product chemicals Hazardous materials Litter/solid waste 	<ul style="list-style-type: none"> Business owners Industrial site managers Developers Engineers Management of large, paved areas

2.3 Best Management Practices

The City has the following ongoing public education BMPs to address MCM1, including, at a minimum:

- Staff identify target audiences who are likely to have significant stormwater impacts and target pollutants for each target audience. The City reviews these lists on an annual basis and updates the list as needed. Table 2-1 includes a list of target audiences and pollutants.
- Staff provide appropriate educational resources in conjunction with the selected pollutants for the selected target audiences. The City (a Group B MS4) is required to implement four education and outreach BMPs from Table III of the MS4 Permit each permit cycle. At a minimum, the City implements the following education and outreach BMPs:
 - Staff maintain a stormwater website with up-to-date information and working links.
 - Staff post stormwater education on social media post . Posts are made a minimum of four times per year on a minimum of one social media platform. The messages address ways community members can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. Posts are designed to be seasonally appropriate.
 - Staff publish or post informational articles to educate the public on stormwater topics in the local newspaper, on the City's website, and/or on social media.

- Staff host stormwater related educational meetings and trainings to address practices attendees can use to improve the quality of stormwater runoff.
- Staff organize activities for the public to become involved with the City's Stormwater Management Program. The City (a Group B MS4s) is required to implement two involvement BMPs from Table IV of the MS4 Permit each permit cycle. At a minimum, the City implements the following involvement BMPs:
 - City-sponsored and coordinated stream, lake, and watershed cleanup events; supplies and equipment for these events are provided by the City to support these activities (i.e.; trash bags, high visibility vests, etc.).
 - City-hosted public event educational displays and/or booths, which provide information intended to improve public understanding of issues related to water quality.

The City uses an adaptive management process on an annual basis to review and update the types of events, meetings, and other BMPs used. Any revisions made to BMPs used for MCM1 as a result of this review are described in the annual SWMP report.

2.4 Measurable Goals

The City has established measurable goals for each BMP to provide quantifiable milestones to document the use and effectiveness of established BMPs. All educational BMPs listed are currently implemented and ongoing. BMP effectiveness is monitored throughout the year and compiled in the annual SWMP report. Table 2-2 provides Moberly's measurable goals for the BMPs designated for MCM 1.

Table 2-2 MCM 1 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
List of target audiences and pollutants	Review lists annually	Evaluate whether the lists need to be revised	Each of the audiences and pollutants are targeted by at least one BMP once per year
Up-to-date website with stormwater information	<ul style="list-style-type: none"> Links are functional Website is updated as necessary (annually, at a minimum) and maintained the entire year 	<ul style="list-style-type: none"> Website usage and feedback is reviewed Number of hits are tracked Whether certain messages may need more education is evaluated 	<ul style="list-style-type: none"> Number of hits to the updated pages increases after being updated, or City receives positive feedback on updated pages
Social media posts	A minimum of four posts per year on at least one social media platform	<ul style="list-style-type: none"> Number of views, reactions, and other interactions is evaluated and tracked Whether certain messages may need more education is evaluated 	<ul style="list-style-type: none"> People react or respond to posts, or A link in the post increases hits on the city website above baseline
Post or publish articles	<ul style="list-style-type: none"> Develop topics that are group specific and address activities and or pollutants of concern at a seasonally appropriate time A minimum of two articles are posted or published annually 	<ul style="list-style-type: none"> Related pollutant(s) are evaluated before the article, and again after to see if there has been a change Active responses to articles on social media or the website are tracked Responses are tracked and evaluated to determine if the article was effective in reaching people 	<ul style="list-style-type: none"> The target pollutant decreases after the article, or People actively respond to and discuss the article on social media or other documented forums
City-hosted educational meetings or trainings	<ul style="list-style-type: none"> Events address methods to minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff A minimum of two events are held annually 	<ul style="list-style-type: none"> Attendance Distributed education materials are tracked to gauge interest in the topic being presented Follow-up surveys are conducted to track if the attendees retained information or found the event beneficial 	<ul style="list-style-type: none"> Ten or more people attend, or The corresponding questionnaire demonstrates an improvement in topic understanding discussed among the participants

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
City-organized stream, lake or watershed cleanup events	<p>Land area cleaned on an annual basis is, at a minimum:</p> <ul style="list-style-type: none"> • 2 acres, or • 400 yards of stream/ streambank/ watershed, or • 2 miles of roadside, or • A combination of the above 	<p>The following are tracked:</p> <ul style="list-style-type: none"> • Area or distance cleaned (by acre, yard or road miles) • Amount of waste removed (by tonnage, cubic yard, or Stream Team bag count) • Attendance <p>Waste measurements are used to determine priority areas for litter entering stormwater, or areas of concern for illegal dumping</p>	<p>Land area cleaned is equal or greater than 2 acres, or 400 yards of stream, or 2 miles of road</p>
City-hosted public event educational display or booth	<ul style="list-style-type: none"> • Improve public understanding of issues related to water quality • Provide one booth or display at a minimum, annually • Booth or display will be staffed by MS4 staff the MS4 at a minimum 50% of the time the event is open to the public 	<p>The following are tracked and evaluated to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience:</p> <ul style="list-style-type: none"> • Number of interactions • Overall attendance • Topic(s) covered • Educational materials distributed 	<p>At least ten people received educational materials or otherwise interacted with the display in a measurable way (such as signing up for an upcoming event or participating in an activity at the booth)</p>

3 MCM 2: Public Involvement and Participation

3.1 MCM 2 Permit Requirements

4.1 *The permittee shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the permittee's Stormwater Program.*

4.2.A *The MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit, and description of the MS4s Stormwater Management Program (this may be the Stormwater Management Plan) prior to the submission of the renewal application to the Department.*

Addressed in Moberly SWMP Section 3.2.1 and Table 3-1.

4.2.B *As part of the public notice, if the MS4 Operator has a public website, the required items shall be posted on their website with a way to submit comments, along with the standard public notice methods for the MS4.*

1. *The permittee shall respond to comments received during the comment period.*
2. *The MS4 Operator shall retain copies of any public comments and records of information submitted by the public received as part of the public notice process. These comments and responses shall be made available to the public or the Department upon request.*

Addressed in Moberly SWMP Section 3.2.1 and Table 3-1.

4.2.C *The MS4 Operator shall hold a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. This meeting shall be advertised at least thirty (30) days prior to the public meeting.*

1. *As part of the notice of public meeting, if the MS4 Operator has a public website, the MS4 Operator shall post on that site, along with the standard public notice methods for the MS4. The notice of the public informational meeting, including the date, time and location.*
2. *The meeting must be held within the service area of the MS4.*

Addressed in Moberly SWMP Section 3.2.2 and Table 3-1.

4.2.D *The MS4 Operator shall have a publicly available mechanism to take public inquiries, concerns, or take information about stormwater and stormwater related topics.*

1. *This method shall encompass all MCMs of this permit. This mechanism may be a phone number, website comment form, voicemail box, an email address, social media platform, or a combination of these mechanisms.*
2. *All reports shall be tracked, recording the topic, location, and concern. This information can help identify pollutants of concern, priority areas, pollutant sources, and other information the MS4 Operator may use to evaluate the Stormwater Management Program.*

Addressed in Moberly SWMP Section 3.2 and Table 3-1.

4.2.E *If the MS4 Operator utilizes a stormwater management panel or committee, the MS4 Operator shall provide opportunities for citizen representatives on the panel or committee. The attendance of the meeting shall be recorded.*

Addressed in Moberly SWMP Section 3.2 and Table 3-1.

4.2.F *If the permittee has a governing board, such a County Council, City Council, or Board of Curators, a representative of the MS4 Operator, who is familiar with the MS4 Stormwater Program, shall provide an update to the governing board, at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.*

Addressed in Moberly SWMP Section 3.2 and Table 3-1.

4.2.I *Tracking mechanisms shall be used for tracking attendance, inquiries or concerns per the requirements of Section 4.2. of this permit. Using adaptive management, all MS4 Operators shall review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of this permit. This shall be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the MS4 Governing board and if the community and MS4 government are working together for water quality. Any additional events and/or BMPs shall be acknowledged in the Stormwater Management Program report.*

Addressed in Moberly SWMP Section 3.2 and Table 3-1.

3.2 Best Management Practices

The City has the following ongoing public involvement BMPs to address MCM 2, including, at a minimum:

- The City has a public notice period to allow the public to review the draft permit and the current SWMP prior to submitting a renewal application to MDNR. The public notice period is further described in Section 3.2.1.
- The City's website has publicly available information for the public notice, along with a method for the public to submit comments. The City provides responses to comments received during the public notice period and retains records of all responses and comments.
- The City hosts a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. The public meeting information is further described in Section 3.2.2.
- The City's website has a comment form that allows the public to submit inquiries, concerns, and information. City staff record and respond to all complaints and inquiries; resolutions or follow up to these submittals are kept with these records.

- Staff organize and host stormwater stakeholder committee that meets at least once per permit cycle to advise the City on stormwater issues. The City provides opportunities for citizen representatives on the committee.
- City Utility Department staff provide an update to the City Council on the Stormwater Management Program annually, at a minimum.

The City uses an adaptive management process on an annual basis to review and update the types of events, meetings, and other BMPs. Any revisions made to public involvement and participation BMPs used for MCM 2 as a result of this review are described in the annual SWMP report.

3.2.1 Public Notice

The City holds a public notice period for a minimum of 30 days. The most recent public notice period was held during February 12, 2021 through March 15, 2021. The City logs and responds to comments received during the period. The City retains records of all public comments received as part of the public notice process. All comments and City responses to comments are made available upon request.

3.2.2 Public Meetings

The City holds public meetings to provide information on the SWMP, at a minimum, prior to the renewing the permit. This meeting is advertised at least 30 days prior to the public meeting. The City posts notice of public meeting on the website, including the date, time, and location. The meetings are held in a City building within the Moberly city limits.

The City held a public meeting on March 10, 2021 to allow the public to provide input to the content of the updated SWMP, prior to finalizing this plan. The meeting was announced via newspaper, City website, and social media. Invitee groups to the public meeting includes, at a minimum:

- City Council
- Moberly Area Economic Development
- Chamber of Commerce
- Main Street Moberly
- Moberly Area Public Schools
- Industries
- Commercial businesses
- Developers
- Engineering companies
- General public

3.3 Measurable Goals

All public involvement and participation BMPs described in Section 3.2 are currently implemented and ongoing. BMP effectiveness is monitored throughout the year and documented in the annual SWMP report. Table 3-1 provides the City's measurable goals for the BMPs designated for MCM 2.

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Table 3-1 MCM 2 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Public notice	Notify the public of the renewal application no less than 30 days before submission to MDNR	Stakeholders are contacted to confirm they are aware of the public notice period	Stakeholders indicate awareness of the public notice period
City-hosted public meeting	<ul style="list-style-type: none"> Document meetings hosted Host a public meeting once per permit renewal, at a minimum 	Record attendance and comments	Members of the public attend
Comment forms on website	Record and respond to all complaints or inquiries	Comments and their responses / resolutions are recorded in a spreadsheet	<ul style="list-style-type: none"> Comments forms are used by the public A majority of the stormwater comments are received via online comment forms
Host stormwater committee of stakeholders	<ul style="list-style-type: none"> Document meetings hosted Host a meeting once per permit cycle 	<ul style="list-style-type: none"> Track attendance Record comments are and document answers 	Stakeholders attend and comment
Update to City Council	<ul style="list-style-type: none"> Update Council once per year, at a minimum Update is scripted ahead of time, and the text of the update is recorded 	Feedback from City Council is provided and evaluated	The City Council is satisfied with the update

4 MCM 3: Illicit Discharge Detection and Elimination

4.1 MCM 3 Permit Requirements

4.3 *The MS4 Operator shall develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) into the regulated MS4.*

4.3.A *A current storm sewer system map that shall be updated as needed to include features which are added, removed, or changed. This map may be paper or electronic. This storm sewer map, must show at a minimum:*

- 1. The location of all MS4 outfalls. The map shall be detailed enough that the outfalls can be accurately located;*
- 2. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls;*
- 3. The boundary of the regulated MS4 area;*
- 4. The map shall be readily available and used by field staff as needed; and*
- 5. The map shall be made available to the Department upon request.*

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.3.B *The MS4 Operator must record the sources of information used for the map and track, at minimum:*

- 1. A numbering or naming system of all outfalls;*
- 2. Dates that the outfall locations were verified/ or last field survey; and*
- 3. For newly added outfalls, the date that it was added to the storm sewer system.*

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.3.C *The MS4 shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions. This prohibition shall be through ordinance or other regulatory mechanism, to the extent allowable under state or local law. This may be accomplished by more than one ordinance or mechanism. This may be done through a "nuisance code" however it must be certain that non-stormwater discharges are covered in this code. Such non-stormwater discharges may include, but are not limited to:*

- Litter*
- Household hazardous waste*
- Leaves*
- Soaps & detergents*
- Illegal dumping*
- Vehicle fluids*
- Grass clippings*
- Pet waste*

- Sewage

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.3.D *A dry weather field screening strategy.*

1. *The MS4 Operator shall conduct (or have conducted on their behalf) outfall field assessments. The screening shall be conducted during dry weather conditions to check for the presence of a discharge.*

Existing permittees:

- a) *A minimum of 60% of all outfalls shall be screened during the permit cycle.*
 - b) *Priority areas shall be screened each year.*
2. *This screening shall include a checklist or other tracking device to; ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. This shall be used regardless of the presence of dry weather flow.*

When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:

- *Date and time;*
- *Weather conditions and temperature (air & water);*
- *Color of discharge;*
- *Estimate of flow rate (this may be done as a narrative);*
- *Odor;*
- *Surface scum, floatables or oil sheen present;*
- *Deposits or stains;*
- *Turbidity;*
- *Stream impact including vegetation, fish, wildlife; and*
- *Length of impacted stream.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and Illicit Discharge Detection and Elimination Plan Section 2.2.

4.3.E *The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program. These procedures are for possible illicit discharges, and may be collected, and analyzed by a contracted lab, or similar agreement with another entity who is equipped and experienced in sample collect and analysis.*

1. *This diagnostic monitoring shall include sampling unknown discharge from MS4 outfalls that are found to be flowing or ponding more than 72 hours after the last precipitation event and considered to be an illicit discharge.*
2. *The samples shall be analyzed for relevant parameters to determine if a pollutant is involved.*

- a) *Relevant parameters will need to be determined on a case by case basis depending on the nature of the discharge and what the potential sources may be.*
- b) *The MS4 Operator shall have the ability to sample for and analyze the samples. This may be done through a contract lab or similar agreement.*
- c) *Possible parameters sampled for and analyzed when deemed applicable include but are not limited to:*
 - *pH;*
 - *Oil and grease;*
 - *E.Coli or fecal coliform;*
 - *Surfactants or fluorescence concentration;*
 - *Specific conductivity;*
 - *Ammonia;*
 - *Chlorine;*
 - *Dissolved oxygen; and*
 - *Fluoride/ hardness*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 2.2.

4.3.F *The MS4 Operator shall maintain procedures for tracing the source of an illicit discharge.*

If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source shall be traced.

1. *These procedures shall include mechanisms to locate and follow stormwater infrastructure. A variety of investigative tools may be used as appropriate for each situation, such as, but not limited to;*
 - *Visually following the flow;*
 - *Storm sewer system sampling;*
 - *Full storm sewer map;*
 - *Closed circuit television;*
 - *Smoke or dye tracing; and*
 - *Tunnel entry.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 2.5.

4.3.G *The MS4 Operator shall maintain procedures for removing the source of the discharge. After locating the source, the pollutant and source must be removed. While the exact procedure will depend on the source and the circumstances, the MS4 Operator must maintain any necessary contacts with appropriate entities that may be needed for these procedures (such as an environmental cleaning company). This information shall be made available to the responsible staff.*

The MS4 Operator is encouraged to work with the source of the illicit discharge to remedy the situation. Possible remedies shall include:

- 1. Implement source control or treatment BMPs to prevent reoccurrence of the violation;*
- 2. Remediation or restoration of affected property.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 5.0.

4.3.H *In order to prevent further illicit discharge, the MS4 Operator shall identify priority areas such as, but not limited to:*

- Areas with evidence of ongoing illicit discharges;*
- Past history of illicit discharges;*
- Land use influencing storm sewer/ proximity of potential pollutant sources;*
- Areas of higher population density;*
- Neighborhoods with onsite sewage systems;*
- Areas with known litter or dumping issues;*
- Large or increased number of citizen complaints; and*
- Industrial areas*

Annually, the MS4 Operators shall evaluate this priority area list and update as necessary to reflect changing priorities.

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 2.1.

4.3.I *The MS4 Operator shall maintain written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.*

- 1. This shall include a description of this dry weather field screening strategy and implementation schedule to detect and address non-stormwater discharges, including discharges from illegal dumping and spills, to the permittee's system.*
- 2. This shall include a description of how the discharge is evaluated and the possible parameters that are tested.*
- 3. If contracted to another entity, the contact information shall be listed.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 2.4.

4.3.J *The MS4 Operator must conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, municipal staff, or adjacent MS4s. The investigation must work to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection. Responses shall meet the following investigation timelines:*

1. *Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.*
2. *Investigate (or refer to the appropriate agency with the authority to act) within five (5) days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.*
3. *If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4 Operator's municipal storm sewer system, the MS4 Operator must notify the other MS4's Operator within 24 hours of discovery or as soon as practicable.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 2.4.

4.3.K *The MS4 Operator shall have procedures for appropriate enforcement, this may include fines, the ability to collect cleanup and abatement costs, and actions to ensure that the permittee's illicit discharge ordinance (or other regulatory mechanism) is being implemented.*

1. *The MS4 Operator shall maintain a written description of the enforcement procedure. This shall include a copy of or link to the ordinance and/or other regulatory mechanism that the MS4 Operator will use to enforce the prohibition of illicit discharges into the MS4.*

Addressed in Moberly SWMP Section 4.3, Table 4-2, and *Illicit Discharge Detection and Elimination Plan* Section 5.0.

4.3.L *The MS4 Operator shall maintain a database, or other centralized system, to track dry weather field screenings, spills, incidents, and investigations.*

1. *Tracking mechanisms shall be used for incidents, investigations, enforcement and follow up. This data shall be used to continuously evaluate the effectiveness of the IDDE program. This data shall be reviewed to determine if there is a new priority area.*

The MS4 Operator shall record annually at a minimum:

- a) *Number of outfalls screened;*
- b) *Number of complaints received and investigated; and*
- c) *Number of illicit discharges removed.*
2. *The MS4 Operator shall document all investigations to track at a minimum:*
 - a) *The date(s) the illicit discharge was observed and investigated;*
 - b) *Summary of procedures used to investigate the illicit discharge;*
 - c) *The outcome of the investigation including sample results and findings;*
 - d) *Any follow-up of the investigation including cleanup, enforcement actions, visits to confirm the illicit discharges have been removed; and*
 - e) *The date the investigation or issue was closed or resolved.*

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.3.M *The MS4 Operator shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, this may work with part 4.1 and part 4.6 of this permit (MCM #1 and MCM #6).*

Addressed in Moberly SWMP Section 2.3, Section 4.3, Table 4-2, and Illicit Discharge Detection and Elimination Plan Section 6.0.

4.3.N *All MS4 Operators shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary.*

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.3.Q *The MS4 Operator must develop and implement or maintain a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. This shall include staff who may handle materials which may become an illicit discharge. This shall include discharges through spills, improper disposal, mismanagement, improper vehicle or equipment washing or rinsing. This training may be conducted with resources online and may be focused for what topics are relevant to their position.*

1. *Each staff shall take this training at minimum within one year of a new employee being hired.*
2. *The applicable staff may include the following; (unless the MS4 Operator does not have the listed department under their jurisdiction). Additional staff or departments shall be included if appropriate;*
 - *Fleet maintenance staff;*
 - *Staff at facilities with fuel, chemicals, washing of vehicles or equipment;*
 - *Road maintenance staff;*
 - *Road salt/de-icing staff;*
 - *Parks, swimming pool, or golf course staff who encounter spills, equipment washing, fuel, chemicals, etc.*
3. *The training dates, topics and the attendance shall be recorded.*
4. *Reviews of the training effectiveness shall be considered after municipal site inspections or after an incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the MS4 Operator should consider if the training is enough or is ineffective. The MS4 Operator shall consider ways to survey or test staff to see if the training is effective.*

Addressed in Moberly SWMP Section 4.3, 7.3.1, and Table 4-2.

4.3.O *Using adaptive management the MS4 Operator shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to*

continuously evaluate the effectiveness of each BMP and the implementation of each BMP. Any additional BMPs shall be acknowledged in the annual report.

Addressed in Moberly SWMP Section 4.3 and Table 4-2.

4.2 Target Pollutants and Audiences

Table 4-1 provides a list of target pollutants and their associated target audiences for MCM 3.

Table 4-1 MCM 3 Target Pollutants and Audiences

Significant Contributors	Target Pollutants	Target Audience(s)
On-site sewer systems	E.coli	<ul style="list-style-type: none"> • Homeowners • Commercial businesses • Industries
Animal waste	E. coli	<ul style="list-style-type: none"> • General public
Shipping container activity/transport	Incidental or accidental releases of chemicals/products	<ul style="list-style-type: none"> • Commercial businesses • Industries
Litter	Debris, sediment	<ul style="list-style-type: none"> • Homeowners • Commercial businesses • Industries • Developers • Management of large, paved areas • General public
Residential chemical use	Pesticides/herbicides Household hazardous waste Used oil	Homeowners
Agricultural activities	Fertilizers, pesticides, E. coli	<ul style="list-style-type: none"> • Agricultural business owners
Vehicle service stations	Oil and grease, benzene, toluene, ethylene, and xylene	<ul style="list-style-type: none"> • Commercial businesses • Industries
Industrial activities	Various industrial products depending on industry	Industries
Construction activities ¹	Debris, sediment Incidental or accidental releases of chemicals/fluids	<ul style="list-style-type: none"> • Developers • Contractors

¹ Further addressed by MCM 4

4.3 Best Management Practices

Chapter 34, Article II of Moberly's Code of Ordinances (Attachment B) and *Illicit Discharge Detection and Elimination Plan* (Attachment C) provide procedures and plans for illicit discharge detection and elimination (IDDE). In addition, the City has the following ongoing IDDE BMPs to address MCM 3, including, at a minimum:

- Staff maintain an up-to-date electronic map of the storm sewer system that includes the location of all MS4 outfalls, names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls, and boundary of the regulated MS4 area. The map is easily accessible and available to MDNR upon request.
- Staff maintain a record of the sources of information used to develop and update the storm sewer system map. The City tracks, at a minimum, a naming system of all outfalls, and dates that the outfall locations were verified or added (for new outfalls). For reference, Attachment D includes the *MS4 Outfalls Review and Recommendations Report* provided to the City by Barr Engineering Co. in July 2018.
- The City prohibits non-stormwater discharges from the storm sewer system. This prohibition is implemented and enforced through Chapter 34, Article II of Moberly's Code of Ordinances.
- The City has a dry weather field screening strategy. The City conducts field inspections of all outfalls during dry weather to check for the presence of non-stormwater discharges. A minimum of 60% of all outfalls are screened during the permit cycle. Priority areas of the City are screened annually. The City uses a checklist to complete and track the field screening (Appendix C of the IDDE Plan).
- The City has diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program. These procedures are used to determine when to collect and analyze a sample of possible illicit discharges. This procedure is maintained and updated in the IDDE Plan.
- The City has procedures for tracing the source of an illicit discharge. If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected based on evidence or reports, the source will be traced. These procedures are included in the IDDE Plan and include mechanisms to locate and trace stormwater infrastructure.
- The City has procedures for removing the source of an illicit discharge. This procedure is described in the IDDE Plan. The City addresses the source of illicit discharges and determines feasible remedies. Possible remedies could include implementation of source control or treatment BMPs to prevent reoccurrence of the violation, and/or remediation or restoration of affected property.
- Staff identify priority inspection areas such as, but not limited to:
 - Areas with evidence of ongoing illicit discharges
 - Past history of illicit discharges
 - Land use influencing storm sewer/proximity of potential pollutant sources
 - Areas of higher population density

- Neighborhoods with on-site sewage systems
- Areas with known litter or dumping issues
- Large or increased number of citizen complaints
- Industrial areas

This priority area list is evaluated annually and updated as needed.

- Staff maintain written procedures for program implementation in the IDDE Plan.
- Staff pursue investigations in response to any field screening discoveries, spills, or in response to complaints from the public or municipal staff. The investigation is used to determine the source of the illicit discharge, the nature and volume of discharge through the illicit connection to the storm sewer, and the party responsible. The City follows these timelines for illicit discharges:
 - Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
 - Investigate (or refer to the appropriate agency with the authority to act) within five days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare, or the environment.
- The City has procedures for appropriate enforcement. These may include fines, the ability to collect cleanup and abatement costs, and/or actions to confirm that the permittee's illicit discharge ordinance (or other regulatory mechanism) is being implemented. The City maintains a written description of the enforcement procedure. This includes a copy of or link to the ordinance and/or other regulatory mechanism that the City will use to enforce the prohibition of illicit discharges into the MS4.
- Staff maintain a tracking system used to track dry weather field screenings, spills, incidents, and investigations. The tracking system is used for incidents, investigations, enforcement, and follow up. This data gathered is used to evaluate the effectiveness of the IDDE program. This data is periodically reviewed to determine if any new priority areas need to be added. The City records the following information annually, at a minimum:
 - Number of outfalls screened
 - Number of complaints received and investigated
 - Number of illicit discharges removed

The City documents all investigations to track the following data, at a minimum:

- The date(s) the illicit discharge was observed and investigated

- Summary of procedures used to investigate the illicit discharge
- The outcome of the investigation including sample results and findings
- Any follow-up of the investigation, including cleanup, enforcement actions, and visits to confirm the illicit discharges have been removed
- The date the investigation or issue was closed or resolved
- Staff provide educational information provided to City employees, businesses, and the general public of the hazards associated with illicit discharges and improper disposal of waste to the storm sewer system.
- Staff conduct an annual review the IDDE Program, at a minimum. The IDDE Plan is updated as needed.
- The City has a training program for all municipal field staff, who, as part of their job duties, may come into contact with or observe an illicit discharge or illicit connection to the storm sewer system. This training includes discharges through spills, improper disposal, mismanagement, and improper vehicle or equipment washing or rinsing. Each staff will take this training at a minimum within one year of a new employee being hired. City staff include:
 - Fleet maintenance staff
 - Staff at facilities with fuel, chemicals, washing of vehicles or equipment
 - Road maintenance staff
 - Road salt/de-icing staff
 - Parks, swimming pool, or golf course staff who encounter spills, equipment washing, fuel, chemicals, etc.

Training dates, topics, and the attendance will be recorded. Reviews of the training effectiveness are considered after municipal site inspections or after an incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the City considers if the training is sufficient or is ineffective.

The City uses an adaptive management process on an annual basis to review the IDDE program and updates implementation procedures as necessary. The review of the IDDE program also serves to evaluate the effectiveness and implementation of BMPs. Any revisions made to the list of IDDE BMPs for MCM 3 are described in the annual SWMP report.

4.4 Measurable Goals

All IDDE BMPs described in Section 4.3 are currently implemented and ongoing. BMP effectiveness is monitored throughout the year and compiled in the annual SWMP report. Table 4-2 provides the City's measurable goals for the BMPs designated for MCM 3.

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Table 4-2 MCM 3 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Storm sewer system map	<ul style="list-style-type: none"> The map is updated as needed based on field observations Revisions to the map will be completed by October 2023 	The map is reviewed for accuracy in the field	The map accurately reflects the City's knowledge of the stormwater system
Record information used to develop and update the storm sewer system map	Record: <ul style="list-style-type: none"> Names of all outfalls Dates outfalls were last surveyed 	Accuracy of outfall records are reviewed	Outfall records are current
Prohibit non-stormwater discharges by City ordinance	<ul style="list-style-type: none"> Maintain and review City ordinance Updates to City ordinance will be completed (if needed) by October 2022 	Ordinance is reviewed and updated as needed	Ordinance is applied as intended and revised when needed
Dry weather field screening	<ul style="list-style-type: none"> Inspect 60% of all outfalls during the permit cycle Inspect all priority areas annually Inspections conducted a minimum of 72 hours after the last precipitation event 	<ul style="list-style-type: none"> Number of inspections are tracked and evaluated City confirms tracking is kept current 	All inspections are tracked and the appropriate data is recorded
Monitoring procedures to investigate non-stormwater flows	Sample and analyze dry weather non-stormwater flows during investigation events	Sample data is tracked and evaluated for non-stormwater flows	Sample data is used to investigate and determine sources for investigated non-stormwater flows
Procedures for tracing illicit discharge source(s)	Use the IDDE procedures to trace the sources for illicit discharges	<ul style="list-style-type: none"> Methods used for source tracing are tracked Procedures are reviewed and revised as needed 	Source tracing procedures are used by City staff and the methods proposed are effective to determine sources
Procedures for removing the source of an illicit discharge	Use the IDDE procedures to address illicit discharges	<ul style="list-style-type: none"> Illicit discharge sources removed are tracked Procedures are reviewed and revised as needed 	Procedures for addressing sources are effective in removing illicit discharges

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Identify priority inspection areas	Complete list of priority areas and update as needed	List is reviewed and revised on an annual basis reflect priorities	List is accurate and reflective of the City's current priorities
Maintain and update the IDDE Plan and Program	IDDE Plan and Program is used to inspect, investigate, track, and eliminate illicit discharges	IDDE Plan and Program are reviewed annually and revised as needed	IDDE Plan is updated, and procedures are effective to inspect, investigate, track and eliminate illicit discharges
Conduct illicit discharge investigations	<ul style="list-style-type: none"> Immediately respond to all reported illicit discharges or spills Investigate (or refer to proper authorities) complaints and reports that are an immediate threat as soon as possible Investigate all complaints or reports that are not an immediate threat within five business days 	Investigations and response times are tracked and reviewed	All investigations are conducted within five business days and illicit discharges are addressed in a timely manner
Maintain enforcement procedures	Use the IDDE enforcement procedures to address illicit discharges	<ul style="list-style-type: none"> Enforcement actions and illicit discharge sources removed are tracked Procedures are reviewed and revised as needed 	Enforcement actions result in removal of illicit discharges
Maintain IDDE tracking system	<ul style="list-style-type: none"> Use tracking system to record and compile all IDDE related data and information Record number of outfalls inspected, number of complaints investigated, number of illicit discharges removed, dates of investigations; procedures used for investigations, investigation outcomes actions taken to remove illicit discharges, and dates of resolutions 	<ul style="list-style-type: none"> Data recorded is used to evaluate completeness of the tracking system Tracking system is revised as needed 	Data captured in the tracking system is sufficient to evaluate the overall effectiveness of the IDDE Plan and program

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Education on IDDE	Provide public education opportunities or events on the hazards of illicit discharges	<ul style="list-style-type: none"> Education provided is reviewed and tracked Education materials are revised as needed 	Public engages with and/or participates in education opportunities or events
City staff IDDE training program	<ul style="list-style-type: none"> Conduct training for City staff City staff attend training Track training dates, topics, and attendance 	Staff knowledge is evaluated through field performance	<ul style="list-style-type: none"> Staff performs as trained during and after illicit discharge inspections and incidents Field staff receive training within one year of start date.

5 MCM 4: Construction Stormwater Runoff Control

5.1 MCM 4 Permit Requirements

4.4 *The MS4 Operator shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to their MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater 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.*

4.4.A *The MS4 Operator shall have a law, ordinance and/or other regulatory mechanism to require erosion and sediment control BMPs at construction/land disturbance sites greater than or equal to one (1) acre or less than one acre if the construction activity is part of a larger common plan or development or sale that would disturb one acre or more. The mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under State, Tribal, or local law.*

Addressed in Moberly SWMP Section 5.3, Table 5-2, and Land Disturbance Manual Section 1.0.

4.4.B *The MS4 Operator shall review pre-construction plans. These reviews at a minimum shall:*

1. *Incorporate the consideration of potential water quality impacts through procedures for site plan review. The site plan review procedures shall evaluate threats to water quality shall by considering, at minimum, the following factors:*
 - a) *Soil erosion potential;*
 - b) *Site slope;*
 - c) *Project size and type;*
 - d) *Sensitivity of receiving waterbodies;*
 - e) *Discharge flow type (pipe or sheet flow);*
 - f) *Location of discharge point in relation to receiving water;*
 - g) *Proximity to receiving waterbodies; and*
 - h) *Other factors relevant to the MS4 service area.*
2. *Use a checklist, or other listed criteria, to ensure consistency and completeness.*
3. *Include requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures.*
 - a) *This includes temporary BMPs throughout the life of the land disturbance, and permanent BMPs which remain on site as required by local codes and ordinances.*
4. *Consider ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.*

5. Include requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality. This shall include at a minimum:

- a) Discarded building materials;
- b) Concrete truck, and mortar mix washout;
- c) Chemicals (such as fertilizer, paint, oils, herbicides, pesticides);
- d) Litter; and
- e) Sanitary waste.

Addressed in Moberly SWMP Section 5.3, Table 5-2, and Land Disturbance Manual Sections 3.0 and 4.0.

4.4.C *The MS4 Operator shall establish authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, all MS4 Operators shall implement procedures for inspecting construction/land disturbance projects. The construction site stormwater program shall implement at a minimum:*

- 1. *Identify priority sites for inspection based on nature of the construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water;*
- 2. *Construction site inspections shall include assessment of compliance with the MS4 Operator's construction site storm water runoff control ordinance or regulatory mechanism, and other applicable ordinances;*
- 3. *The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement polices to require BMPs are implemented and effective;*
- 4. *Final inspection, upon completion of the land disturbance and prior to final approval or occupancy of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.*
- 5. *The inspections conducted by the MS4 Operator shall be documented with a checklist. The checklist must include structural BMPs and check on the self-inspection which are conducted by the construction site operator. These MS4 Operator checklists may be electronic.*

Addressed in Moberly SWMP Section 5.3, Table 5-2, and Land Disturbance Manual Section 5.4.

4.4.D *The construction site stormwater program shall include an established, escalating enforcement policy that clearly describes the action to be taken for violations. The program shall have procedures to ensure compliance with the MS4 Operator's erosion and sediment control regulatory mechanism. This shall include the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain penalties, injunctions or other measures will be used.*

- 1. *The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.*

2. *Enforcement responses to violations must consider the following criteria at minimum:*
 - a) *Degree and duration of the violation;*
 - b) *Effect the violation has on the receiving water;*
3. *Enforcement actions shall be timely in order to ensure the actions are effective. These procedures and actions must be written and available for MS4 staff for consistency and training purposes.*
4. *The MS4 Operator must have a minimum of two (2) enforcement actions they are able to use. Possible enforcement actions include, but are not limited to:*
 - a) *Stop Work orders;*
 - b) *Verbal education or educational materials given to the construction site operator;*
 - c) *Written warnings or notice of violation;*
 - d) *Bonding or escrow requirements;*
 - e) *Fines/ penalties; and*
 - f) *Denials for previous non-compliance.*

Addressed in Moberly SWMP Section 5.3, Table 5-2, and Land Disturbance Manual Section 7.0.

4.4.E *The MS4 Operator shall require the construction site operator to conduct inspections at minimum:*

1. *Every fourteen (14) days, when construction is active.*
2. *Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased.*

Checklists used for these inspections conducted by construction site operators may be submitted to the MS4 Operator, or the MS4 Operator may verify that these inspections are being conducted by the construction site operator checklists during MS4 Operator inspections.

Addressed in Moberly SWMP Section 5.3, Table 5-2, and Land Disturbance Manual Section 5.4.

4.4.F *The MS4 Operator shall maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence. The inventory must contain:*

1. *Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);*
2. *Size of the project/ area of disturbance;*
3. *If the site is a priority site/ how high of priority;*

Addressed in Moberly SWMP Section 5.3 and Table 5-2.

4.4.G *The MS4 Operator shall track their oversight inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request. The tracking must contain at a minimum:*

- 1. Inspection dates and time;*
- 2. Inspector name;*
- 3. Inspection findings; and,*
- 4. Follow up actions and dates, including corrective actions all enforcement actions.*

Addressed in Moberly SWMP Section 5.3 and Table 5-2.

4.4.J *The Stormwater Management Program must include procedures for the MS4 Operator to receive and consider information submitted by the public about land disturbance sites. This may be in combination with 4.2.D of this permit.*

Addressed in Moberly SWMP Section 5.3 and Table 5-2.

4.4.K *The MS4 Operator shall provide, or support access to, construction site runoff control training for MS4 inspectors and plan reviewers at minimum once during this permit cycle. This education shall be tracked or documented.*

Addressed in Moberly SWMP Section 5.3 and Table 5-2.

4.4.L *The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.*

Addressed in Moberly SWMP Section 5.3 and Table 5-2.

4.4.M *Using adaptive management, all MS4 Operators shall review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the ordinances, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures, and effectiveness of training procedures to ensure compliance with these requirements and determine if changes are needed. This annual review may include but is not limited to:*

- 1. Evaluating the most common violations, how violations are handled, how many are escalated;*
- 2. If the education program can assist in reducing violations;*
- 3. Determining if the site plans match the sites when violations arise or if additional items need to be evaluated at plan review;*
- 4. Assessing public complaints being addressed in a timely manner; and*
- 5. Evaluating if the inspections are thorough and consistent across different sites.*

Any additional BMPs shall be acknowledged in the SWMP.

Addressed in Moberly SWMP Section 5.3.

5.2 Target Pollutants and Audiences

Table 5-1 provides a list of target pollutants, potential sources, and associated target audiences for MCM 4.

Table 5-1 MCM 4 Target Pollutants and Audiences

Target Pollutant	Potential Sources	Target Audience(s)
<ul style="list-style-type: none"> • Sediment, including vehicle track-out • Litter • Construction materials / chemicals • Concrete truck washout • Vehicle and equipment fluids 	<ul style="list-style-type: none"> • Construction sites • Sediment stockpiles • Construction materials • Waste materials • Vehicle maintenance/fueling 	<ul style="list-style-type: none"> • Developers • Engineers • Contractors • Landowners / homeowners • Industries • Commercial business owners

5.3 Best Management Practices

Chapter 34, Article III of Moberly's Code of Ordinances and *Land Disturbance Manual* provide procedures and plans for target audiences to comply with construction stormwater runoff. In addition, the City has the following Construction Stormwater Runoff Control BMPs to address MCM 4, including, at a minimum:

- Staff review pre-construction plans. Section 3.0 and Section 4.0 of the *Land Disturbance Manual* provide additional details and a checklist (Appendix B of the *Land Disturbance Manual*) to guide the City's review of pre-construction plans.
- The City has the established authority for site inspections and control measure enforcement. The City's construction site runoff program, includes the following, at a minimum:
 - Priority sites are identified for inspection based on the nature of construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water.
 - City inspections are documented with a checklist, that include, at a minimum:
 - Assessment of compliance with the Chapter 34, Article III of Moberly's Code of Ordinances and *Land Disturbance Manual*
 - Evaluation of stormwater controls
 - Final inspection that confirms all disturbed areas have been stabilized and all temporary erosion and sediment controls are removed from the site
- The City as an escalating enforcement policy that clearly describes the action to be taken for violations. The City has the authority to initiate enforcement actions. Section 7 of the *Land Disturbance Manual* provides details on the City's enforcement program.

- The City requires construction site inspections by the construction site operator. The City requires construction operators to maintain inspection checklists on site and verifies these inspections are being conducted using the inspection checklists as the City uses during its inspections.
- Staff maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of the MS4 Permit. The inventory contains, at a minimum:
 - Contact information for each project (e.g., tracking number, name, address, phone, etc.)
 - Name and contact information of permit holder
 - Site location
 - Project size / area of disturbance
 - Priority level of site
- Staff maintain an inventory of City oversight inspections. This inventory contains, at a minimum:
 - Site name and location
 - Permit holder name
 - Inspection dates and time
 - Inspector name(s)
 - Inspection findings
 - Follow-up actions and dates, including corrective actions and enforcement actions
- The City's stormwater management program includes procedures for the City to receive and consider information submitted by the public regarding land disturbance sites. The City has a designated location on its website for such submittals and responds to comments within three business days. Comments and responses are tracked in an electronic file.
- The City provides construction runoff control training for MS4 inspectors and plan reviewers at least one time during the MS4 Permit cycle and documents training attendance.
- The City has written procedures that outline the local inspection and enforcement procedures for City inspectors to confirm inspection consistency.

The City uses adaptive management to review its construction site stormwater runoff control program on an annual basis and evaluate the ordinances and procedures. At a minimum, this annual review evaluates:

- The most common violations, how violations are handled, and how many have escalated
- Whether the education program can assist in violation reduction
- If additional items need to be evaluated during site plan reviews
- The length of time to respond to public complaints

- Inspection thoroughness and consistency across sites

In addition, the City addresses any additional BMPs in the SWMP or Stormwater Management Program Report.

5.4 Measurable Goals

BMP effectiveness is monitored throughout the year and compiled in the annual SWMP report. Table 5-2 provides the City's measurable goals for the Construction Stormwater Runoff Control BMPs designated for MCM 4.

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Table 5-2 MCM 4 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
City ordinance that requires BMP installation and maintenance at land disturbance sites	Evaluate inspection and violation records	Inspection and violation records are maintained and assessed	Site operators are held accountable for violations
Plan reviews for land disturbance sites	Maintain checklists and plans	Checklists for inspections and plans are saved for every land disturbance site until construction is complete	The Land Disturbance Manual's plan checklist is fulfilled, and stormwater concerns are addressed for each site
Active construction site inspections by City	Track inspections completed; goal is once per month per permitted site	Inspection records are saved and inspections are reported to the department head	<ul style="list-style-type: none"> • Inspections occur monthly and problems are detected before public complaints occur • Recordkeeping is complete
Enforcement actions for land disturbance violations	Record and track inspection records, enforcement actions, and violators	Inspection records and records of enforcement are recorded and reviewed annually to track frequency and perpetrators of violations	Violations decrease
Self-inspections by contractors	City reviews records during oversight inspections (implementation date: July 1, 2022)	City reviews records during oversight inspections	Contractors perform inspections and make them available to City staff
Inventory of land disturbance sites	The inventory is maintained and updated on a monthly basis	The City secretary maintains records and makes them available for review.	Recordkeeping is complete
Public information and complaints	<ul style="list-style-type: none"> • Maintain public site for complaints / information • Respond to complaints in a timely manner 	<ul style="list-style-type: none"> • Complaints can be submitted in the same way as general stormwater complaints • Complaint records are reviewed annually 	Complaint forms are utilized and are the primary method for complaint submittals.

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Erosion and sediment control education for contractors and plan reviewers	<ul style="list-style-type: none"> Demonstrated proficiency of attendees The City will offer this training by the end of the permit cycle 	<ul style="list-style-type: none"> Training includes a test to evaluate proficiency City monitors performance following education course 	Trainees demonstrate knowledge at the end of the course and avoid complaints through proper BMP management
Written procedures for inspection and enforcement is provided to inspectors	Inspectors adhere to Land Disturbance and Post Construction Manuals	Inspectors must possess both physical and digital copies of the Land Disturbance and Post Construction Manuals.	Inspection personnel possess copies of the manuals

6 MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

6.1 MCM 5 Permit Requirements

4.5 *The MS4 Operator shall continue or develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into the regulated MS4. The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts.*

4.5.A *The MS4 Operator shall maintain and utilize an ordinance(s) or other regulatory mechanism(s) to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre including projects less than one acre that are part of a larger common plan of development or sale. The goal of this approach is to arrive at designs that protect sensitive areas, minimize the creation of stormwater pollution, utilize BMPs that effectively remove stormwater pollution, and attempt to maintain predevelopment runoff conditions.*

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts from stormwater, after construction.

1. *If adopting a set of standards from another MS4 or other established standards, the MS4's ordinance may incorporate by reference, therefore the MS4 does not need to incorporate the entire guidance into their codes.*
2. *This program may be accomplished through one or multiple ordinances or regulatory mechanisms.*

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Section 1.0.

4.5.B *The MS4 Operator shall continue or develop a strategy to minimize water quality impacts. This shall include a combination of structural and/or non-structural controls (BMPs) appropriate for the permittee's community.*

1. *Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs. The ordinance or regulatory mechanism for structural post-construction controls, or water quality facilities, shall include:*
 - a) *Adoption or development of numeric or technical performance and/or design standards to control post-construction stormwater discharges. These post-construction stormwater standards are for designing, installing, implementing, and maintaining stormwater control measures which may include, but are not limited to BMPs that; infiltrate, evapo-transpire, harvest, detain, retain, and/or reuse stormwater. The MS4 Operator must adopt or maintain*

local stormwater discharge design standards that consider parameters such as; site discharge volume, rate, duration, and frequency for new development and redevelopment sites with the intent to minimize the impact of stormwater runoff on water quality.

2. *Non-structural controls include but are not limited to; stream buffers, no mow zones, preservation of open spaces, tree preservation, impervious cover reduction, land use planning, and low impact development. The ordinance(s) or regulatory mechanism(s) for non-structural post-construction controls, shall include:*

- a) *Adoption or development of preventative actions that involve management and source controls such as, but not limited to:*

- *Policies and ordinances that provide requirements and standards to direct development to identified areas;*
- *Protection of sensitive areas such as wetlands and riparian areas;*
- *Maintain and/or increase open space (which may include a dedicated funding source for open space acquisition);*
- *Maintain requirements for buffer zones along water bodies;*
- *Require minimizing impervious surfaces;*
- *Require minimizing disturbance of soils and vegetation;*
- *Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure;*
- *Programs which incentivize the use of green infrastructure;*
- *Requirements for minimization of directly connected impervious areas; and*
- *Tree preservation ordinances.*

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Section 3.0.

4.5.C *Pre-construction plan review shall be conducted by the MS4 Operator to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance. The structural or non-structural controls chosen shall; protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This can be achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects, or the permittee may achieve this goal through a method more appropriate for its community.*

1. *The plan review process shall use a checklist. This may be part of the same plan review in MCM 4.*
2. *The plan review process shall evaluate non-structural BMP selection first, such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space. Non-structural BMPs primarily prevent stormwater runoff from a site, which could influence the options for structural BMPs which help mitigate the stormwater related impacts after they have occurred.*

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Sections 3.0 and 4.0.

4.5.D *The MS4 Operator shall have ordinances or similar enforcement mechanisms to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs, including, as appropriate, agreements between the MS4 Operator and other parties such as post-development landowners or regional authorities.*

1. Long term O&M shall be addressed during the plan review and approval process.
2. Copies of O&M manuals shall be retained by the party responsible for the post-construction BMP, and with the MS4 Operator. This may be done electronically.

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Section 3.7.3.

4.5.E *The MS4 Operator shall inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:*

1. A minimum of one (1) inspection shall be conducted during construction, and one (1) inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. This may be conducted in combination with MCM 4 inspections.
 - a) The MS4 inspector shall have access to the approved plans to ensure proper installation.
2. A minimum of once in the first three years after the installation by the MS4 Operator.
3. Annually by the owner or operator of the post-construction BMP, or by the MS4 Operator. If completed by the BMP owner or operator, this inspection report shall be submitted to the MS4 Operator for evaluation and review.
4. The MS4 Operator shall inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. This must include installations with ongoing or open enforcement issues.

Addressed in Moberly SWMP Sections 5.3 and 6.3, Table 6-2, Post Construction Manual Section 6.0, and Land Disturbance Manual Section 5.4.

4.5.F *The MS4 Operator must maintain a plan designed to ensure compliance with the MS4's post-construction water quality regulatory mechanism. This plan shall include escalating enforcement mechanisms the MS4 Operator will use to ensure compliance. The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance:*

1. Enforcement responses to violations must consider at minimum:
 - a) Degree and duration of the violation;
 - b) Effect the violation has on the receiving water;
 - c) Compliance history of the post-construction BMP owner or operator; and

d) *Cooperation of the owner or operator with compliance efforts.*

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Section 6.0.

4.5.G *Enforcement actions shall be timely in order to ensure the actions are effective. The MS4 Operator shall begin enforcement actions within thirty (30) days of discovering a violation. The MS4 Operator shall maintain a minimum of two possible sanctions. These include, but are not limited to:*

1. *Education regarding the BMP and verbal warnings;*
2. *Written warnings or notice of violation (this includes email notification);*
3. *Property lien; and*
4. *Fines.*

Addressed in Moberly SWMP Section 6.3, Table 6-2, and Post Construction Manual Section 6.0.

4.5.H *The MS4 Operator shall maintain an inventory tracking the water quality post-construction BMPs. This inventory must contain, at a minimum:*

1. *Relevant contact information for the responsible person(s) or entity (e.g., tracking number, name, address, phone, etc.);*
2. *The type of post-construction BMP;*
3. *Applicable operations and maintenance documents;*
4. *Date the MS4 Operator approved the construction site plan; and,*
5. *If the water quality facility is owned or operated by the MS4, the tracking shall also include any maintenance, such as sediment clean-out or replanting.*

Addressed in Moberly SWMP Section 6.3 and Table 6-2.

4.5.I *The MS4 Operator shall also track the post-construction BMP inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request. The MS4 Operator shall track at a minimum:*

1. *Inspection dates/ times;*
2. *Inspector name(s);*
3. *Inspection findings; and,*
4. *Follow up actions including all enforcement actions.*

Addressed in Moberly SWMP Section 6.3 and Table 6-2.

4.5.L *The MS4 Operator shall provide appropriate training for MS4 inspectors at minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary*

post-construction BMPs. The MS4 shall provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs.

Addressed in Moberly SWMP Section 6.3 and Table 6-2.

4.5.M Using adaptive management, all MS4 Operators shall review, at minimum annually, their Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed. This annual review may include but is not limited to:

1. Reviewing the number and types of developments;
2. How many BMPs were installed/inspected;
3. The amount of watershed area being treated;
4. The types of violations found and how frequently; and
5. How education could improve the effectiveness of the program.

Any additional programmatic BMPs shall be acknowledged in the Stormwater Management Program Report.

Addressed in Moberly SWMP Section 6.3.

6.2 Target Pollutants and Audiences

Table 6-1 provides a list of target pollutants, potential sources, and associated target audiences for MCM 5.

Table 6-1 MCM 5 Target Pollutants and Audiences

Target Pollutant	Potential Sources	Target Audience(s)
<ul style="list-style-type: none"> • Sediment • Runoff volumes • Litter • Waste materials • Commercial/industrial products 	Post-construction stormwater BMPs, including permanent structural controls	<ul style="list-style-type: none"> • Developers • Engineers • Contractors • Landowners / homeowners • Industries • Commercial business owners • Homeowners associations • Managers of large, paved areas

6.3 Best Management Practices

Chapter 34, Article IV of Moberly's Code of Ordinances and *Post-Construction Stormwater Manual* provide procedures and plans for target audiences to comply with post-construction stormwater runoff. In addition, the City has the following post-construction stormwater management BMPs to address MCM 5 including, at a minimum:

- City ordinance addresses post-construction runoff from new development and redevelopment projects for sites equal to or greater than one acre or projects less than one acre that are part of a larger common plan of development or sale.
- The City's *Post Construction Stormwater Manual* identifies post-construction stormwater BMP requirements, , which address both structural and non-structural controls and stormwater discharge design standards.
- Staff review pre-construction plans. Section 3.0 and Section 4.0 of the *Post Construction Manual* provide additional details and a checklist (Appendix D of the *Post Construction Manual*) to guide the City's review of pre-construction plans. and prioritizes non-structural BMPs for plan reviews.
- The City requires O&M manuals for post-construction BMPs, addressed further in Section 3.7.3 of the *Post Construction Manual*. The post-construction BMP permittee and City retain copies of the O&M manuals.
- Inspections of permitted post-construction BMPs occur during the construction process (refer to MCM 4) and annually following project completion. Owners are given time allotments to correct deficiencies, per the *Post-Construction Stormwater Manual* and City Ordinance.
- The City has an escalating enforcement policy that clearly describes the action to be taken for violations. Section 6.0 of the *Post Construction Manual* provides details on the City's enforcement program. The City has the authority to initiate enforcement actions. The City initiates enforcement actions within 30 days of discovering a violation and uses written warnings and permit revocation as sanctions. Enforcement responses to violations consider, at a minimum:
 - Degree and duration of violation
 - Effect on the receiving water
 - Compliance history of the post-construction BMP owner or operator
 - Cooperation of the owner or operator with compliance efforts
- Staff maintain an inventory of water quality post-construction BMPs. The inventory contains, at a minimum:
 - Site location
 - Contact information for the responsible person(s) or entity (e.g., tracking number, name, address, phone, etc.)
 - Post-construction BMP type
 - Applicable operations and maintenance documents
 - Date the City approved the construction site plan

- Maintenance, such as sediment clean-out or replanting, if the water quality facility is owned or operated by the City
- Staff maintain an inventory of City oversight inspections for post-construction BMPs. This inventory contains, at a minimum:
 - Site name and location
 - Permit holder name
 - Inspection dates and time
 - Inspector name(s)
 - Inspection findings
 - Follow-up actions and dates, including corrective actions and enforcement actions
- The City provides post-construction BMP training for MS4 inspectors and plan reviewers at least one time during the MS4 Permit cycle and staff document training attendance.

The City uses adaptive management to review its post-construction stormwater management program on an annual basis. At a minimum, this annual review includes:

- The amount and types of developments
- BMPs that were installed or repaired in during the year
- Amount of watershed area treated
- Types and frequency of violations
- If the education program can assist in program effectiveness

In addition, the City addresses any additional BMPs in the Stormwater Management Program Report.

6.4 Measurable Goals

BMP effectiveness is monitored throughout the year and compiled in the annual SWMP report. Table 6-2 provides the City's measurable goals for the post-construction stormwater management BMPs designated for MCM 5.

Table 6-2 MCM 5 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
City ordinance that requires maintenance of water quality BMPs at land disturbance sites	Evaluate inspection and violation records	Inspection and violation records are maintained and assessed	Site operators are held accountable for violations
Post-construction BMP inspections	<ul style="list-style-type: none"> Inspections are performed prior to closing the land disturbance permit and annually thereafter Inspections are tracked 	<ul style="list-style-type: none"> Inspections are performed prior to closing the land disturbance permit and annually thereafter Inspection reports and email records are recorded and reviewed annually 	<ul style="list-style-type: none"> Inspections occur monthly and problems are detected before public complaints occur Recordkeeping is complete
Enforcement actions for water quality violations	<ul style="list-style-type: none"> Record and track inspection records, enforcement actions, and violators Enforcement actions occur within 30 days of discovering a violation 	<ul style="list-style-type: none"> Inspection records and records of enforcement are recorded and reviewed annually to track frequency and perpetrators of violations City maintains inspection, complaint, and violation records 	<ul style="list-style-type: none"> Violations decrease Enforcement occurs in a timely manner
Inventory of permanent stormwater BMPs and contractor contact information	The inventory is maintained and updated as needed	The inventory is reviewed during the inspection process and updated as necessary	Recordkeeping is complete and up-to-date following annual inspections
Training for City inspectors	<ul style="list-style-type: none"> Training records are documented Employees are proficient in training subjects 	Training records are documented	<ul style="list-style-type: none"> Trained employees demonstrate understanding of stormwater issues during inspections Employees receive at least one form of training in permanent stormwater controls annually

7 MCM 6: Pollution Prevention/Good Housekeeping

7.1 MCM 6 Permit Requirements

4.6 *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.*

4.6.A *The MS4 Operator shall maintain and utilize an employee training program for MS4 staff. The training shall be given at minimum annually to all MS4 staff who work with material handling, at MS4 vehicle or equipment maintenance areas, storage yards, and material storage facilities. This may be broken up into staff units, or by applicable topics.*

Addressed in Moberly SWMP Section 7.3.1 and Table 7-2.

4.6.B *The training shall be used to prevent and reduce stormwater pollution. The training shall cover a minimum of the following topics/ activities (if applicable to the MS4):*

1. *Vehicle and equipment washing;*
2. *Fluid disposal and spills;*
3. *Fleet, equipment, and building maintenance;*
4. *Park and open space maintenance procedures (including fertilizer, herbicide, pesticide application);*
5. *New construction, road maintenance, and land disturbances;*
6. *Stormwater system maintenance;*
7. *MS4 operated salt and de-icing operations;*
8. *Street sweeper operations; and*
9. *Illicit Discharges.*

Addressed in Moberly SWMP Section 7.3.1 and Table 7-2.

4.6.C *The MS4 Operator shall:*

1. *Maintain material to use in the training program, such as those available from the EPA, the state, or other organizations.*
2. *Maintain written procedures for the training program. Include a description of how this training will coordinate with all other minimum control measures (such as Illicit Discharge), monitoring and TMDL implementations where applicable.*
3. *Maintain a written schedule to offer topic specific training when it is appropriate. Such as, swimming pool discharges in the summer, leaf disposal in the fall, proper salt clean-up and usage in the winter.*

Addressed in Moberly SWMP Section 7.3.1 and Table 7-2.

4.6.D *The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program.*

This shall include a minimum of (if applicable to the MS4):

1. *Maintenance yards;*
2. *Fleet or maintenance shops, including parks department;*
3. *Storage yards;*
4. *Parks and golf courses;*
5. *Municipal parking lots;*
6. *Salt/sand storage locations; and*
7. *Snow disposal areas.*

Addressed in Moberly SWMP Section 7.3.1 and Table 7-1.

4.6.E *The MS4 Operator shall maintain a list of industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility. This includes: municipal projects with a land disturbance permit, wastewater facilities, airports, etc. NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list, however the MS4 Operator should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE program.*

Addressed in Moberly SWMP Section 7.3.1 and Table 7-1.

4.6.F *The MS4 Operator shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from municipal facilities listed in Section 4.6.D and 4.6.E.*

These controls shall include at a minimum, where applicable:

1. *A list of potential pollutant sources at each facility, such as materials used and stored on site;*
2. *A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues;*
 - a) *Records shall be kept for inspections and follow up. This may be a checklist, and may be electronic;*
3. *Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4.*
 - a) *A map with descriptions of these BMPs shall be maintained for each facility;*
4. *All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the permittee shall be stored so these materials are not exposed to stormwater;*

5. *Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state.*
 - a) *This shall include spill kits when liquid product is stored at a facility; and*
 - b) *Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.*
6. *Tracking of rock salt/brine or other deicer usage.*
7. *Maintaining municipal salt storage area(s) after use of rock salt, at minimum:*
 - a) *Sweep and/or shovel spillage in loading area and storage area, and*
 - b) *Unload salt hoppers or keep under cover when salt is in the hopper.*

Addressed in Moberly SWMP Section 7.3.2 and Table 7-2.

4.6.G *The MS4 Operator shall have procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction. This waste, shall include at minimum, if applicable to the permittee:*

1. *Street sweeper spoils and washout;*
2. *Accumulated sediment;*
3. *Dredged materials;*
4. *Floatables, trash and litter;*
5. *Leaves, other organic matter; and*
6. *Other debris.*

Addressed in Moberly SWMP Section 7.3.2 and Table 7-2.

4.6.H *The MS4 Operator shall maintain and utilize the following procedures at minimum for the washing of all municipal vehicles and equipment (if applicable to the MS4):*

1. *Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent; and*
2. *Any wash or rinse water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment.*
3. *Any washing or rinsing activities shall be conducted in an appropriate area so the water is treated. This area(s) shall be marked on the map of the facility.*

Addressed in Moberly SWMP Section 7.3.2 and Table 7-2.

4.6.I *The MS4 Operator shall maintain written explanation of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining*

inspection reports or checklists. Individual Stormwater Pollution Prevention Plans or one overarching Operations and Maintenance Manual for all applicable MS4 facilities may be used to comply with this requirement. If a unified document is used, each individual site shall be familiar with the document, and a copy shall be present on each site referenced in the document or available electronically. Annually, the MS4 Operator shall evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.

Addressed in Moberly SWMP Section 7.3.2 and Table 7-2.

4.6.J *The MS4 Operator shall maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects shall require the protection of water quality in the standards that are used to plan, design, build, and maintain stormwater infrastructure. Flood management projects are those projects developed or designed to reduce flooding.*

Addressed in Moberly SWMP Section 7.3.2 and Table 7-2.

4.6.M *Using adaptive management, all MS4 Operators shall review their Municipal Operations Program, at minimum, annually and update implementation procedures as necessary within the permit requirement. Any additional BMPs shall be acknowledged in the annual report.*

Addressed in Moberly SWMP Section 7.3.1.

7.2 Target Pollutants and Audiences

Table 7-1 provides a list of target pollutants, potential sources, and associated target audiences for MCM 6.

Table 7-1 MCM 6 Target Pollutants and Audiences

Target Pollutant	Potential Sources	Target Audience(s)
<ul style="list-style-type: none"> Sanitary or combined sewer overflows Sediment Litter Hazardous waste Automotive/equipment fluids Fuel Street salts and sand Chlorine 	<ul style="list-style-type: none"> City Parks Department Aquatic Center Wastewater Treatment Facility ¹ Heritage Hills Golf Course ¹ Airport ¹ Drinking Water Treatment Facility Street Barn Distribution and Collection Department Animal Shelter Household Hazardous Waste Facility Police Department Fire Department Clean fill sites 	<ul style="list-style-type: none"> City employees City council members City officials Contractors Consultants

¹ Facilities with NPDES permit coverage.

7.3 Best Management Practices

The City has the following pollution prevention / good housekeeping BMPs to address MCM 6, including, at a minimum:

- The City has an employee training program for MS4 municipal operations staff, addressed further in Section 7.3.1.
- City departments have procedures and controls for pollution prevention and good housekeeping, addressed further in Section 7.3.2.
- Staff maintain an inventory of City-owned industrial facilities that are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list in Table 7-1 identifies municipal projects with a land disturbance permit, wastewater facilities, airports, etc.

The City uses adaptive management to review its municipal operations program on an annual basis, at a minimum, and update implementation procedures, as necessary, within the permit requirement. In addition, the City addresses any additional BMPs in the Stormwater Management Program Report.

7.3.1 Employee Training Program

In accordance with the MS4 Permit, the City has an annual video-based training program for stormwater pollution prevention and reduction for MS4 staff who work with material handling at MS4 owned or operated vehicle/equipment maintenance areas, storage yards, and material storage facilities. The training covers the following, at a minimum, when applicable:

- Vehicle and equipment washing
- Fluid disposal and spills

- Fleet, equipment, and building maintenance
- Park and open space maintenance procedures (including fertilizer, herbicide, and pesticide application)
- New construction, road maintenance, and land disturbances
- Stormwater system maintenance
- MS4 operated salt and de-icing operations (to be implemented in October 2022)
- Fueling
- Solid waste disposal
- Street sweeper operations
- Illicit discharges

City staff are required to maintain training material, written training procedures, and a written schedule that includes topic-specific training as appropriate, as detailed in the MS4 permit. The City uses a sign-in sheet to track individual and department attendance at training sessions. The procedures describe how this training coordinates with other MCMs. The City also maintains an updated list of municipal operations/facilities to which the training programs apply. Attachment E includes a list of trainings by department.

7.3.2 Procedures and Controls for Pollution Prevention and Good Housekeeping

The City maintains standard operating procedures (SOPs) and controls for the following, at a minimum:

- Reducing and eliminating the discharge of floatables and pollutants from municipal facilities to which the training programs discussed in Section 7.3.1 apply. The controls include, where applicable:
 - A list of potential pollutant sources at each facility, such as materials used and stored on site.
 - Annual inspections of all municipally owned or operated facilities for stormwater issues.
 - Use of structural and non-structural BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4, where needed. A structural BMP map is maintained for each facility that uses them.
 - Storing paints, solvents, petroleum products, and petroleum waste products (except fuels), under the control of the permittee, so that they are not exposed to stormwater.
 - Spill prevention, control, and/or management practices are followed at City facilities. Spill kits are stored at facilities with liquid product, which include, at a minimum, the Street

Department, Parks Department, airport, and Household Hazardous Waste Facility. Containment systems are constructed of materials compatible with the substances contained and prevent the contamination of groundwater.

- Tracking rock salt usage and maintaining municipal salt storage areas after rock salt use by sweeping the facility.
- Properly disposing waste removed from the MS4 structures and areas of jurisdiction. Such waste includes:
 - Street sweeper spoils and washout
 - Accumulated sediment
 - Dredged materials
 - Floatables, trash, and litter
 - Leaves and other organic matter
 - Other debris
- Washing municipal vehicles and equipment. The following procedures are followed, at a minimum:
 - Soap or detergent is only used at the Street Barn's designed wash bay, where there is a connection to sanitary sewer. This area is marked on facility maps.
 - Wash/rinse water that contains pollutants (e.g., salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides) is not discharged to waters of the state or the MS4 without appropriate treatment.
- Determination of impacts to water quality for new flood management projects (i.e., those projects developed or designed to reduce flooding). Flood management projects require water quality protection in the standards that are used to plan, design, build, and maintain stormwater projects. City flood management projects shall be constructed and maintained in accordance with Section 6 and the *Post Construction Manual*. Permanent BMPs are included in the City's storm sewer map and inspected annually, in addition to inspections in response to citizen concerns and known or suspected illicit discharges.

As required by the MS4 permit, City staff maintain written explanation of the controls, procedures, inspection schedules, and tracking.

7.4 Measurable Goals

BMP effectiveness is monitored throughout the year and compiled in the annual SWMP report. Table 7-2 provides the City's measurable goals for the pollution prevention/good housekeeping BMPs designated for MCM 6.

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Table 7-2 MCM 6 Measurable Goals

BMP	Measurable Goal	Evaluation Method of BMP Effectiveness	Determination of Effectiveness
Operation and maintenance program	<ul style="list-style-type: none"> Maintain a list of municipal operations affected by the operation and maintenance program Maintain a list of industrial facilities owned/operated by the City that are subject to NPDES industrial stormwater permits 	<ul style="list-style-type: none"> Municipal operations list is evaluated annually and updated as needed NPDES permit applicability is evaluated annually and updated as needed 	Recordkeeping is complete
City staff training	Track names of staff who complete training, dates of training, and departments trained	<ul style="list-style-type: none"> City offers surveys after training sessions to evaluate knowledge of stormwater issues (implemented in January 2022) Staff understanding during municipal inspections is assessed 	<ul style="list-style-type: none"> Employees demonstrate understanding of stormwater issues Employees prevent illicit discharges following training
SOPs / Controls (completion date: June 2022)	<ul style="list-style-type: none"> Maintain written explanation of SOPs, controls, inspection schedules, and an explanation of tracking these BMPs Inspect City facilities 	<ul style="list-style-type: none"> SOPs are updated as needed SOPs will be used as evaluation tools during annual inspections and training Location and reports of inspections and follow-up inspections are tracked, as needed. 	<ul style="list-style-type: none"> Employees are familiar with and fulfill their SOP requirements, as evaluated during inspection and training Inspections are documented
Water quality BMPs for flood reduction projects	Flood projects undergo plan review, are inspected monthly during construction, and are inspected annually following completion	<ul style="list-style-type: none"> Inspections are documented Projects follow the <i>Land Disturbance Manual</i> 	Manual violations are resolved before leading to problems or complaints

8 Recordkeeping and Reporting

8.1 Recordkeeping

This section of the SWMP was developed in accordance with MS4 Permit Section 5.2. The City will retain the most recent version of this SWMP and it will be made available upon request. In addition, the City will maintain the following records for a minimum of three years from the date of application for coverage under the MS4 Permit:

- Activities requiring recordkeeping by this SWMP
- A copy of the NPDES permit, ordinances, policies, and formal procedures for all six MCMs
- Records of the data used to complete the application for the MS4 Permit

8.2 Reporting

This section of the SWMP was developed in accordance with MS4 Permit Section 5.3. The City will submit a SWMP report to MDNR annually on or before February 28. Reports will be submitted through the MDNR's Form MO 780-1846 (Attachment F), unless an alternative reporting format is approved. If the MS4 becomes subject to a TMDL, this SWMP will be updated accordingly and the City will become subject to annual reporting. Reports will contain the following required information from January 1 to December 31 of the previous year:

- Information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable
- The status of the MS4's compliance with permit conditions
- Assessment(s) of the appropriateness of identified BMPs and corresponding measurable goals for each MCM
- A summary of information collected and analyzed during the reporting period, including monitoring data or quantifiable values per the MS4's measurable goals
- Any proposed changes to the permittee's SWMP, including changes to any identified BMPs or measurable goals that apply to the SWMP
- If applicable, notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations. The permittee will supply the name of the entity, the name of the entity's primary contact person, and other relevant contact information.

Attachments

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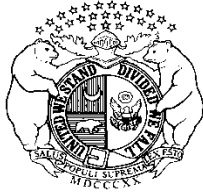
Attachment A

State of Missouri, Department of Natural Resources Operating Permit,
MO-R04C000

DRAFT

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law (Chapter 644 RSMo, hereinafter, the Law) and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.: MO-R04Cxxx

Owner:
Address:

Continuing Authority:
Address:

Facility Name:
Facility Address:

Legal Description:
UTM Coordinates:

Receiving Stream:
First Classified Stream and ID:
USGS Basin and Sub-watershed No.:

is authorized to discharge from the facility described herein, in accordance with the effluent limitations, benchmarks, and monitoring requirements as set forth herein.

FACILITY DESCRIPTION

All Outfalls – Discharges from Regulated Phase II Municipal Separate Storm Sewer Systems
Comprehensive general permit
SIC/NAICS 924110

This permit authorizes only mine dewatering discharges, stormwater discharges, and land application under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas.

October 1, 2021
Effective Date

September 30, 2026
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality

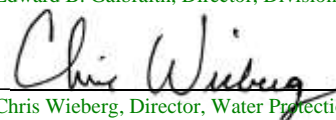

Chris Wieberg, Director, Water Protection Program

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PART 1. PERMIT COVERAGE AND APPLICABILITY

This permit is for coverage under this Comprehensive General Permit for Phase II MS4s

- 1.1.A** Permit Area: This Missouri State Operating Permit (permit) covers all areas served by a Municipal Separate Storm Sewer System (MS4) for which the applicant is identified as the Continuing Authority.
The Permit Area may change based upon areas incorporated into or removed from the permittee's jurisdictional area during the term of this permit, or expansion of the Urbanized Area. Areas added shall be covered under this permit and noted in the Stormwater Management Plan.
- 1.1.B** Applicability: This permit authorizes discharges of stormwater from regulated MS4s, as defined in 10 CSR 20-6.200(D)24. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate National Pollutant Discharge Elimination System (NPDES) permits or no exposure certification as defined in 10 CSR 20-6.200(C).
The permittee, or co-permittee, is authorized to discharge under the terms and conditions of this general permit if the permittee:
1. Owns or operates a regulated Small MS4 as defined in 10 CSR 20-6.200 (D)16;
 2. Also is located in the Urbanized Area (UA) as defined by the most recent U.S. Census for which the applicant is identified as the Continuing Authority with a population of at least 1,000;
 3. OR inside the municipal corporate limits of a jurisdiction with a population of at least ten thousand (10,000) and a population density of one thousand (1,000) people per square mile or greater;
 4. OR is inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality.
- 1.1.C** Categories of Regulated Small MS4s under this comprehensive permit.
This comprehensive permit categorizes MS4s by the following categories, or Groups, based on the population served as determined by the most the recent Decennial Census at the time of permit issuance, the type of Regulated MS4, and the co-permittee situation.

Group A	Group B	Group C
Traditional Small MS4s (cities) that serve a population of less than 10,000 within a UA; OR	Traditional Small MS4s that serve a population of at least 10,000 but less than 40,000; OR	Traditional Small MS4s that serve a population of 40,001 or more; OR
Class 2 counties; Non-traditional such as Universities, Federal facilities.	Class 1 counties	Co-permit Small MS4s

This is the Comprehensive General Permit to cover Group A, B, and C MS4s.

The population of a Small MS4 may change during the permit term. However, the Group designation of a regulated MS4 will not change during the permit term based on population fluctuation.

1. The Group designation of a regulated MS4 is based on the most recent Decennial Census at the time of permit issuance. Results of the national Census held during a permit term will not affect the Group of an MS4 until the next permit renewal unless the permittee joins another MS4 as co-permittee.
2. For the purpose of this section "serve a population" means the residential population within the regulated portion of the Small MS4 based on the most recent Decennial Census.

- 1.1.D** Authorized discharges: The following are types of discharges authorized by this permit:
1. *Stormwater discharges.* This permit authorizes stormwater discharges to waters of the state from the regulated MS4 identified in Section 2.1.A except as excluded in Section 2.1.F of this permit.
 2. *Non-Stormwater discharges.* The permittee is authorized to discharge the following non-stormwater sources provided the permitting authority has not determined these sources to be substantial contributors of pollutants to the permittee's MS4:
 - Water line flushing;
 - Landscape irrigation and lawn watering;
 - Diverted stream flows;
 - Rising ground waters and springs;
 - Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(b)(20));
 - Discharges from potable water sources;

- Foundation or footing drains;
- Air conditioning condensation;
- Irrigation water;
- Water from crawl space pumps;
- Individual residential car washing;
- Flows from riparian habitat and wetlands;
- Street and sidewalk wash water, water used to control dust, that does not use detergents;
- Dechlorinated and uncontaminated residential swimming pool discharges; and
- Discharges or flows from emergency firefighting activities. Fire-fighting activities do not include washing of trucks, run-off water from training activities, and similar activities.

1.1.E In the event the regulated MS4 has an oil water separator which is used to exclusively treat stormwater; this permit authorizes the operation of oil water separators solely for the treatment of stormwater. The oil water separators must be appropriately operated and sized per manufacturer's or engineering specifications. The specifications and operating records must be made accessible to Department staff upon request. Oil water separator sludge is considered used oil; sludge must be disposed of in accordance with 10 CSR 25-11.279.

PART 2. PERMIT RESTRICTIONS AND EXEMPTIONS

2.1.A Limitations on coverage: The permittee, shall prohibit non-stormwater discharges and stormwater discharges that combine with sources of non-stormwater into the MS4, except where:

1. Non-stormwater discharges are in compliance with a separate NPDES permit; and
2. Authorized by Section 1.1.D of this permit.

2.1.B This operating permit does not affect, remove, or replace any requirement of the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; or the Resource Conservation and Recovery Act. Determination of applicability to the above mentioned acts is the responsibility of the permittee. Additionally, this permit does not establish terms and conditions for runoff resulting from silvicultural activities listed in Section 402(l)(3)(a) of the Clean Water Act.

2.1.C Discharge Limitations

1. The permittee shall implement Best Management Practices (BMPs) via an iterative process to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) into the MS4 for the goal of attainment with Missouri's Water Quality Standards.
2. The permittee shall implement and enforce a Stormwater Management Program per the requirements listed in this operating permit in accordance with section 402(p)(3)(B)(iii) of the CWA, corresponding NPDES regulations, 40 CFR 122.34, 40 CFR 122.28(d)(2), and in accordance with the Missouri Clean Water Law (MCWL) and its implementing regulations under 10 CSR 20-6.200.
3. The permittee shall comply with all provisions and requirements contained in this permit and with their individual Stormwater Management Program including plans, ordinances, and schedules developed in fulfillment of this permit.
4. If the Department determines a regulated MS4 is causing or contributing to instream excursions of Missouri's Water Quality Standards, then the Department may require corrective action(s) or require an application for a site-specific permit to ensure that BMPs are being implemented via an iterative process to reduce pollutants to the MEP.
5. Newly designated regulated MS4s applying for coverage under this general permit and discharging to waterbodies or watersheds subject to an existing EPA approved or established TMDL may be denied coverage under this general permit and required to apply for and obtain a site-specific operating permit for stormwater discharges from their regulated MS4.

2.2 Authorization to Discharge and Application Requirements

2.2.A Authorization to discharge stormwater from a regulated MS4 requires each permittee (existing and recently designated regulated MS4s) to submit a complete application for the MS4 general permit. The permittee shall submit their application on the latest version of the application form(s); either Form K, or Form L and Form M.

2.2.B The application shall be signed and dated by an authorized signatory.

1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.

2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in Section 2.2.B.1 of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative only if the authorization is made in writing by a person designated in Section 2.2.B.1 of this permit.

2.2.C Existing regulated permittees seeking renewal of their MS4 permit shall submit a renewal application within 180 days prior to the expiration date of this operating permit unless the permittee has been notified by the Department that an earlier application is required in accordance with 10 CSR 20-6.200 (1)(D)24.B.

2.2.D Newly designated regulated MS4s shall submit their permit application within 180 days following notification by the Department that permit coverage is required.

PART 3. STORMWATER MANAGEMENT PROGRAM AND PLAN

3.1 Stormwater Management Program

3.1.A To the extent allowable under state and local law, a Stormwater Management Program must be developed, implemented, and enforced according to the requirements of this general permit. This permit includes specific terms and conditions, which are the requirements needed to meet the MS4 regulatory requirements.

1. **Existing permittees** shall assess program elements that were described in the previous permit, modify as necessary, and/or implement new elements, as necessary.
2. **Newly regulated permittees** shall have the program fully implemented within 5 years of issuance of their permit.

3.1.B As part of the Stormwater Management Program, the permittee shall update or develop a document, with appropriate appendices and supplemental attachments explaining the Stormwater Management Program. Permittees shall create and maintain this written Stormwater Management Plan (SWMP) describing schedules, procedures, contacts or other items listed under Part 4 of this permit. This document may be electronic.

1. The SWMP shall be maintained by the MS4 Operator to ensure consistency with the implementation, continuity of the Stormwater Management Program, and iterative reviews of programmatic BMPs and procedures.
2. The SWMP does not go through Department approval and is not incorporated into this permit.
3. The SWMP shall be updated or developed within 90 days after the renewal of the permit.

3.1.C The MS4 Operator may add supplemental items to the SWMP. These items include but are not limited to:

- Maps;
- Standard operating procedures (SOPs);
- Inspection forms;
- Sample data;
- Operations and Maintenance Manual;
- Website or social media account tracking;
- Stream Team Activity Reports;
- Tracking and evaluation documents; and
- Documentation of agreements for co-permittees and/or cooperative agreements.

3.1.D Permittees shall implement programmatic BMPs consistent with the provisions of this permit to achieve compliance with the standard of reducing pollutants to the maximum extent practicable per 40 CFR 122.34.

3.1.E The MS4 Operator may replace or modify ineffective BMPs with effective BMPs. If the name of a MS4 contact changes, that may be updated on the next Stormwater Management Program Report and/or via email to the Department at MS4@dnr.mo.gov.

3.2 Sharing Responsibility

3.2.A Co-permittees agreements.

1. Implementation of one or more of the minimum control measures may be shared with another governmental entity or the governmental entity can assume responsibility for the measure via the co-permittee option if:
 - a) The co-permittee has a MS4 located within or partially within an Urbanized Area (UA) as determined by the most recent Bureau of Census, which can include, but is not limited, to: municipalities, county, military bases, large hospitals, prison complexes, universities, sewer districts, and highway departments;
 - b) The co-permittee, in fact, implements the control measure(s);
 - c) The specific control measure, or component of a control measure, is at least as stringent as the corresponding permit requirements;

- d) The co-permittee agrees to implement the control measure on the other permittee's behalf; and
- e) Written acceptance of this obligation is required.
- 2. This co-permittee obligation and written acceptance, shall be described and maintained as part of the SWMP.
- 3. If the co-permittee agrees to report on the control measure, the co-permittee shall cooperate with the reporting requirements contained in Section 5.3 of this permit.
- 4. If one co-permittee fails to implement the control measures, then that co-permittee shall remain liable for any discharges due to that failure to implement. Additionally, the Department may require corrective actions(s), require an application for a site-specific permit, or require the co-permittee to apply and obtain their own Phase II MS4 general permit.

3.2.B Other agency agreements. Implementation of one or more of the minimum control measures or BMPs may be contracted out to another entity or organization, such as a non-profit organization or watershed organization. The MS4 Operator may grant responsibility for the MCM or BMP. The agreement must be described in the SWMP detailing which BMPs are being assumed by the other entity or organization. Written agreements between another entity or organization stipulating arrangements and responsibilities for meeting permit requirements shall be made available to the Department upon request. The permittee is responsible for oversight to ensure compliance with this permit.

3.3 Reviewing and Updating the Stormwater Management Program

3.3.A The MS4 Operator shall conduct an annual review of their Stormwater Management Program. This is recommended to be in conjunction with preparation of the MS4 Stormwater Management Program Report required under Section 5.

3.3.B Changes to the Stormwater Management Program requested by the Department must be made in writing, set forth a time schedule for the permittee to develop the changes, and offer the permittee opportunities to propose alternative program changes to meet the objective of the requested modification. All changes required by the Department will be made in accordance with 10 CSR 20-6.200. The Department may require changes to the Stormwater Management Program as needed to:

- 1. Address impacts on receiving water quality caused or affected by discharges from the MS4.
- 2. Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements; or
- 3. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the MCWL and the federal Clean Water Act (CWA).

3.3.C In the event of a transfer of ownership, change in Continuing Authority, or change in responsibility for Stormwater Management Program implementation; the permittee shall implement the Stormwater Management Program on all new areas added to the permittee's portion of the MS4 (or for which the permittee becomes responsible for implementations of stormwater quality controls) as expeditiously as practicable, but not later than one (1) year from the addition of the new areas.

PART 4. MINIMUM CONTROL MEASURES

Entities seeking coverage under this general permit shall develop and implement a Stormwater Program that includes the following six (6) Minimum Control Measures (MCMs).

- 1. All six MCMs apply to all traditional MS4s (cities and counties) regulated under this permit.
- 2. For non-traditional MS4s (universities, hospital complexes, prisons, and federal facilities) or MS4s in a co-permit that do not have responsibility over all MCMs. The permittee shall document in the SWMP and on each MS4 Stormwater Management Program Report which MCMs are not applicable. Contact the Department for any questions regarding applicability of MCMs.

4.1 MCM 1. Public Education and Outreach on Stormwater Impacts

The MS4 Operator shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

The public education and outreach program shall, at a minimum include the following:

4.1.A The MS4 Operator shall target specific audiences who are likely to have significant stormwater impacts.

- 1. Traditional MS4s (cities and counties) shall address the residents being served by the MS4;
- 2. Non-traditional MS4s shall address the community served by the MS4 as listed below:
 - a) Universities shall target the faculty, other staff, and students;
 - b) Military bases shall target military personnel (and dependents), and employees (including contractors).
 - c) Prison complexes or other multi-building complexes shall target staff and applicable contractors.

3. Additional audiences within the MS4 service area (such as, but not limited to, those listed in **Table I**) shall be addressed as listed below:

Group A: No requirement for additional audiences

Group B: A minimum of one (1) additional audiences

Group C: A minimum of two (2) additional audiences

The target audiences may remain the same for the entire permit cycle or may change if the tracking and adaptive management reviews show a new target may be better for the MS4. Any changes shall be stated and explained in the MS4 Stormwater Management Program Report.

Table I -Target Audiences

- Schools, educational organizations, or youth service and youth groups;
- Businesses, including commercial facilities, home-base and mobile businesses;
- Institutions or formal organizations such as churches, hospitals, service organizations;
- Developers or construction site operators;
- Homeowner or neighborhood associations;
- Industrial facilities;
- Local government;
- Contractors;
- Visitors/ tourist; and
- Other target group, noted in the MS4 Stormwater Management Program Report.

- 4.1.B** The MS4 Operator shall target specific pollutant(s) in the permittee's education program (such as, but not limited to, those listed in **Table II**).

Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit. The same pollutant may be used for more than one target audience, the target pollutant(s) may change annually as needed.

Table II- Pollutants/ sources

- Grass clippings & leaf litter;
- Fertilizer & pesticides;
- Litter, trash containment, balloon releases;
- Dumping of solid waste;
- Illegal disposal of household hazardous waste;
- Pet waste;
- Failing septic systems;
- Swimming pool discharge, including salt water pools;
- De-icing/ rock salt usage/ storage;
- Oil, grease, fluids from vehicles;
- Sediment runoff from construction/land disturbance;
- Unauthorized discharge of restaurant waste;
- Power washing;
- Unauthorized discharge of industrial waste;
- Vehicle washing; and
- Wash water/ grey water.

4.1.C The MS4 Operator must utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the selected target audiences. The message delivered by these BMPs needs to be applicable to the target audience and relate to the target pollution. The distribution of the BMPs needs to be effective, and when possible associated with the target audience or pollutant (such as a swimming pool water disposal flyer when applying for a swimming pool permit). BMPs which are ongoing throughout the year or permit cycle may be counted as one annual BMP. The permittees SWMP shall explain how each BMP relates to the target pollutant and target audience. The MS4 Operator may change BMPs during the permit cycle if determined appropriate through tracking and adaptive management reviews show a different BMP may be more effective for the MS4. Any changes shall be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.

1. Using **Table III**, over the permit term the MS4 Operator shall implement a minimum of the following, including the tracking and adaptive management processes:

Group A: Each permit cycle; two (2) education and outreach BMPs from Table III.

Group B: Each permit cycle; four (4) education and outreach BMPs from Table III.

Group C: Each permit cycle; five (5) education and outreach BMPs from Table III.

Table III - Outreach and Education BMPs

BMPs:	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Information on the MS4 Operator's website;	Maintain a webpage with up to date information, & working links. All links shall be checked, and the page shall be updated as necessary at minimum annually. Must be maintained the entire year.	The number of hits shall be tracked. The MS4 Operator shall use this to see which messages get reactions, and if certain messages may need more education.
Social Media posts, social media campaign;	Post a minimum of four (4) times a year, on a minimum of one social media platform. The messages shall address ways attendees can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. The messages shall be seasonally appropriate. Must be continued for the full year.	The number of views, impressions, and other interactions shall be tracked. The MS4 Operator shall use this to see which messages get reactions, and if certain messages may need more education.
Maintain, or mark storm inlet with "No Dumping – Drains to Stream" or similar message. In addition to, or instead of, permanent wording cast into the structure of the inlet;	Placard, stencil, or paint, a minimum of 10% of all known stormwater inlets in the MS4 area per year.	Number of inlets, the location of the inlets and how they were marked shall be tracked. These areas shall be noted on MCM #3 dry weather screenings, and illicit discharge investigations as a method to determine if the markings are effective or if areas could benefit from the markings.
Require installation of permanent embossed, or precast inlets with "No Dumping-Drains to Stream" or similar message.	Requirement for all new inlets in the MS4 area.	Number of inlets, the location of the inlets shall be tracked. These areas shall be noted on MCM #3 dry weather screenings, and illicit discharge investigations as a method to determine if the markings are effective or if areas could benefit from the markings

Media/ advertising campaign: Billboard; Bus shelter/ bench; radio/ television/ movie theatre/ areas of high visibility.	Develop topics that address activities and/or pollutants of concern. Advertisement must be active for a minimum of three weeks; OR must have an estimated exposure for the duration of the campaign that is 2 times the most recent U.S. Census Bureau decennial population value for the permit area.	To the extent possible, evaluate the pollutant before the advertising campaign, and again after to see if there has been a change. The dates, time, and/or estimated media exposure for each spot broadcast shall be documented. Consider including a mechanism to track active response such as a QR Code, following the social media account(s) or a website to visit. Track those responses to determine if the advertisement was effective in reaching people.
Publish articles in local newsletter, may be electronic;	Develop topics that are group specific and address activities and or pollutants of concern at a seasonally appropriate time. A minimum of two articles annually shall be published or emailed.	To the extent possible evaluate the pollutant before the article, and again after to see if there has been a change. Consider including a mechanism to track active response such as following the social media account or a website to visit. Track those responses to determine if the article was effective in reaching people.
Permanent Stormwater related signage;	Place signage in a location where the message is relevant, and highly-visible to target audience. Signage will count as an annual BMP for the year it was put in place and for each subsequent year of this permit cycle as long as each of those years tracking is taking place to message effectiveness and to ensure the signage is maintained.	Evaluate the pollutant before the signage, and again after to see if there has been a change. Consider including a mechanism to track active response such as following on social media, a QR Code, or a website to visit. Track those responses to determine if the signage was effective in reaching people.
Promote, host, or develop educational meetings, seminars, or trainings;	The events shall address ways attendees can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. A minimum of two events shall be held, hosted or promoted annually. These events may address different pollutants/audiences.	Attendance, and any distributed education materials shall be tracked. This shall be used to gauge interest in the topic. Consider using a questionnaire or follow up survey to track if the attendees retained information or found the event beneficial.
Fact sheets/ brochures/ utility bill insert/ door hangers.	The sum of all fact sheets, brochures, bill inserts, handouts, or e-mails distributed in one year shall be at minimum equal to the most recent U.S. Census Bureau decennial housing units value for the permit area.	The applicable U.S. Census housing units value shall be recorded, and the amount of material shall be recorded. This may be a combination of materials, using a targeted approach to get the appropriate material to the applicable audience.
Paid membership in a regional or watershed group.	The organization must focus on stormwater runoff.	The group may enact BMPs on behalf of all members, the permittee must participate to ensure their MS4 has representation, and receives some of the educational BMPs.

Targeted education campaign, via mail, email, or in person.	Minimum of one annually OR with a specific event. (Examples: Sediment control with small building permit; leaf litter email during street sweeping season, or education brochure to all businesses conducting certain activity.)	Education material distributed, or amount of people contacted shall be tracked. Follow up on if noticeable behavior has changed.	WS #3.
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4.1.D The MS4 Operator must create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) must have an effort to impact stormwater runoff by improving water quality.

1. Using **Table IV**, the MS4 Operator shall implement a minimum of the follow including the tracking and adaptive management processes:

Group A: Each permit cycle; one (1) involvement BMP from Table IV.

Group B: Each permit cycle; two (2) involvement BMPs from Table IV.

Group C: Each permit cycle; three (3) involvement BMPs from Table IV.

Co-permittees: Each permit cycle; one (1) involvement BMP in the boundaries of each co-permit.

Table IV Involvement BMPs

BMPs	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Stream/lake or Watershed clean-up events; Litter clean-up events such as Missouri Stream Team, Adopt-A-Spot, Adopt-A-Street, Adopt-A-Stream;	To be considered an event, the land area cleaned must be at minimum 2 acres, or 400 yards of stream/ streambank/ watershed, or 2 miles of road side. (These may be combined such as 1 acre of land and 200 yards of stream.)	Track the area or distance cleaned (by acre, yard or lane miles), the amount of waste removed (by tonnage, cubic yard, or Stream Team bag count) and the attendance. Use the waste measurements to determine if there are priority areas for litter entering stormwater, or areas for illegal dumping.
Habitat improvement; Tree planting; Invasive vegetation removal; Stream restoration.	To be considered an event, the project must be a minimum of .5 acres or 25 yards. These may be a combination. This may take place in streams, parks, areas adjacent to public waterways, and/or other green space.	Track the location(s) along with the amount planted or remove, or miles improved or restored. Analyzing the areas improved upon, the MS4 Operator shall see if there are opportunities to join the improve areas, or work on a watershed basis.
Volunteer water quality monitoring;	To be considered an event, the monitoring must be conducted at minimum once a year.	Record the sites for the volunteers, what parameters were measured/monitored, and the dates of the monitoring.
Hold events to train residents, or work a project for homeowner associations (HOAs), or other public groups. The event or training must cover stormwater related topics such as: building rain barrels; Fertilizer application training; Rain garden/ bio retention creation or maintenance; How to recognize illicit discharge activities and communicate	Provide one project or training at minimum annually.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.

observations to appropriate MS4 staff.			WS #3.
School, public event, etc. educational display/booth; Provide information or displays that work to improve public understanding of issues related to water quality.	Provide one booth or display at minimum annually. The booth or display must be staffed by staff of the MS4 at minimum 50% of the time the event is open to the public.	Record the number of interactions, the overall attendance, or the number of hours the event was staffed. Record the topic covered, and any educational materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.	
Stormwater related speaker series;	Provide a minimum of two sessions a year. These may be different speakers and/or audiences.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.	
Ongoing yard waste collection, designated yard waste collection area, household hazardous waste collection, or street sweeping program.	Provide the service as an annual occurrence or at readily accessible location. For street sweeping, this shall be conducted at minimum twice a year.	Track the amount collected. If educational information is being used in conjunction with this activity track for changes due to the education. Tracking can be used with illicit discharge tracking, to determine if the rate of this type of discharges or dumping were reduced.	
MS4 area wide stormwater survey.	A series of public survey to establish a baseline in the first year of the permit and then a minimum of annually throughout the permit cycle.	Use the same or similar questions to evaluate BMPs and/or full program effectiveness. Surveys can be done with utility bills, online, social media, or a combination. All participation should be tracked.	

4.1.E The MS4 Operator shall create or support the involvement BMP(s) in Section 4.1.D. To be considered support given to the coordinating groups the MS4 Operator shall at minimum conduct the following or similar:

- Plan, or assist with planning, the event or activity;
- Contribute supplies, materials, tools, or equipment;
- Provide assistance from MS4 staff during the activity;
- Provide assistance with recruiting volunteers for events;
- Make a space available for projects, meetings, or events;
- Advertisement for the events;
- Supply disposal services;
- Arrange land or stream access;
- Financial support; and
- In-kind donations such as food.

4.1.F Using adaptive management as required in parts 4.1.A.3.d and 4.1.B.1.c, all MS4 Operators shall review their Public Education and Outreach on Stormwater Impacts Program, at minimum, annually and update implementation procedures and/or BMPs as necessary within the requirements of this permit. This may be conducted when preparing the MS4 Stormwater Management Program Report for submittal to the Department.

4.2 MCM 2. Public Participation

The permittee shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the permittee's Stormwater Program.

This program must provide opportunities for public participation of the permittee's permit renewal and shall, at a minimum, comply with any state and local public notice requirements. Additionally, the program must provide opportunities for public participation in activities related to developing and implementing the Stormwater Management Program.

The public participation program shall, at a minimum include the following:

- 4.2.A** The MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit, and description of the MS4s Stormwater Management Program (this may be the SWMP) prior to the submission of the renewal application to the Department.
- 4.2.B** As part of the public notice, if the MS4 Operator has a public website, the required items shall be posted on their website with a way to submit comments, along with the standard public notice methods for the MS4.
1. The permittee shall respond to comments received during the comment period.
 2. The MS4 Operator shall retain copies of any public comments and records of information submitted by the public received as part of the public notice process. These comments and responses shall be made available to the public or the Department upon request.
- 4.2.C** The MS4 Operator shall hold a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. This meeting shall be advertised at least thirty (30) days prior to the public meeting.
1. As part of the notice of public meeting, if the MS4 Operator has a public website, the MS4 Operator shall post on that site, along with the standard public notice methods for the MS4. The notice of the public informational meeting, including the date, time and location.
 2. The meeting must be held within the service area of the MS4. Co-permittees shall hold the meeting within the boundaries of each co-permittee.
- 4.2.D** The MS4 Operator shall have a publicly available method to accept public inquiries, or concerns, and to take information provided by the public about stormwater and stormwater related topics.
1. This method, or a combination of method, shall encompass all MCMs of this permit. This method may be a phone number, website comment form, voicemail box, an email address, social media platform, or a combination of these.
 2. All reports shall be tracked, recording the topic, location, and concern. This information can help identify pollutants of concern, priority areas, pollutant sources, educational needs, and other information the MS4 Operator may use to evaluate the Stormwater Management Program.
- 4.2.E** If the MS4 Operator utilizes a stormwater management panel or committee, the MS4 Operator shall provide opportunities for citizen representatives on the panel or committee. The attendance of the meeting shall be recorded.
- 4.2.F** If the permittee has a governing board such as; County Council, City Council, or Board of Curators, a representative of the MS4 Operator, who is familiar with the MS4 Stormwater Program, shall provide an update to the governing board. This shall be conducted at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.
- 4.2.G Existing permittees:** Shall evaluate their current program to ensure it is in compliance with this permit and promoted to the community. Existing permittees shall modify their program as necessary, and develop and implement elements, as necessary, to continue reducing the discharge of pollutants from the MS4 to the maximum extent practicable, following the requirements of Section 4.2 of this permit.
- 4.2.H Newly regulated permittees:** Shall develop a stormwater Public Participation program. The Permittees shall have the program fully implemented by the end of this permit term.
- 4.2.I** Tracking mechanisms shall be used for tracking attendance, inquiries or concerns per the requirements of Section 4.2 of this permit. Using adaptive management, all MS4 Operators shall review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of this permit. This shall be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the MS4 Governing board and if the community and MS4 government are working together for water quality. Any additional events and/or BMPs shall be acknowledged in the Stormwater Management Program report.

4.3 MCM 3. Illicit Discharge Detection and Elimination (IDDE)

The MS4 Operator shall implement, and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) into the regulated MS4.

The illicit discharge detection and elimination program shall at minimum, include the following:

4.3.A A current storm sewer system map that shall be updated as needed to include features which are added, removed, or changed. This map may be paper or electronic.

This storm sewer map, must show at a minimum:

1. The location of all MS4 outfalls. The map shall be detailed enough that the outfalls can be accurately located;
2. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls;
3. The boundary of the regulated MS4 area;
4. The map shall be readily available and used by field staff as needed; and
5. The map and any accompanying necessary information shall be made available to the Department upon request.

4.3.B The MS4 Operator must record the sources of information used for the map and track, at minimum:

1. A numbering or naming system of all outfalls;
2. Dates that the outfall locations were verified/ or last field survey; and
3. For newly added outfalls, the date that it was added to the storm sewer system.

4.3.C The MS4 shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions.

This prohibition shall be through ordinance or other regulatory mechanism, to the extent allowable under state or local law. This may be accomplished by more than one ordinance or mechanism.

This may be done through a "nuisance code" however it must be certain that non-stormwater discharges are covered in this code. Such non-stormwater discharges may include, but are not limited to:

- Litter;
- Household hazardous waste disposal;
- Leaf disposal;
- Use of soaps & detergents with discharge to stormsewer;
- Illegal dumping of solid waste;
- Vehicle fluid disposal;
- Grass clippings;
- Pet waste; and
- Sewage.

4.3.D A dry weather field screening strategy.

1. The MS4 Operator shall conduct (or have conducted on their behalf) outfall field assessments. The screening shall be conducted during dry weather conditions (a minimum of 72 hours after the last precipitation event) to check for the presence of a discharge.

Existing permittees:

- a) A minimum of 60% of all outfalls shall be screened during the permit cycle.
- b) Priority areas, such as those listed in 4.3.H, shall be screened each year.

Newly regulated permittees:

- a) All outfalls shall be located and screened during the 5 year permit cycle.
- b) Priority areas shall be established.

2. This screening shall include a checklist or other tracking device to; ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. This shall be used regardless of the presence of dry weather flow.

When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:

- Date and time;
- Weather conditions and temperature (air & water);
- Color of discharge;
- Estimate of flow rate (this may be noted qualitatively);
- Odor;
- Surface scum, algal bloom, floatables or oil sheen present;
- Deposits or stains (note the color);
- Turbidity (may be noted qualitatively);

- Stream impact including vegetation, fish, wildlife;
- Length of impacted stream; and
- Notes of an obvious source of flow (such as lawn irrigation, etc.)

4.3.E The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program.

These procedures are for possible illicit discharges, and may be collected, and analyzed by a contracted lab, or similar agreement with another entity who is equipped and experienced in sample collect and analysis.

1. This diagnostic monitoring shall include sampling unknown discharge from MS4 outfalls that are found to be flowing or ponding more than 72 hours after the last precipitation event and considered to be an illicit discharge.
2. The samples shall be analyzed for relevant parameters to determine if a pollutant is involved.
 - a) Relevant parameters will need to be determined on a case by case basis depending on the nature of the discharge and what the potential sources may be.
 - b) The MS4 Operator shall have the ability to sample for and analyze the samples. This may be done through a contract lab or similar agreement.
 - c) Possible parameters sampled for and analyzed when deemed applicable include but are not limited to:
 - pH;
 - Oil and grease;
 - *E. Coli* or fecal coliform;
 - Surfactants or fluorescence concentration;
 - Specific conductivity;
 - Ammonia;
 - Chlorine;
 - Dissolved oxygen; and
 - Fluoride/ hardness.

4.3.F The MS4 Operator shall maintain procedures for tracing the source of an illicit discharge.

If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source shall be traced. These procedures shall include mechanisms to locate and follow stormwater infrastructure. A variety of investigative tools may be used as appropriate for each situation, such as, but not limited to;

- Visually following the flow;
- Storm sewer system sampling;
- Full storm sewer map;
- Closed circuit television;
- Smoke or dye tracing; and
- Tunnel entry.

4.3.G The MS4 Operator shall maintain procedures for removing the source of the discharge.

After locating the source, the pollutant and source must be removed. While the exact procedure will depend on the source and the circumstances, The MS4 Operator must maintain any necessary contacts with appropriate entities that may be needed for these procedures (such as an environmental cleaning company). This information shall be made available to the responsible staff.

The MS4 Operator is encouraged to work with the source of the illicit discharge to remedy the situation. Possible remedies shall include:

1. Implement source control or treatment BMPs to prevent reoccurrence of the violation;
2. Remediation or restoration of affected property.

4.3.H In order to prevent further illicit discharge, the MS4 Operator shall identify priority areas such as, but not limited to:

- Areas with evidence of ongoing illicit discharges;
- Areas with a past history of illicit discharges;
- Certain land use influencing stormsewer/ proximity of potential pollutant sources;
- Areas of higher population density;
- Neighborhoods with onsite sewage systems;
- Areas with known litter or dumping issues;
- Areas with large or increased number of citizen complaints; and
- Industrial areas

Annually, the MS4 Operators shall evaluate this priority area list and/or map and update as necessary to reflect changing priorities.

If a co-permittee, each co-permittee shall identify priority areas within their boundaries.

- 4.3.I** The MS4 Operator shall maintain written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.
1. This shall include a description of this dry weather field screening strategy and implementation schedule to detect and address non-stormwater discharges, including discharges from illegal dumping and spills, to the permittee's system.
 2. This shall include a description of how the discharge is evaluated and the possible parameters that are tested.
 3. If contracted to another entity, the contact information shall be listed.
- 4.3.J** The MS4 Operator must conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, municipal staff, or adjacent MS4s.
The investigation must work to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection.
Responses shall meet the following investigation timelines:
1. Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
 2. Investigate (or refer to the appropriate agency with the authority to act) within five (5) business days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.
 3. If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4 Operator's municipal storm sewer system, the MS4 Operator must notify the other MS4's Operator within 24 hours of discovery or as soon as practicable.
- 4.3.K** The MS4 Operator shall have procedures for appropriate enforcement, this may include fines, the ability to collect cleanup and abatement costs, and actions to ensure that the permittee's illicit discharge ordinance (or other regulatory mechanism) is being implemented.
1. The MS4 Operator shall maintain a written description of the enforcement procedure. This shall include a copy of or link to the ordinance and/or other regulatory mechanism that the MS4 Operator will use to enforce the prohibition of illicit discharges into the MS4.
- 4.3.L** The MS4 Operator shall maintain a database, or other centralized system, to track dry weather field screenings, spills, incidents, and investigations.
1. Tracking mechanisms shall be used for incidents, investigations, enforcement and follow up. This data shall be used to continuously evaluate the effectiveness of the IDDE program. This data shall be reviewed to determine if there is a new priority area.
The MS4 Operator shall record annually at a minimum:
 - a) Number of outfalls screened;
 - b) Number of complaints received and investigated; and
 - c) Number of illicit discharges removed.
 2. The MS4 Operator shall document all investigations to track at a minimum:
 - a) The date(s) the illicit discharge was observed and investigated;
 - b) Summary of procedures used to investigate the illicit discharge;
 - c) The outcome of the investigation including sample results and findings;
 - d) Any follow-up of the investigation including cleanup, enforcement actions, visits to confirm the illicit discharges have been removed; and
 - e) The date the investigation or issue was closed or resolved.
- 4.3.M** The MS4 Operator shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, this may work with part 4.1 and part 4.6 of this permit (MCM #1 and MCM #6).
- 4.3.N** All MS4 Operators shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary.
- 4.3.O Existing permittees:** Shall evaluate their current program to ensure that it is in compliance with this permit.
1. Any revisions to the ordinance or regulatory mechanism shall be complete in the first year of the permit cycle.
 2. Maintain an updated map with the items listed above. Items not included in the current map must be added within the first 2 years of the permit cycle.

- 4.3.P Newly regulated permittees:** Shall develop an IDDE Program. Newly regulated permittees shall describe the IDDE Program in their SWMP. The MS4 Operator shall have the program fully implemented within five (5) years of permit issuance.
1. If the MS4 Operator needs to develop the regulatory mechanism, the ordinance or regulatory mechanism must be adopted within the first 3 years of permit coverage.
 2. Develop or update a map in accordance with Section 4.3.A of this Permit. The MS4 Operator must develop or update a map with the items listed above. All outfalls shall be dry weather field screened within the first five (5) years of permit issuance.
- 4.3.Q** The MS4 Operator must develop and implement or maintain a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system.
- This shall include staff who may handle materials which may become an illicit discharge. This shall include discharges through spills, improper disposal, mismanagement, improper vehicle or equipment washing or rinsing. This training may be conducted with resources online and may be focused for what topics are relevant to their position.
1. Each staff shall take this training at minimum within one year of a new employee being hired.
 2. The applicable staff may include the following; (unless the MS4 Operator does not have the listed department under their jurisdiction). Additional staff or departments shall be included if appropriate;
 - Fleet maintenance staff;
 - Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
 - Road maintenance staff;
 - Road salt/de-icing staff; and
 - Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.
 3. The training dates, topics and the attendance shall be recorded.
 4. Reviews of the training effectiveness shall be considered after municipal site inspections or after an incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the MS4 Operator should consider if the training is enough or is ineffective. The MS4 Operator shall consider ways to survey or test staff to see if the training is effective.
- 4.3.R** Using adaptive management the MS4 Operator shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to continuously evaluate the effectiveness of each BMP and the implementation of each BMP.
- Any additional BMPs shall be acknowledged in the Stormwater Management Program report.
- 4.4 MCM 4. Construction Site Stormwater Runoff Control**
- The MS4 Operator shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to their MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater 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.
- 4.4.A** The MS4 Operator shall have a law, ordinance and/or other regulatory mechanism to require construction site runoff control BMPs at construction/land disturbance sites greater than or equal to one (1) acre or less than one acre if the construction activity is part of a larger common plan or development or sale that would disturb one acre or more. The mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under State, or local law.
- 4.4.B** The MS4 Operator shall review pre-construction plans. These reviews at a minimum shall:
1. Incorporate the consideration of potential water quality impacts through procedures for site plan review. The site plan review procedures shall evaluate threats to water quality shall by considering, at minimum, the following factors:
 - a) Soil erosion potential;
 - b) Site slope;
 - c) Project size and type;
 - d) Sensitivity of receiving waterbodies;
 - e) Discharge flow type (pipe or sheet flow);
 - f) Location of discharge point in relation to receiving water;
 - g) Proximity of the site to receiving waterbodies; and
 - h) Other factors relevant to the MS4 service area.
 2. Use a checklist, or other listed criteria, to ensure consistency and completeness.
 3. Include requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures.

- a) This includes; temporary BMPs throughout the life of the land disturbance, and permanent BMPs remain on site as required by local codes and ordinances.
- 4. Consider ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
- 5. Include requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality.
This shall include at a minimum:
 - a) Discarded building materials;
 - b) Concrete truck, and mortar mix washout;
 - c) Chemicals (such as fertilizer, paint, oils, herbicides, pesticides);
 - d) Litter; and
 - e) Sanitary waste.

4.4.C The MS4 Operator shall establish authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, all MS4 Operators shall implement procedures for inspecting construction/land disturbance projects.

The construction site runoff control program shall implement at a minimum:

- 1. Identify priority sites for inspection based on nature of the construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water;
- 2. Construction site inspections shall include assessment of compliance with the MS4 Operator's construction site stormwater runoff control ordinance or regulatory mechanism, and other applicable ordinances;
- 3. The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement polices to require BMPs are implemented and effective;
- 4. Final inspection, upon completion of the land disturbance and prior to final approval of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.
- 5. The inspections conducted by the MS4 Operator shall be documented with a checklist. The checklist must include structural BMPs and check on the self-inspection which are conducted by the construction site operator. These MS4 Operator checklists may be electronic.

4.4.D The construction site runoff control program shall include an established, escalating enforcement policy that clearly describes the action to be taken for violations.

The program shall have written procedures to ensure compliance with the MS4 Operator's construction site runoff control regulatory mechanism. This shall include the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain penalties, injunctions or other measures will be used.

- 1. The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.
- 2. Enforcement responses to violations must consider the following criteria at minimum:
 - a) Degree and duration of the violation;
 - b) Effect the violation has on the receiving water;
- 3. Enforcement actions shall be timely in order to ensure the actions are effective. These procedures and actions must be written and available for MS4 staff for consistency and training purposes.
- 4. The MS4 Operator must have a minimum of two (2) enforcement actions they are able to use.
Possible enforcement actions include, but are not limited to:
 - a) Stop Work orders;
 - b) Verbal education or educational materials given to the construction site operator;
 - c) Written warnings or notice of violation;
 - d) Bonding or escrow requirements;
 - e) Fines/ penalties; and
 - f) Denials for previous non-compliance or current non-compliance at other sites.

4.4.E The MS4 Operator shall require the construction site operator to conduct inspections at minimum:

- 1. Every fourteen (14) days, when construction is active.
- 2. Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased.

Checklists used for these inspections conducted by construction site operators shall either be submitted to the MS4 Operator, or the MS4 Operator shall verify that these inspections are being conducted by the construction site operator checklists during MS4 Operator inspections.

4.4.F The MS4 Operator shall maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence.

The inventory must contain:

1. Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);
2. Size of the project/ area of disturbance;
3. If the site is a priority site/ how high of priority;

- 4.4.G** The MS4 Operator shall track their oversight inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.

The tracking must contain at a minimum:

1. Inspection dates and time;
2. Inspector name;
3. Inspection findings; and,
4. Follow up actions and dates, including corrective actions and enforcement actions.

- 4.4.H Existing permittees:** Review the Stormwater Management Program including ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within the first year of this permit issuance. The inventory of active sites must be updated as new projects are reviewed and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within one (1) year of this permit issuance.

- 4.4.I Newly regulated permittees:** If the MS4 Operator needs to develop this construction site runoff program, the SWMP shall describe the construction site stormwater plan and scheduled implementation. Development of this program shall be completed within the first three (3) years of the permit issuance. If the MS4 Operator's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections with the SWMP. For new permittees, the inventory must be completed with one (1) year of permit issuance and then updated as new projects are permitted.

- 4.4.J** The Stormwater Management Program must include procedures for the MS4 Operator to receive and consider information submitted by the public about land disturbance sites. This may be in combination with 4.2.D of this permit.

- 4.4.K** The MS4 Operator shall provide, or support access to, construction site runoff control training for MS4 inspectors and plan reviewers at minimum once during this permit cycle. This education shall be tracked or documented.

- 4.4.L** The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.

- 4.4.M** Using adaptive management, all MS4 Operators shall review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the ordinances, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures, and effectiveness of training procedures to ensure compliance with these requirements and determine if changes are needed. This annual review may include but is not limited to:
1. Evaluating the most common violations, how the violations are handled, how many are escalated;
 2. If the education program can assist in reducing violations;
 3. Determining if the site plans match the sites when violations arise or if additional items need to be evaluated at plan review;
 4. Assessing public complaints being addressed in a timely manner; and
 5. Evaluating if the inspections thorough and consistent across different sites.

Any additional BMPs shall be acknowledged in the SWMP.

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

The MS4 Operator shall continue or develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into the regulated MS4.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts

- 4.5.A** The MS4 Operator shall maintain and utilize an ordinance(s) or other regulatory mechanism(s) to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre including projects less than one acre that are part of a larger common plan of development or sale. The

goal of this approach is to arrive at designs that protect sensitive areas, minimize the creation of stormwater pollution, BMPs that effectively remove stormwater pollution, and attempt to maintain predevelopment runoff conditions.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts from stormwater, after construction.

1. If adopting a set of standards from another MS4 or other established standards, the MS4's ordinance may incorporate by reference, therefore the MS4 does not need to incorporate the entire guidance into their codes.
2. This program may be accomplished through one or multiple ordinances or regulatory mechanisms.

4.5.B The MS4 Operator shall continue or develop a strategy to minimize water quality impacts. This shall include a combination of structural and/or non-structural controls (BMPs) appropriate for the permittee's community.

1. Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs.
The ordinance or regulatory mechanism for structural post-construction controls, or water quality facilities, shall include:

- a) Adoption or development of numeric or technical performance and/or design standards to control post-construction stormwater discharges.

These post-construction stormwater standards are for designing, installing, implementing, and maintaining stormwater control measures which may include, but are not limited to BMPs that; infiltrate, evapo-transpire, harvest, detain, retain, and/or reuse stormwater.

The MS4 Operator must adopt or maintain local stormwater discharge design standards that consider parameters such as; site discharge volume, rate, duration, and frequency for new development and redevelopment sites with the intent to minimize the impact of stormwater runoff on water quality.

2. Non-structural controls include but are not limited to; stream buffers, no mow zones, preservation of open spaces, tree preservation, impervious cover reduction, land use planning, and low impact development.

The ordinance(s) or regulatory mechanism(s) for non-structural post-construction controls, shall include:

- a) Adoption or development of preventative actions that involve management and source controls such as, but not limited to:

- Policies and ordinances that provide requirements and standards to direct development to identified areas;
- Protection of sensitive areas such as wetlands and riparian areas;
- Maintain and/or increase open space (which may include a dedicated funding source for open space acquisition);
- Maintain requirements for buffer zones along water bodies;
- Require minimizing impervious surfaces;
- Require minimizing disturbance of soils and vegetation;
- Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure;
- Programs which incentivize the use of green infrastructure;
- Requirements for minimization of directly connected impervious areas; and
- Tree preservation ordinances.

4.5.C Pre-construction plan review shall be conducted by the MS4 Operator to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance.

The structural or non-structural controls chosen shall; protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This can be achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects, or the permittee may achieve this goal through a method more appropriate for its community.

1. The plan review process shall use a checklist. This may be part of the same plan review in MCM 4.
2. The plan review process shall evaluate non-structural BMP selection first, such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space. Non-structural BMPs primarily prevent stormwater runoff from a site, which could influence the options for structural BMPs which help mitigate the stormwater related impacts after they have occurred.

4.5.D The MS4 Operator shall have ordinances or similar enforcement mechanisms to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs, including, as appropriate, agreements between the MS4 Operator and other parties such as post-development landowners or regional authorities.

1. Long term O&M shall be addressed during the plan review and approval process.

2. Copies of O&M manuals shall be retained by the party responsible for the post-construction BMP, and with the MS4 Operator. This may be done electronically.

- 4.5.E** The MS4 Operator shall inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:
1. A minimum of one (1) inspection shall be conducted during construction, and one (1) inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. This may be conducted in combination with MCM 4 inspections.
 - a) The MS4 inspector shall have access to the approved plans to ensure proper installation.
 2. A minimum of once in the first three years after the installation by, the MS4 Operator.
 3. Annually by the owner or operator of the post-construction BMP, or by the MS4 Operator. If completed by the BMP owner or operator, this inspection report shall be submitted to the MS4 Operator for evaluation and review.
 4. The MS4 Operator shall inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. This must include installations with ongoing or open enforcement issues.
- 4.5.F** The MS4 Operator must maintain a plan designed to ensure compliance with the MS4's post-construction water quality regulatory mechanism. This plan shall include escalating enforcement mechanisms the MS4 Operator will use to ensure compliance.
The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.
1. Enforcement responses to violations must consider at minimum:
 - a) Degree and duration of the violation;
 - b) Effect the violation has on the receiving water;
 - c) Compliance history of the post-construction BMP owner or operator; and
 - d) Cooperation of the owner or operator with compliance efforts.
- 4.5.G** Enforcement actions shall be timely in order to ensure the actions are effective. The MS4 Operator shall begin enforcement actions within thirty (30) days of discovering a violation.
The MS4 Operator shall maintain a minimum of two possible sanctions. These include, but are not limited to:
1. Education regarding the BMP and verbal warnings;
 2. Written warnings or notice of violation (this includes email notification);
 3. Property lien; and
 4. Fines.
- 4.5.H** The MS4 Operator shall maintain an inventory tracking the water quality post-construction BMPs. This inventory must contain, at a minimum:
1. Relevant contact information for the responsible person(s) or entity (e.g., tracking number, name, address, phone, etc.);
 2. The type of post-construction BMP;
 3. Applicable operations and maintenance documents;
 4. Date the MS4 Operator approved the construction site plan; and,
 5. If the water quality facility is owned or operated by the MS4, the tracking shall also include any maintenance, such as sediment clean-out or replanting.
- 4.5.I** The MS4 Operator shall also track the post-construction BMP inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.
The MS4 Operator shall track at a minimum:
1. Inspection dates/ times;
 2. Inspector name(s);
 3. Inspection findings; and,
 4. Follow up actions including all enforcement actions.
- 4.5.J** **Existing permittees:** Evaluate the ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements and determine if changes are needed. Any changes necessary to be in compliance with this permit shall be completed within the first two (2) years of permit issuance. The inventory of water quality facilities must be updated as new facilities are added and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within two (2) years of this permit issuance.
- 4.5.K** **Newly regulated permittees:** Shall develop the ordinance or regulatory mechanism. Development of this program shall be completed within the first five (5) years of the permit issuance.

For new permittees, the inventories of public and private post-construction water quality BMPs must be completed within two (2) years of permit issuance and then updated as new projects are permitted and projects are completed.

- 4.5.L** The MS4 Operator shall provide appropriate training for MS4 inspectors at minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The MS4 shall provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs.
- 4.5.M** Using adaptive management, all MS4 Operators shall review, at minimum annually, their Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed. This annual review may include but is not limited to:
1. Reviewing the number and types of developments;
 2. How many BMPs were installed/inspected;
 3. The amount of watershed area being treated;
 4. The types of violations found and how frequently; and
 5. How education could improve the effectiveness of the program.

Any additional programmatic BMPs shall be acknowledged in the Stormwater Management Program Report.

4.6. MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

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.

- 4.6.A** The MS4 Operator shall maintain and utilize an employee training program for MS4 municipal operations staff. The training shall be given at minimum annually to all MS4 staff who work with material handling, at MS4 owned or operated vehicle/equipment maintenance areas, storage yards, and material storage facilities. This may be broken up into staff units, or by applicable topics.
- 4.6.B** The training shall be used to prevent and reduce stormwater pollution. The training shall cover a minimum of the following topics/ activities (if applicable to the MS4):
1. Vehicle and equipment washing;
 2. Fluid disposal and spills;
 3. Fleet, equipment, and building maintenance;
 4. Park and open space maintenance procedures (including fertilizer, herbicide, pesticide application);
 5. New construction, road maintenance, and land disturbances;
 6. Stormwater system maintenance;
 7. MS4 operated salt and de-icing operations;
 8. Fueling;
 9. Solid waste disposal;
 10. Street sweeper operations; and
 11. Illicit Discharges.
- 4.6.C** The MS4 Operator shall:
1. Maintain material to use in the training program, such as those available from the EPA, the state, or other organizations.
 2. Maintain written procedures for the training program. Include a description of how this training will coordinate with all other minimum control measures (such as Illicit Discharge), monitoring and TMDL implementations where applicable.
 3. Maintain a written schedule to offer topic specific training when it is appropriate. Such as, swimming pool discharges in the summer, leaf disposal in the fall, proper salt clean-up and usage in the winter.
- 4.6.D** The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program. This shall include a minimum of the following if owned and operated by the MS4 and if applicable to the MS4:
1. Maintenance yards;
 2. Fleet or maintenance shops, including parks department;
 3. Storage yards;
 4. Parks, golf courses, swimming pools, and splash pads;
 5. Municipal parking lots;
 6. Salt/sand storage locations;
 7. Snow disposal areas; and
 8. Other locations expected to contribute floatables and/or pollutants.

- 4.6.E** The MS4 Operator shall maintain a list of industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility. This includes; municipal projects with a land disturbance permit, wastewater facilities, airports, etc. NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list; however, the MS4 Operator should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE program.
- 4.6.F** The MS4 Operator shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from municipal facilities listed in Section 4.6.D and 4.6.E. These controls shall include at a minimum, where applicable:
1. A list of potential pollutant sources at each facility, such as materials used and stored on site;
 2. A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues;
 - a) Records shall be kept for inspections and follow up. This may be a checklist, and may be electronic;
 3. Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4 where needed.
 - a) A map with descriptions of these BMPs shall be maintained for each facility;
 4. All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the permittee shall be stored so these materials are not exposed to stormwater;
 5. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state;
 - a) This shall include spill kits when liquid product is stored at a facility; and
 - b) Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 6. Tracking of rock salt/brine or other deicer usage;
 7. Maintaining municipal salt storage area(s) after use of rock salt, at minimum:
 - a) Sweep and/or shovel spillage in loading area and storage area, and
 - b) Unload salt hoppers or keep under cover when salt is in the hopper.
- 4.6.G** The MS4 Operator shall have procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction. This waste, shall include at minimum, if applicable to the permittee:
1. Street sweeper spoils and washout;
 2. Accumulated sediment;
 3. Dredged materials;
 4. Floatables, trash and litter;
 5. Leaves, other organic matter; and
 6. Other debris.
- 4.6.H** The MS4 Operator shall maintain and utilize the following procedures, at minimum, for the washing of all municipal vehicles and equipment (if applicable to the MS4):
1. Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent treatment; and
 2. Any wash or rinse water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment.
 3. Any washing or rinsing activities shall be conducted in an appropriate area so the water is treated. This area(s) shall be marked on the map of the facility.
- 4.6.I** The MS4 Operator shall maintain written explanation of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining inspection reports or checklists. Individual Stormwater Pollution Prevention Plans or one overarching Operations and Maintenance Manual for all applicable MS4 facilities may be used to comply with this requirement. If a unified document is used, each individual site shall be familiar with the document, and a copy shall be present on each site referenced in the document or available electronically. Annually, the MS4 Operator shall evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.

- 4.6.J** The MS4 Operator shall maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects shall require the protection of water quality in the standards that are used to plan, design, build, and maintain stormwater infrastructure. Flood management projects are those projects developed or designed to reduce flooding.
- 4.6.K Existing permittees:** Shall evaluate the current Stormwater Management Program including training, inspection procedures, and other municipal operation procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within one (1) year of this permit issuance.
- 4.6.L Newly regulated permittees:** Shall develop this program. The SWMP shall describe the pollution prevention/ good housekeeping plan and scheduled implementation. Development of this program shall be completed within the first five (5) years of the permit issuance.
- 4.6.M** Using adaptive management, all MS4 Operators shall review their Municipal Operations Program, at minimum, annually and update implementation procedures as necessary within the permit requirement. Any additional BMPs shall be acknowledged in the Stormwater Management Program Report.

PART 5. MONITORING, RECORDKEEPING, AND REPORTING

5.1 Monitoring

- 5.1.A** The MS4 Operator shall retain records of any monitoring information used to complete the application for this operating permit, implementation of any part of this operating permit, and implementation for any part of the permittee's Stormwater Management Program for a period of at least three (3) years from the date of the sample, measurement, or analysis. This period may be extended by official written request by the Department at any time. These records may be maintained electronically.

Monitoring data shall include, if applicable, the below information:

1. All calibrations and maintenance records of sample or analytical equipment;
2. All original strip chart recordings for continuous monitoring instrumentation;
3. The date, location, and time of sampling or measurement;
4. Name of the individual(s) who performed the sampling or measurements;
5. The date(s) analyses were performed;
6. Name of the individual(s) who performed the analyses;
7. The analytical techniques or methods used; and
8. The results of such analyses.

- 5.1.B** Any monitoring conducted for the purpose of implementation of any part of this permit shall be conducted in accordance to test procedures approved under 40 CFR Part 136 unless another method is required under 40 CFR subchapters N or O.

5.2 Recordkeeping

All records required by this permit may be maintained electronically, as long as they are accessible upon request by the Department. If a non-electronic version is kept, the permittee shall retain the most recent versions of the records and shall be accessible to the Department upon request.

- 5.2.A** The permittee shall retain records of all activities requiring recordkeeping by the Stormwater Management Program, a copy of the NPDES permit, a copy of all ordinances, policies, and formal procedures for all six (6) MCMs and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the report or application. This period may be extended by official request of the Department at any time.
- 5.2.B** The permittee shall retain the most recent version of their SWMP at a reasonable location accessible to the Department, this may be done as a publicly available website.
- 5.2.C** If requested in writing by the public, the permittee shall submit the items required under Part 5 of this permit, including a copy of the permit, SWMP, or application.
- 5.2.D** The permittee shall submit the items contained in Part 5 of this permit to the Department upon request.

5.3 MS4 Stormwater Management Program Report

- 5.3.A** A report to the Department on the status of the MS4's program is due annually on or before February 28th. This report shall cover the previous year from January 1st to December 31st. The report shall be submitted on the Department approved, MS4 Stormwater Management Program Report form. If approved by the Department, permittees may submit the MS4 Stormwater

Management Program Report using an alternative report format. The MS4 Operator shall submit the MS4 Stormwater Management Program Report containing, at a minimum:

1. Information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable;
2. The status of the MS4's compliance with permit conditions;
3. Assessment(s) of the appropriateness of identified BMPs and corresponding measurable goals for each MCM;
4. A summary of results of information collected and analyzed during the reporting period, including monitoring data or quantifiable values per the MS4's measurable goals;
5. A summary of the TMDL Assumptions and Requirement Attainment Plan (ARAP), if applicable, containing the implementation status of BMPs and measurable goals specific to the TMDL ARAP or progress toward implementing the schedule for implementation of the TMDL ARAP. The summary shall also include any changes to BMPs and corresponding measurable goals;
6. If the permittee is utilizing integrated planning, the permittee shall provide a summary of the status of the integrated plan; and
7. A statement if the permittee is relying on another entity to satisfy some of the permittee's permit obligations. If applicable, the permittee shall supply the name of the entity, the name of the entity's primary contact person, and other relevant contact information.

5.3.B Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data for the NPDES program. The eDMR system is currently the only Department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the Department. The facility must register in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due.

PART 6. SPECIAL CONDITIONS FOR TOTAL MAXIMUM DAILY LOADS

6.1 MS4s Subject to Total Maximum Daily Loads (TMDL)

6.1.A Any regulated MS4 identified in an EPA approved or established TMDL with an applicable Wasteload Allocation (WLA) shall implement steps toward the attainment of applicable WLAs in accordance with 40 CFR 122.44(k)(2) and (3).

6.1.B The MS4 Operator shall develop a TMDL ARAP to address the TMDL's assumptions and requirements where applicable.

6.1.C The TMDL ARAP shall be incorporated into the Stormwater Management Program and include, at a minimum:

1. A plan to identify potential sources of the pollutants(s);
2. A plan to implement BMPs to address the sources within the MS4 service area; and
3. A schedule, including beginning and ending milestones, which are expressed as month and year to implement planned BMPs.

The schedule for the implementation of the TMDL ARAP shall be completed as soon as practicable, but is not limited to the five year term of this operating permit as attainment can take years or even multiple permit terms.

6.1.D BMPs shall be developed or designed with a purpose of reducing the pollutant(s) of concern. The ARAP shall list each BMP and shall contain a description of the BMP, the purpose of the BMP, and the expected result of the BMP.

6.1.E Measurable goals shall be established for each BMP or in conjunction with multiple BMPs.

1. Each measurable goal shall contain a statement clearly indicating how it will be established to determine the appropriateness of identified BMPs and progress toward the expected results of the BMP.
2. Measurable goals shall be quantifiable; however, if it is not feasible to utilize a measurable goal that is quantifiable, then the permittee shall provide justification indicating why the measurable goal cannot be quantifiable.
3. If applicable, measurable goals shall also utilize interim and completion milestone dates, and a periodic frequency of measurement to document progress. Interim and final milestone dates shall be established with a format of month and year, or as 1st, 2nd, 3rd, 4th, and 5th year of the operating permit cycle.

6.1.F An iterative process shall be utilized by the permittee documenting how each BMP is evaluated and subject to replacement or modification. The permittee shall apply reasonable further progress by replacing or modifying ineffective BMPs with effective BMPs.

- 6.1.G** If the permittee is subject to an approved or established TMDL, the permittee shall draft and submit their TMDL ARAP to the Department as soon as practicable but no later than 30 months after the date the EPA approves or establishes the TMDL or the effective date of their operating permit, whichever is later.
The initial TMDL ARAP is to be submitted to the Department's Water Protection Program, MS4 Team for review and approval at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102. The deadline for the TMDL ARAP may be extended through written request by the permittee and written approval by the Department.
- 6.1.H** The MS4 Operator shall submit annual TMDL ARAP status reports to the Department on February 28th of each year until the TMDL ARAP has been submitted.
The annual status report shall provide a brief update on the status of completion of the TMDL ARAP to be submitted to the Department. The deadline for the TMDL ARAP status report may be extended through written request by the permittee and with written approval by the Department. The annual status report shall be submitted to the Department's Water Protection Program, MS4 Team at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102.
- 6.1.I** If the Department approves the TMDL ARAP, it will be presumed that the TMDL ARAP is affordable by the permittee. If the Department disapproves a submitted TMDL ARAP and requires any additional or different controls or expenses, the Department will conduct an affordability analysis in support of the disapproval unless waived by the permittee. In addition to the disapproval, the Department shall provide an itemized list of recommendations, discrepancies, and plan corrective action(s) to the permittee in written correspondence, which will also provide deadlines for any corrective action(s).
- 6.1.J** If the TMDL ARAP has been submitted to the Department but has not received approval, the MS4 Operator is not required to implement any actions listed in their TMDL ARAP and shall notify the Department of this in their MS4 Stormwater Management Program Report.
- 6.1.K** If the TMDL ARAP has received Department approval, the permittee shall implement their TMDL ARAP in accordance to schedules established in the TMDL ARAP.
Implementation of all TMDL ARAP control measures shall be documented and retained by the permittee, and made available to the Department or the EPA upon request.
- 6.1.L** If the MS4 Operator has an approved TMDL ARAP, the permittee shall provide a summary listing the BMPs and the status of the measurable goals in the MS4 Stormwater Management Program Report.
- 6.1.M** If the MS4 Operator is subject to a TMDL, the MS4 Operator may demonstrate no additional controls are needed beyond the successful implementation of the six Minimum Control Measures (MCMs), which includes modifications to the BMPs or measurable goals, for the attainment with the TMDL's assumptions and requirements.
The demonstration is subject to Department approval. The MS4 Operator shall contact the Water Protection Program's MS4 Team to begin the process.
- 6.1.N** If the permittee has already developed an integrated plan, a separate ARAP is not be required provided the integrated plan meets the requirements outlined in section 6.1 of this permit.
Review and rating of an integrated plan is subject to the same requirements of section 6.1 of this permit. The MS4 Operator shall contact the Water Protection Program's MS4 Team to begin the process.
- 6.1.O** Permittees subject to existing TMDL Assumptions and Requirements shall submit their plan and status of implementation to the Department with the MS4 Stormwater Management Program Report required by this permit. Existing plans shall be subject to the same conditions listed in items 6.1.
- 6.1.P** If the EPA approved or established TMDL indicates that the permittee does not cause or contribute to the impairment, the permittee is not required to develop and implement any action contained in Part 6 of this permit.

PART 7. STANDARD PERMIT CONDITIONS

- 7.1.A** Duty to Comply. The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and the Federal Clean Water Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal.

- 7.1.B** Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
- 7.1.C** Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems installed by a permittee only when necessary to achieve compliance with the conditions of the permit.
- 7.1.D** Inspection and Entry. The permittee shall allow the Department or an authorized representative (including an authorized contractor acting as a representative of the Department), upon the presentation of credentials and other documents as may be required by law to:
1. Enter the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, and have the authority to request records be provided electronically in absentia.
 3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
 4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substance or parameters at any location.
- 7.1.E** Monitoring Methods. See Part 5.1 of this operating permit.
- 7.1.F** Need to Halt or Reduce Activity Not an Excuse. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- 7.1.G** Permit Actions. This permit may be modified, revoked, reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- 7.1.H** Duty to Reapply.
1. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
 2. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
 3. A permittees with currently effective general permit shall submit an application for renewal at least 180 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.) Continuation of expiring permits are in accordance with 10 CSR 20-6.010(10)(C) and subsequent amendments.
- 7.1.I** Administrative Continuation of the Permit. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 10 CSR 20-6.010(10)(C) and remain in force and effect. Any permittee who was granted permit coverage prior to the expiration date, and who has applied for renewal at least 180 days prior to the expiration date, will automatically remain covered by the continued permit until the earlier of:
1. Reissuance or replacement of this permit, at which time the permittee shall comply with the application conditions of the new permit to maintain authorization to discharge;
 2. Notice of termination;
 3. Issuance of a site-specific permit or alternative general permit for MS4 discharges; or

4. A permit decision by the Director not to reissue this general permit, at which time the permittee shall seek coverage under an alternative general permit or a site-specific permit.

- 7.1.J** Permit Transfers. Subject to 10 CSR 20-6.010(11), an operating permit may be transferred upon submission to the Department. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the MCWL or the CWA. (See 40 CFR 122.61. In some cases, modification or revocation and reissuance is mandatory.)
- 7.1.K** Procedures for Modification or Revocation. If at any time the Department determines that the quality of waters of the state may be better protected by reopening this permit, or revoking this permit and requiring the owner/operator of the permitted site to apply for a site-specific (individual) permit or alternative general permit, the Department may revoke a general permit and require any person to obtain such an operating permit as authorized by 10 CSR 20-6.010(13), 10 CSR 20-6.200(1)(B) or 10 CSR 20-6.200(6).
- 7.1.L** If this permit is reopened, modified, or revoked pursuant to this section, the permittee retains all rights under Chapters 536 and 644 Revised Statutes of Missouri upon the Department's reissuance of the permit as well as all other forms of administrative, judicial, and equitable relief available under law.
- 7.1.M** The Department may require the permittee to apply for and obtain a site-specific or alternative general permit if:
1. The permittee is not in compliance with the conditions of this general permit.
 2. The discharge no longer qualifies for this general permit due to changed site conditions and regulations.
 3. The permittee will be notified in writing of the need to apply for a site-specific permit or an alternative general permit. When a site-specific permit or alternative general permit is issued to the authorized permittee, the applicability of this general permit to the permittee will be terminated upon the effective date of the site-specific or alternative general permit, whichever the case may be.
- 7.1.N** Site-Specific Permit or Alternative General Permit. The permittee may apply for a site-specific permit or alternative general permit in lieu of coverage under this general permit. In such cases, the permittee shall submit an application for the alternate permit in accordance with the requirements of 10 CSR 20-6.200 with reasons supporting the request. The request may be granted by issuance of any site-specific permit or an alternative general permit.
- 7.1.O** Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
- 7.1.P** Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable amount of time, any information which the Department may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.
- 7.1.Q** Falsification Penalties. Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six months, or by both. Second and successive convictions for violations under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or both;
- 7.1.R** Reopener Clause. Nothing in this permit shall prevent the Department from re-opening, modifying, or revoking this permit as authorized by law.
- 7.1.S** Signatory Requirements.
1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2)(B) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.

2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in section 2.2.B of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative if:
- a) The authorization is made in writing by a person designated in Section 2 of this permit;
 - b) The authorization specifies an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of stormwater manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the permittee. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
 - c) The written authorization is submitted to the Director; and
 - d) If an authorization under section 2.2.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new, written authorization satisfying the requirements of this paragraph must be submitted to the Director prior to, or together, with any reports, information, or applications signed by an authorized representative.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
MO-R04C000
MASTER GENERAL PERMIT

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of Public Law 92-500 (as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Missouri Department of Natural Resources (Department) under an approved program, operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2., a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the permit. A Fact Sheet is not an enforceable part of an MSOP.

This Fact Sheet is for a Master General Permit.

Part I – Facility Information

Facility Type:	Industrial; Stormwater
Facility SIC Code(s):	#9511
Facility NAICS Code:	#924110
Facility Description:	Urban Stormwater Runoff. The permittee's MS4 collects and routes stormwater from industrial, commercial, roadways, and residential areas located within the permittee's municipal boundary and discharges the stormwater to waters of the state.

This Permit establishes Stormwater Management Program and Stormwater Management Plan (SWMP) requirements for all permit holders under this permit.

Clarification:

Coverage under this general permit may be issued to Public entities located inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality. Extension of such coverage shall be at the discretion of the Department.

Significant Changes to this permit include:

- ✓ Establishment of terms and conditions of the permit necessary to meet the MS4 permit standard in clear, specific and measurable terms per 40 CFR 122.34.
- ✓ Establishment of public notice, public comment and public hearing process necessary to meet the permit standard per 40 CFR 124.10.

DEFINITIONS

The definitions in this section shall apply to this permit only, and do not supersede or replace the definitions contained in Section 644.016, RSMo, 10 CSR 20-2.010, and 10 CSR 20-6.200(1)(D), which are all incorporated herein by reference. To aid understanding of some key terms, explanations of several statutory and regulatory definitions are provided. However, in the event of any inconsistencies, the statutory and regulatory definitions are controlling.

Adaptive management: A repetitive or cyclical process of decision making that requires monitoring activities to adjust behavior, decisions, and actions and to incorporate new knowledge and actual changes.

Adaptive management enables MS4 permittees to continually improve their stormwater control strategies and practices as they implement their programs and learn from experience to better control pollutant discharges. The process starts with the evaluation of a BMP with its designated measurable goal. If the BMP is found effective, then the MS4 Operator continues with this BMP until the next round of evaluation. If the BMP is found to be ineffective, then the MS4 Operator is required to conduct analysis to determine what can be altered or modified or if the BMP needs to be replaced.

Best Management Practices (BMPs): “Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.” 10 CSR 20-6.200(1)(D)1.

- BMPs can be temporary or permanent, and include structural items or non-structural practices or activities including schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants.
- BMPs encompass both the enforceable terms and conditions of this permit as well as particular activities and practices selected by the permittee that will be undertaken to meet the permit requirements but that are not themselves enforceable.

Clear, specific, and measurable terms: This permit is written to contain clear, specific, and measurable terms, using plain language to clearly establish permit requirements and the standards that will be used to assess compliance. “Such terms and conditions may include narrative, numeric, or other types of requirements (*e.g.*, implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions).” 40 C.F.R. § 122.34(a)

Common Plan of Development or Sale: An area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. This plan may consist of many small construction projects that collectively add up to one or more acres of total disturbed land. For example, an original common plan of development of a residential subdivision might identify the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for development. All these areas would remain part of the common plan of development or sale until the intended construction is completed.

Construction activities: Clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre. Construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) acre. *See* 10 CSR 20-6.200(1)(D)28.

Construction Site Operator: The entity or entities with operational control over construction plans and specifications including the ability to make modifications to those plans and specifications; or with day-to-day operational control of those activities at a project that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWPPP) for the site or other permit conditions. Typically this is the owner of the site or the general contractor of the project.

Control Measure: Any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the state.

Conveyance: Curbs, gutters, artificial channels, swales, ditches, drains, pipes, catch basins, paved or unpaved channels, storm drains, or other constructed or natural features designed or utilized for routing of stormwater.

Co-permittee: “A permittee to a state operating permit that is responsible only for permit conditions relating to the discharge for which it is owner or operator, or both.” 10 CSR 20-6.200(1)(D)4.

An operator of a regulated municipal separate storm sewer system (MS4) that applies jointly with one or more other applicants for coverage under a single municipal stormwater permit. Applicants within one urbanized area, or within a common watershed, or in an area served in common by one service provider may apply as co-applicants to share the administrative responsibilities of the application process and to become co-permittees under an issued permit.

A co-permittee must comply with the conditions of the permit relating to discharges from the MS4 the co-permittee owns or operates. Co-permittees will need to cooperate with each other to develop, implement, and report on their programs.

Discharge: “[T]he causing or permitting of one or more water contaminants to enter the waters of the state.” Section 644.016(6) RSMo

The water contaminant authorized to be discharged by this permit is urban stormwater runoff.

Illicit Discharge: “Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to a state operating permit, other than storm water discharge permits and discharges from fire fighting activities.” 10 CSR 20-6.200(1)(D)7.

Infill development: The building of homes, businesses and public facilities on unused and underutilized lands within existing urban areas. Infill development is the use of land in established neighborhoods for new development or redevelopment.

Iterative process: A documented process consisting of action items and analysis conducted by the MS4 Operator to ensure that BMPs are effective. This includes evaluating results and adjusting actions on the basis of what has been learned, as a part of adaptive management.

Maximum Extent Practicable (MEP): An adaptive management approach whereby the permittee will implement management measures, including structural and non-structural BMPs. MEP is a permittee-specific determination guided by factors such as: community financial capability and the need for reasonable rate or funding increases, weighing program-wide priorities compared to site-specific MS4 improvements, MS4 impacts to receiving waters, local priorities, watershed planning, integrated planning, MS4 size, climate, implementation schedules, hydrology, topography, geology, and the MS4's capacity to perform additional operation and maintenance.

Minimum Control Measure (MCM): The Phase II Rule defines a small MS4 stormwater management program as comprised of six areas of management, known as Minimum Control Measures. When administered properly and collectively, they are expected to result in reduction of the discharge of pollutants into receiving water bodies.

Modification: A revision to the MS4's Stormwater Management Program during the life of this permit. Modifications may include:

- a. Addition of new components, controls, or requirements to the Stormwater Management Program;
- b. Replacing or modifying ineffective or unfeasible BMPs in accordance with adaptive management and the permittee's iterative process;
- c. Modifying the iterative process or adaptive management procedures;
- d. Replacing or modifying time schedules that are not explicitly required by this permit;
- e. The addition or removal of jurisdictional areas;
- f. Contact names for the Stormwater Management Program; and
- g. Other changes as determined appropriate by the MS4 Operator.

MS4 Operator: "The owner, or an agent of the owner, of a separate storm sewer with responsibility for operating and maintaining the effectiveness of the system." 10 CSR 20-6.200(1)(D)17.

Municipal Separate Storm Sewer (MS4): "A municipal separate storm sewer system" 10 CSR 20-6.200(1)(D)11.

"Municipal separate storm sewer means a conveyance or system of conveyances including roads and highways with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, paved or unpaved channels, or storm drains designated and utilized for routing of storm water which—

- A. Does not include any waters of the state as defined in section 644.016, RSMo.
- B. Is owned and operated by the state, city, town, village, county, district, association, or other public body created by or pursuant to the laws of Missouri having jurisdiction over disposal of sewage, industrial waste, storm water, or other liquid wastes;
- C. Is not a part or portion of a combined sewer system;
- D. Is not a part of a publicly owned treatment works as defined in 40 CFR 122.2." 10 CSR 20-6.200(1)(D)16.

Non-Structural Controls: Pollution prevention practices that focus on management by limiting or eliminating pollutants before they mix with stormwater. Non-structural controls may include but are not limited to; site and land use planning, vegetated filters, stream buffers, low impact development (LID), open space preservation, and impervious cover restrictions.

Outfall: "A point source as defined by 10 CSR 20-2.010 at the point where a municipal separate storm sewer discharges and does not include open conveyances connecting two (2) municipal separate storm sewers, pipes, tunnels, or other conveyances which connect segments of waters of the state and are used to convey waters of the state." 10 CSR 20-6.200(1)(D)18.

Outfalls are the point of discharge from the MS4 to waters of the state. Outfalls include discharges from pipes, ditches, swales, and other points of concentrated flow. An outfall is not where a stream or waters of the state leave the municipal boundary.

Owner: "A person who owns and controls the use, operation, and maintenance of a separate storm sewer." 10 CSR 20-6.200(1)(D)20. "Person" is defined by Section 644.016(15) RSMo as "any individual, partnership, copartnership, firm, company, public or private corporation, association, joint stock company, trust, estate, political subdivision, or any agency, board, department, or bureau of the state or federal government, or any other legal entity whatever which is recognized by law as the subject of rights and duties."

Permittee: Refers to the MS4 Operator, or the entities identified as the owner and continuing authority of this general permit.

Stormwater: "[S]torm water runoff, snowmelt runoff and surface runoff, and drainage." 10 CSR 20-6.200(1)(D)31.

Stormwater Management Program: A comprehensive and documented program to manage the quality of stormwater discharges from the MS4.

Stormwater Management Plan (SWMP): The document explaining the MS4's Stormwater Program. It should be a comprehensive document that explains BMPs and the ongoing evaluation of the BMPs, as well as tracking, methods of documentation, and other

procedures for each requirement of this permit. The MS4 Operator must utilize the procedures and other supplemental documents contained with or referenced in the SWMP during the activities performed to attain permit compliance.

In this comprehensive general permit, the SWMP details the specific BMPs, time schedules, and other details for the individual MS4 and community, and does not need to be reviewed for approval by the Department during the application process.

Structural Controls: Pollution prevention practices that require the construction, or use of a device, to capture or prevent pollution in stormwater runoff. Structural controls may include but are not limited to: extended detention basins, bio-retention, infiltration basins, stormwater wetlands, bio-swales, vegetative lined ditches, subsurface drains, permeable pavement or concrete, sand filter basins, stormwater planters, proprietary BMPs, storage tanks, and hydrodynamic separators.

Urbanized Area (UA): An area of densely developed territory as defined and used by the U.S. Census Bureau, that may include multiple MS4s. The Census Bureau delineates urbanized areas after each decennial census.

Waters of the State: “[A]ll waters within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or two or more persons jointly or as tenants in common.” Section 644.016(27) RSMo.

The definition of Waters of the State takes precedence when applying state regulations.

Part II – Receiving Stream Information

Municipal Stormwater Outfalls:

Applications for MS4 operating permit (renewal or new) require the MS4 to provide information regarding the location of outfalls from the regulated MS4. The NPDES MS4 operating permit covers all discharges from the permittee's stormwater system into waters of the state.

Outfalls listed under the Facility Description in the operating permit only include representative stormwater outfalls. Representative outfalls are outfalls that discharge to the primary stem of principal watercourses in separate sub-regional watersheds and are representative of various land uses. Representative outfalls are listed in the permit as a subset of ALL of the MS4's outfalls. Listing all MS4 stormwater outfalls could add several extra pages to the permit and would require the operating permit to be modified if any outfall changes were made. However, the permittee is required by the operating permit to maintain a map as part of their Stormwater Management Program of all stormwater outfalls that discharge to waters of the state.

Applications for renewal or to receive (i.e., new permit) of the MS4 general permit require the permittee to provide the legal description, outfall number and receiving stream. In addition, the application for both co-permittees and individual MS4 permittees require a United States Geological Survey map showing the locations of the municipality/area in relation to the local road system and to indicate on the map the municipal/area boundary, receiving stream(s), and the map section, township, and range.

From this information, Department permit writers will establish a full description of these permitted features on the permit's certification page with the following:

Permitted Feature ID (e.g., Outfall #001)

Legal Description: ¼, ¼, Section, Township, Range, Direction

UTM Coordinates: X=000000.0, Y=0000000.0 (Easting, Northing respectively)

Receiving Stream: Name & Classification

First Classified Stream and ID: Name, Class, Waterbody ID – currently provided by the department

USGS Basin & Sub-watershed No.: (# – #) [12 digit USGS Hydrologic Unit Code (HUC)]

Applicable Designations of Waters of the State:

Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. This permit applies to facilities discharging to the following water body categories:

- ☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ☒ Lakes or Reservoirs [10 CSR 20-7.015(3)]
- ☒ Losing Streams [10 CSR 20-7.015(4)]
- ☒ Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
- ☒ Special Streams [10 CSR 20-7.015(6)]
- ☒ All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses shall be maintained in accordance with 10 CSR 20-7.031(4). A general permit does not take into consideration site-specific conditions.

The Permit Area may change based upon areas incorporated into or removed from the permittee's jurisdictional area during the term of this permit, or expansion of the Urbanized Area (UA). Areas added shall be covered under this permit and reflected in the Stormwater Management Program. For Permittees that are designated due to population density in a UA, which has areas that are not in the UA, the regulated MS4 is the portion which is inside of the UA.

The Department may require the regulated MS4 to submit an application for an alternate or additional general permit. Such as if the permittee is conducting regulated activities that are not covered under this permit but are addressed in a separate Master General Permit.

If the Department disapproves the application or SWMP and requires additional controls which add expenses, then the Department will conduct an affordability analysis in support of the disapproval for the application or SWMP. However, permittees may waive the requirement of the Department to conduct an affordability analysis at any time. If the permittee waives the affordability analysis, the Department shall assume all additional required controls are affordable.

Part III – Stormwater Management Program and Plan:

Stormwater Management Program

This permit, in accordance with 10 CSR 20-6.200 and 40 CFR Part 122, requires the permittee to develop and implement a Stormwater Management Program. The Stormwater Management Program shall address the six minimum control measures; public education and outreach, public involvement/participation process, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management and pollution prevention/good housekeeping for municipal operations. In addition, the Stormwater Management Program addresses TMDL implementation plan components, if applicable.

The Stormwater Management Program also includes, but is not limited to, specific BMPs, relevant local regulations, policies, procedures, interim milestones, measurable goals, measures of success, designation of responsible persons/positions for each of the measurable goals, and any applicable TMDL assumptions and requirements.

Stormwater Management Plan (SWMP)

The SWMP is a documented implementation plan describing a schedule of MS4 program activities including prohibitions of practices, implementation of required practices, development of standards for urban growth, maintenance procedures, education, trainings, inspections, and other management practices to prevent or reduce the pollution of waters of the state.

For this comprehensive permit, a SWMP is required, it does not need to be submitted to the Department as part of the application. The SWMP shall lay out standard procedures and details of the Stormwater Management Program. This document will help ensure consistency and continuity in the Stormwater Management Program.

SWMP Public Notice Procedure:

The MS4 Remand Rule became effective on January 9, 2017 and requires public participation in the permitting process. The comprehensive permit lays out the requirements of the Stormwater Management Program, using the specific SWMP may make an effective method of explaining the Stormwater Management Program.

Stormwater Management Program Ordinances:

To the extent allowable under state or local law, ordinances (or other regulatory mechanisms if a non-traditional MS4) are required to be developed, implemented and enforced within five years of initial permit issuance under the following sections, in accordance with 40 CFR 122.34(b):

Illicit discharge detection and elimination; to prohibit non-stormwater discharges into the storm sewer system, and implement appropriate enforcement procedures and actions;

Construction site stormwater runoff control; to require erosion and sediment controls at construction sites, as well as sanctions designed to ensure compliance; and

Post-construction; to address post-construction runoff from new development and redevelopment projects, and sanctions designed to ensure compliance. The "Missouri Guide to Green Infrastructure: Integrating Water Quality into Municipal Stormwater Management" (May 2012) was written specifically to aid MS4s in developing and implementing the post-construction runoff program. The guide can be viewed at <https://dnr.mo.gov/document-search/missouri-guide-green-infrastructure-pub2446>. The EPA and the Department and certain MS4s have developed compliant model ordinances that may be adapted for use by other interested MS4s.

Stormwater Management Program Reporting Frequency:

The previous version of this operating permit required biennial reporting of the Stormwater Management Program for existing regulated MS4s; however, annual reporting will now be required for existing regulated MS4 permittees in accordance with 40 CFR 122.34(d)(3).

The annual reporting ensures the annual review of the MCMs and overall stormwater management program is being conducted as required in this permit. The annual requirement also ensures there is no further confusion regarding which year the biennial report was due. The annual submittal of the Stormwater Management Program Report is also consistent with the MS4 Operators who are subject to TMDLs that must submit annual water quality schedules.

The reports shall be reported electronically by the owner, operator, or the duly authorized representative of the MS4 to the Department via the eDMR system. This annual Stormwater Management Program Report can be used by the Department and the public to evaluate the quality and compliance of a MS4's program. A MS4 Operator may consider including additional information with the annual report to show the quality and comprehensiveness of the MS4 program. The report can be used to showcase an outstanding program.

Date	Item	Report submitted to Department
January 1, 2022	Updates to Stormwater Management Plan complete	No (unless requested by Department staff)
February 28, 2022	Annual Stormwater Management Program Report	yes
February 28, 2023	Annual Stormwater Management Program Report	yes
February 28, 2024	Annual Stormwater Management Program Report	yes
February 28, 2025	Annual Stormwater Management Program Report	yes
February 28, 2026	Annual Stormwater Management Program Report	yes

Part IV - Rationale and Derivation of Effluent Limitations & Permit Conditions**Professional Best Judgement:**

The permit writer used professional best judgement as a high quality technical opinion developed by a permit writer after considerations of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a NPDES permit.

Previous versions of the MS4 Master General Permit followed federal regulations for the BMPs applicable to Phase II MS4s via the Minimum Control Measures (MCMs) under 40 CFR 122.34(b). BMPs are Technology-based Effluent Limits (TBELs), which then subjects the BMPs to case- by-case determinations using professional best judgement.

The Remand Rule was a non-substantive rule, requiring the permitting authority (the Department) to ensure permit requirements include narrative, numeric, or other types of requirements. Permit requirements that simply copy the language of the federal Phase II regulations without providing further detail on the level of effort required or that do not include the minimum actions that must be carried out during the permit term do not provide clear, specific, and measurable requirements. The permit writer used professional best judgement in deciding the clear, specific and measurable requirements for this permit.

Comprehensive Category Grouping

MS4 designation is based primarily off of population size. Because there is such diversity, even in Phase II MS4s the permit writer wanted to offer differing levels to help in areas where the population of the regulated MS4 impacts the BMPs the most. These groups are used to offer assistance to the smallest MS4s while ensuring the more populated MS4s are targeting the appropriate amount of target audiences and pollutants.

The designated groups only vary in MCM 1 BMPs in areas where target audiences and target pollutants are concerned. In researching audit reports and compliance assistance visits throughout the state certain challenges were seen facing the MS4s with the smallest populations. One noticeable challenge was the lack of variety in target audiences, this was similar to non-traditional MS4 that also have a limited population.

The number of MCM 1 BMPs were the lowest for these in Group A to reflect the lower amount of possible target audiences, the lower population to participate in events, and even the ability of their population to participate in events or behaviors targeted. Class 2 counties were also included in the Group A to reflect the smaller population size those counties. The MS4s in this group may not have industries in their boundaries. There are often no schools, or religious organizations.

The Group B MS4s have a larger population, which will reflect in the number of potential target audiences. The population size was increased from 10,000 to reflect the designation of population of 10,000 for a municipality outside urbanized areas. The MS4s in this group are also joined by Class 1 counties, which have larger populations. These Group B MS4 will have more sub-groups in their population to target. MS4s of this size will have industries, educational institutions, and other potential target audiences.

The Group C MS4s are the largest of the Phase II MS4s. The Census Bureau identifies an Urbanized Area (UA) as an area meeting the minimum population density requirement, with a population of over 50,000. Missouri has three large UAs; Kansas City, St. Louis, and Springfield. Additionally, as of the 2010 census, there are four other UAs in Missouri. Each of those individual municipalities has a high enough population to have the name designation of an UA. So while the area in that population density must meet 50,000 population as a whole, the main municipality will carry the majority of that population. The population of 40,000 was established as the bottom level for Group C to capture the larger municipalities in these UAs. MS4s of this size will have a variety of industries, educational institutions, and residents to draw from. They will also have a variety of potential pollutants or sources of pollution to target.

Integrated Planning

As noted in the June 5, 2012 EPA memorandum, “*Integrated Municipal Stormwater and Wastewater Planning Approach Framework*” EPA has increasingly embraced integrated planning approaches to municipal wastewater and stormwater management. EPA further committed to work with states and communities to implement and utilize these approaches in its October 27, 2011 memorandum “*Achieving Water Quality through Municipal Stormwater and Wastewater Plans*.”

Integrated planning assist MS4 communities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to prioritize capital investments. Integrated planning can also facilitate the use of sustainable and comprehensive solutions, including green infrastructure, that protect human health, improve water quality, manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.

For more information regarding integrated planning please review both of the memorandums cited above or contact the Department’s MS4 Team.

Maximum Extent Practicable (MEP)

Prior to 1987, municipal stormwater was subject to the same controls as other point sources like industrial and domestic discharges, which was section 301(b) of the CWA. However, in 1987, “Congress retained the existing, stricter controls for industrial stormwater discharges but prescribed new controls for municipal stormwater discharges,” *NRDC v. EPA*, 966 F.2d 1292, 9th Cir. 1992 (*NRDC v. EPA*). This “new control” was established in section 402(p)(3)(B)(iii) of the CWA, which states, “*Permits for discharges from municipal storm sewers – shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, designs and engineering methods, and such other provisions as the Administrator or State determines appropriate for the controls of such pollutants.*”

The argument for “new controls” contained in the case of *NRDC v. EPA* was subsequently supported in the case of *Defenders of Wildlife v. Browner*, in which it was concluded that section 402(p)(3)(B) of the CWA “replaces” the requirements of 301(b) of the CWA with the MEP standard for MS4 discharges, and that it creates a “lesser standard” than section 301(b) of the CWA establishes on other types of discharges. Thus, MEP is a technology-based standard established by Congress in Section 402(p)(3)(B)(iii) of the CWA. As established in the *1999 National Pollution Discharge Elimination System Regulations for Revisions of Water Pollution Control Program Addressing Storm Water Discharges* (64 FR No. 235), MEP is, “...the statutory standard that establishes the level of pollutant reduction that operators of regulated MS4s must achieve,” (i.e., not water quality standards).

In addition to indicating that MEP is the statutory requirement, the EPA also clearly stated that MEP is applicable to the six (6) minimum controls measures in 64 FR No. 235, which states, “*The first component, reduction to the MEP, would be realized through implementation of the six minimum measures.*” The description of MEP continues in 64 FR No. 235, with “*EPA envisions application of the MEP standard as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards.*” The iterative process, mentioned is also defined in 64 FR No. 235 with the following, “...implement an iterative process of using BMPs, assessment, and refocused BMPs, leading toward the attainment of water quality standards.”

Ninth Circuit court ruling in *EDC v. EPA* (2003) found that the Phase II rule requirements for small MS4 General Permits violated the CWA. The court ruling found a lack of permitting authority review and lack of public participation in permit process. The MS4 Remand Rule was promulgated December 9, 2016 and became effective on January 9, 2017 as a result of this ruling. The Remand Rule requires more stringent public notice requirements and authorization requirements, including SWMP review, approval, and incorporation for two-step general permits. There is not review, approval or incorporation for this Comprehensive permit.

The Remand Rule ensures permit requirements include narrative, numeric, or other types of requirements such as:

- Implementation of specific tasks or best management practices (BMPs)
- BMP design requirements, performance requirements
- Adaptive management requirements
- Schedules for implementation and maintenance
- Frequency of actions.

All requirements in this permit must be expressed in clear, specific, and measurable terms. This applies to any part of the permit addressing the six MCMs, TMDLs, and Stormwater Management Program Reports. MCMs were not intended to serve as stand-alone permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions that meet the MS4 permit standard. Verbatim adoption of the MCMs from the Federal regulations will not satisfy this requirement.

Measurable Goals

Measurable goals are designed objectives or goals that quantify the progress of program implementation and performance of BMPs. They are objective markers or milestones that the permittee uses to track the progress and effectiveness of BMPs in reducing pollutants to the MEP. At a minimum, measurable goal should contain descriptions of actions that will be taken to implement each BMP, what is anticipated to be achieved by each goal, and the frequency and dates for such actions to be taken. BMPs and measurable goals are the mechanisms used to establish a clear and specific baseline against which future progress at reducing pollutants to the MEP can be measured.

There are a number of different ways the permittee can establish measurable goals. Examples of potential measurable goals include the following:

- **Tracking implementation over time** - Where a BMP is continually implemented over the permit term, a measurable goal can be developed to track how often, or where, this BMP is implemented.
- **Measuring progress in implementing the BMP** - Some BMPs are developed over time; a measurable goal can be used to track this progress until the BMP implementation is completed.
- **Tracking total numbers of BMPs implemented** - Measurable goals can be used to track BMP implementation numerically (e.g., the number of wet detention basins in place or the number of people changing their behavior due to the receipt of educational materials).
- **Tracking program/BMP effectiveness** - Measurable goals can be developed to evaluate BMP effectiveness, for example, by evaluating a structural BMP's effectiveness at reducing pollutant loading, or evaluating a public education campaign's effectiveness at reaching and informing the target audience to determine whether it reduces pollutants to the MEP. A measurable goal can also be a BMP design objective or performance standard.
- **Tracking environmental improvement** - The ultimate goal of the NPDES stormwater program is environmental improvement, which can be a measurable goal. Achievement of environmental improvement can be assessed and documented by ascertaining whether state water quality standards are being attained, or by tracking trends or improvements in water quality (chemical, physical, and biological) and other indicators, such as the hydraulics or habitat condition of the waterbody or watershed.

Because of changes due to the MS4 Remand Rule, measurable goals are specifically laid out in this permit. The MS4 Remand Rule emphasizes that permit requirements must be expressed in “clear, specific, and measurable” terms, which may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions). These rule modifications do not alter the existing, substantive requirements of the six minimum control measures in 40 CFR 122.34(b).

Examples of measurable goals in this MOR04C (this is not a complete chart of all measurable goals in this permit):

MCM	Requirement	Group A	Group B	Group C	Co-permittee adjustment	Newly designated differences	Reference
1	Target audiences	Residents	Residents; plus 1 throughout permit cycle	Residents; plus 2 throughout permit cycle			Table I 4.1.A
1	Target pollutants	1 per audience	1 per audience	1 per audience			Table II 4.1.B
1	BMPs (outreach material or action)	2 per permit cycle	4 per permit cycle	5 per permit cycle			Table III 4.1.C
1	Participation	1 per permit cycle	2 per permit cycle	3 per permit cycle	1 in boundary of each co-		Table IV 4.1.D

					permittee		
2	Public Notice	30 days	30 days	30 days			4.2.A
2	Public Meeting	30 day advertised	30 day advertised	30 day advertised			4.2.C
2	Update governing board	1 time annually	1 time annually	1 time annually			4.2.F
3	Outfall map	All outfalls, receiving water, boundary or MS4	All outfalls, receiving water, boundary or MS4	All outfalls, receiving water, boundary or MS4		Complete by end of first 5 years	4.3.A
3	Dry weather outfall screening	60% per permit cycle	60% per permit cycle	60% per permit cycle		Locate & screen all in first 5 years	4.3.D
3	Identify priority areas	Identify and evaluate annually	Identify and evaluate annually	Identify and evaluate annually	Each shall identify areas		4.3.H
4	Pre Construction plan reviews	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.B
4	Inspection program	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.C
4	Construction site operator inspection requirements	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.E
5	Water Quality post-construction BMP standards	Standards for structural controls and non-structural controls	Standards for structural controls and non-structural controls	Standards for structural controls and non-structural controls			4.5.B
5	Pre Construction plan reviews	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.5.C
5	Long term operations and maintenance agreements	All new post-construction water quality BMPs	All new post-construction water quality BMPs	All new post-construction water quality BMPs			4.5.D
5	Water Quality post-construction BMP inspection	60% per permit cycle	60% per permit cycle	60% per permit cycle			4.5.E
6	Training	1 time annually	1 time annually	1 time annually			4.6.A - 4.6.C
6	List of MS4 owned/operated NPDES facilities	Continuous, update annually	Continuous, update annually	Continuous, update annually			4.6.D
6	On site pollutant controls	Continuous, update annually	Continuous, update annually	Continuous, update annually			4.6.F
6	Washing (vehicles and equipment) procedures	Continuous	Continuous, update annually	Continuous, update annually			4.6.H

Modifications

Minor modifications to BMPs or implementation may be allowed under this Comprehensive General Permit, if the changes do not alter the permit requirements.

As an example, the MS4 permit requires tracking for construction sites including plan reviews, inspections, and enforcement actions. The MS4 Operator used a central excel sheet, but now has the ability to purchase software that will store checklists for each step. This is considered an alteration in a BMP and is not a major modification as the permit requirement is still in effect.

Minimum Control Measures (MCMs)

The NPDES Permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Terms and conditions that satisfy the requirements of this section must be expressed in clear, specific, and measurable terms. Such terms and conditions may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions) per 40 CFR 122.34(a).

In general, the Phase II MCMs as described in the federal regulation are not intended to serve as permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions. Relying on the literal adoption of the MCMs from the federal regulations will not meet the requirement to establish clear, specific, and measurable permit requirements under the MS4 remand rule.

MCM 1 Public Education and Outreach on Stormwater Impacts

Terms and conditions related to this MCM are in accordance with 40 CFR 122.34(b)(1).

Public education and outreach is vital, as an informed and knowledgeable community is central to the success of a stormwater management program. Everyone has a part to play in both contributing to stormwater runoff and protecting water quality.

The MS4 Operator has the flexibility to choose which target audiences make sense for their MS4. The MS4 Operator can choose the audience, the medium, and the specific message. By educating the residents, the MS4 can help ensure greater support for stormwater management measures, and the public gains a greater understanding of the reasons why stormwater management programs are necessary and important. Public support is extremely beneficial for MS4 operators to institute new funding initiatives for the stormwater program or in seeking support or volunteers to help implement the program.

Education to schools or youth will reach the next generation of residents, and they can bring their lessons home. Businesses of all types have potential to impact urban stormwater. Retail, restaurants, manufacturing, even home based businesses bring their own potential issues. Plastic bags, litter, grease disposal, open garbage containers, and improper disposal methods should be evaluated and be seen as educational opportunities. Formal organizations such as Rotary Clubs, Lions, Churches, sports teams, or college organizations, can support the messages and provide audiences ready to listen, learn, and even help. In MS4s where development is happening, or being encouraged, educating developers is a great way to get in front of issues, and improve compliance with MCM #4.

The MS4 can target the education provided to specific groups. In educating Homeowner Associations (HOAs), for example, pollutants specific to them, such as fertilizer usage, car washing practices, stream buffers, and proper disposal of organic and household hazardous waste can be reviewed and specific BMPs and guidance provided to the HOAs to manage these pollutant sources. This audience can also be informed on maintenance of post-construction water quality facilities or ways they as homeowners can improve the quality of stormwater runoff. Another specific group that may be addressed is industrial facilities. Industrial facilities will bring potential new issues with the products or the production processes. Looking at each facility, and offering education based on the stormwater concerns, can reduce the pollutants in the runoff and diminish larger issues in the future.

Some MS4s may have a valid reason to include another target audience to their education program. If an area has a high level of tourist this may be a good target. If the area is retrofitting basins, the neighboring homeowners may be a target audience. It is part of the Missouri Nutrient Loss Reduction Strategy to enhance public involvement and education of nutrients in urban stormwater runoff. Residents can learn practical ways to decrease nutrients into the stormwater. Educating people on ways they can make an impact on a bigger picture can cause small changes which will add up. Focusing on trash is a way to show MS4 audiences the problem with a very visible media. By seeing how litter travels in the stormwater, it is easier to understand how smaller pollutants, such as oils, heavy metals, nutrients, or bacteria travel through the stormwater.

Tracking is important to ensure the target audiences are getting the information about the targeted pollutants. Many MS4 programs will see cycles of when education for certain topics is needed more than other topics. Learning through tracking and adaptive management will help the MS4 get effective education to the audiences.

Encouraging multiple stakeholder groups to become involved in the Stormwater Management Program will help foster a greater understanding of urban stormwater runoff and the potential impacts that can come from daily life in an urban setting. Because impacts are made in stormwater at businesses, and at home, it is vital to reach as many different groups as possible. Making the topic of stormwater management a relatable issue will help to get the message across, and give the recipients more reason to make changes.

When people participate in an activity, the underlying message becomes more tangible, and their personal impact has a stronger tie to the message. There are many ways to get people involved, and these ways will ideally reach different groups. Communities may already have philanthropic organizations willing to assist the permittee with activities. The Missouri Stream Team program is available state wide and engages in most of the activities listed in Part 4.2 of this permit. Learn more at mostreamteam.org or contact StreamTeam@mdc.mo.gov.

The MS4 Operator shall offer support of their own in conjunction with or to organizations helping with participation activities. There are a variety ways to offer support to groups who plan or organize events. By engaging with the groups or individuals creating these participation opportunities, the MS4 Operator can find ways to help in a manner which fits them, and really impacts the activities positively.

Co-permittees may gain a lot by sharing resources for much of the Stormwater Management Program. However, a part of the participation element is having the connection between behavior and action. It is important to have events located in the area of each MS4 in a co-permit to gain ownership and accountability in the local stormwater management program. A visible activity in a physical or geographic area will impact those in that same area, which is a large part of what makes this MCM work.

In working to establish a specific minimum of BMPs, the permit writer used professional best judgment. In looking at a calendar year, there are three seasons which are conducive to outdoor activities. Likewise the calendar could be seen as quarters, or as a traditional

school year plus summer break. Tracking is important to ensure the target audiences are getting the information about the target pollutants. Many MS4 programs will see cycles when education is more needed for certain topics, such as seasonal changes, or a re-education on a topic after a few years to remind the audience. Learning through tracking and adaptive management will help the MS4 get effective education to the audiences.

Recording elements such as the number of participants, the amount of litter collected, trees planted, or audience attending will help the MS4 Operator understand if the activity was useful or not. Attendance sheets, receipts, Stream Team Activity Reports, or a spreadsheet can be used to keep track of events and results. Sometimes events may be less attended than anticipated, but the MS4 Operator should consider that even a small impact is still an impact. When using adaptive management properly, adjustments can be made and the activity can be repeated.

MCM 2 Public Participation

This MCM is required in accordance with 40 CFR 122.34(b)(2).

The Stormwater Management Program shall use the same procedure as the Master General Permit because the Management Program is the part that is specific to the MS4 it was created for. Following the public notice processes laid out in Part 4.2 of this permit will give the public the opportunity to comment on or learn about the Stormwater Management Program.

The MS4 Operator does not need to create a stormwater management panel or committee. Having such a panel or committee will give the MS4 Operator a more immediate way of getting public representation involved and getting feedback from the public. A board with a diverse membership can enhance a stormwater management program by getting multiple viewpoints. Involving so much feedback and input will help gain backing from the residents and this understanding of the program will garner support when needed.

Giving updates on the Stormwater Management Program to the governing body or board can help the decision makers understand the reasons behind the processes and the benefit a healthy stormwater management can have on the economic value to their area. This update can be an opportunity to show successes in the program, and may be done in conjunction with preparing the Stormwater Management Program Report. These updates may be given as an in person presentation, as a written document, or via another method that will get the message effectively to the board.

MCM 3 Illicit Discharge Detection and Elimination (IDDE)

This MCM is required in accordance with 40 CFR 122.34(b)(3).

An outfall is any point where a separate storm sewer system discharges to waters of the state, which is owned or operated by the permittee. Outfalls include discharges from stormwater conveyances such as pipes, ditches, swales, gutters, and other points of concentrated flow.

An outfall does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the state and are used to convey waters of the state (such as culverts). If waters of the state flow through a channelized area, this remains waters of the state, not an open conveyance.

Outfalls are not where streams leave the municipal boundaries of an MS4. Outfalls are not limited by size, as illicit discharge can travel through any size outfalls, even those that are small. While larger outfalls may collect more drainage from a larger area, small outfalls were also constructed to convey stormwater and are equally likely to have illicit discharges. Overland flows, or areas of non-concentrated or sheet flow, are not considered to be outfalls. Therefore they are not required to be mapped. Where a conveyance ends and discharges to a BMP, such as a vegetated area, and there is no conveyance to waters of the state, the conveyance end is not an outfall if the discharge does not reach waters of the state.

Mapping all MS4 outfalls is vital to a functioning illicit discharge program. Outfalls mapping gives the MS4 Operator a starting point to trace back to the source. Knowing the locations of outfalls and receiving waters are necessary to be able to conduct dry weather field screening for non-stormwater flows and to respond to illicit discharge reports from the public. Outfalls must be mapped no matter their size.

Mapping the storm sewer system which leads to those outfalls will further assist in illicit discharge tracing. Once an illicit discharge is detected at an outfall, it will be necessary to trace the discharge through that portion of the storm sewer system leading to the outfall in order to locate the source.

Because privately owned storm sewers and conveyances were authorized by a municipality or the county to become connected with the municipal system, the municipality or county with the MS4 permit does have responsibility for that stormwater. Facilities owned by homeowners associations, for example, are subject to local codes, ordinances, and enforcement. The municipalities are responsible, therefore, for discharges of wastes from private stormwater conveyance systems. Therefore enforcement actions shall take place if an illicit discharge is detected from a private outfall. So while the outfalls from such private stormwater conveyances and outfall are not required for mapping, it is recommended to do so in order to assist with illicit discharge investigations and enforcement.

Ongoing dry weather field screening for non-stormwater flows is a strong tool for detecting illicit discharges. This process will outfall locations by walking, wading or even using a boat in the streams or along the streambanks and shorelines. Evidence of past non-stormwater flows, trash, improper yard waste disposal, along with the structural integrity of the storm sewer system can be found.

The field screenings are important in relation to priority areas. The field screening may identify new priority areas (problem areas) or the MS4 Operator may conduct more frequent screenings in the priority areas. When considering where priority areas are, look at land use on the watershed. Priority areas may be industrial areas, areas with a concentration of food establishments with grease disposal, or parts of the city with older infrastructure which may have cross contamination from aged domestic sewers, or an area of retail where litter may be an issue. The MS4 Operator should consider all types of pollutants when determining priority areas.

Investigating pollutants may involve sampling for the following parameters: specific conductivity, chloride, ammonia, nitrates, potassium, surfactant and/or fluorescence concentration, pH, *E. coli* and other chemicals indicative of suspected sources. Useful observations of any physical characteristics of the discharge include: flow rate, temperature, odor, color, turbidity, floatable matter, deposits, stains, and impacts to vegetation or wildlife.

The MS4 Operator does not need to have the sample analyzation equipment, they must at minimum maintain a contract lab relationship so the samples can be taken and analyzed. For guidance on illicit discharge investigations, and parameters to sample for see: https://www.epa.gov/sites/production/files/2015-11/documents/sw_idde_pittbacklit.pdf Or [https://stormwater.pca.state.mn.us/images/b/b2/Final IDDE Field Guide HRPDC.pdf](https://stormwater.pca.state.mn.us/images/b/b2/Final_IDDE_Field_Guide_HRPDC.pdf)

The program must include procedures for tracing the source of an illicit discharge. Once an illicit discharge is detected and field tests have provided source characteristics, the next step is to determine the location of the pollutant source. The map of the storm sewer system is a valuable tool, and is most often the first step in this plan. Techniques for tracing the discharge to its place of origin may include: following the flow up the storm drainage system via observations and/or chemical testing in manholes or in open channels, televising storm sewers, using infrared and thermal photography, conducting smoke or dye tests.

Education efforts in resolving the problem should occur before taking legal action; however, the MS4 needs to have the ability to enforce the IDDE plan. The procedures for removing the source of the illicit discharge will vary depending on the source of the discharge. The plan may include notifying the property owner and specifying a time for the owner to eliminate the discharge. Additional notifications and escalating legal actions, if needed, should also be described in this part of the plan. The MS4 Operators should consider creating an enforcement response plan, including the ability to collect cleanup and abatement costs from the responsible party. The MS4 Operator should also maintain contacts for environmental cleanup and environmental emergency response.

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <https://dnr.mo.gov/waste-recycling/investigations-cleanups/environmental-emergency-response>.

Each MS4 will need to determine their own priority areas. However, if an area receives three complaints or reports of separate events within a six month range, the MS4 must prioritize this area until the source is determined.

The MS4 Operator must have procedures for responding to reports of illicit discharges. Actions taken under the illicit discharge program should be documented. The MS4 Operator must use tracking to show progress is being made to eliminate illicit connections and discharges.

Illicit discharges may originate in one MS4 jurisdiction and cross into another MS4 jurisdiction before being discharged at an outfall. The MS4 that detects the illicit flow is expected to trace it to the point where it leaves their jurisdiction and notify the adjoining MS4 of the flow, and any other physical or chemical information. The adjoining MS4 shall then trace it to the source or to the location where it enters their jurisdiction. The process of notifying the adjoining MS4 should continue until the source is located and eliminated.

MCM 4 Construction Site Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(4).

Polluted stormwater runoff from construction sites often flows to MS4 storm sewers and is ultimately discharged into local waterbodies. Of the pollutants that have the potential to be discharged, sediment is usually the main pollutant of concern. According to the 2000 National Water Quality Inventory, States and Tribes report sediment as one of the most widespread pollutants affecting assessed rivers and streams, second only to pathogens (bacteria). Sources of sediment include agriculture, urban runoff, construction

and forestry. However, sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands and 1,000 to 2,000 times greater than those from forest lands.

During a short time period, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation and contribution of other pollutants from construction sites can cause physical, chemical, and biological harm to Missouri's waters.

The MS4 Operator must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre. There must be control through ordinances and/or other regulatory mechanism, such as a permit for land disturbance or grading activity.

Site Plan Review ensures the implementation of appropriate BMPs on construction sites to control erosion and sediment along with litter and other wastes at the site. To determine if a construction site is in compliance with such provisions, the MS4 operator can review the site plans submitted by the construction site before ground is broken. Plan reviews can aid in compliance and enforcement efforts since they alert the MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities. Reviewing non-structural BMPs first shall help make sure a more appropriate order of operation is being maintained. This may prevent actions such as removing trees only to install a permanent structural BMP which has the same effect as the removed trees. The structural BMPs may also reduce the quantity of runoff, which will have an influence on any permanent structural BMP.

Land disturbance activities, such as clearing and grading the land surface, increases the potential for sediment discharges. Clearing reduces the natural uptake of water and nutrients by vegetation and excessive grading can smooth the ground surface, increasing amount and velocity of runoff. Vegetation inhibits erosion as the roots hold the topsoil in place, while leaves protect the surface against rain. Once the vegetative cover is gone, erosion is accelerated. The longer the exposed area is subject to erosive forces, the more severe the effect.

The goal for this land disturbance program, should be to expose the smallest practical area of land, for the shortest possible time, to eroding forces. Phased construction minimizes the amount of land exposed at one time.

When the site becomes active, BMPs must be in place and the permittee inspection and enforcement activities must begin. To ensure that the BMPs are properly installed, the permittee is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Procedures include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, the characteristics of soil and the receiving water body's quality. Inspections give MS4s an opportunity to provide additional guidance and education, issue warnings, or assess penalties.

Each site shall self-inspect to ensure their compliance with the regulations of both the MS4 and the State of Missouri Clean Water Law. An MS4 may require the site operator submit their self-inspection reports to the MS4 Operator as a form of oversight, tracking of compliance, or issues with the site. For consistency the requirements mirror the requirements of the current Missouri State Land Disturbance permit.

To fully ensure compliance the MS4 Operator must conduct oversight inspections as well. The MS4 Operator may choose to contract out these inspections to qualified inspectors, or consultants. If choosing this option, the MS4 Operator must make it clear to the site operators that the inspections are being conducted on behalf of the MS4. The oversight inspections must be conducted at a frequency which ensures compliance, but not so often that the site operator can use the MS4 oversight inspections as their own inspections. Too frequent oversight inspections may cause the inspector to become complacent or too familiar with the site or the personnel. Inspections can be used as educational opportunities from the inspector to the site operator.

Plan reviews before construction begins will help to identify priority site based off of site characteristics. Past inspections and the tracking of compliance issues may also assist in this identification if there have been issues with particular construction site operators or neighbors in the area of a site. Final inspections performed after the completion of the land disturbance project, ensure the site is properly stabilized, clean of solid waste and temporary BMPs. Terminating the Missouri Land Disturbance permit will reduce the number of NPDES permits open in that MS4 service area. Documenting inspections, such as with a checklist, will be evidence that the inspections are being conducting, ensure thoroughness and uniformity for the inspector. These documents be used to show the site operators that the inspectors are being consistent between sites.

MS4 staff must have enforcement tools available if they observe noncompliance with the MS4 regulatory mechanisms. The tools available may be notices of violation, stop work orders, or withholding of funds. These tools and mechanisms, and how to use them, should be described in the SWMP. The SWMP should also list who can use the enforcement tools, enforcement follow-up actions, such as follow-up inspections; how and when enforcement is escalated if the violation isn't corrected, and documentation requirements.

Having an inventory of all sites with relevant contact information and project information ensures the MS4 Operator is aware of projects in their area. The tracking of sites is useful not only for the MS4 Operator's recordkeeping and reporting purposes, but also for members of the public interested in ensuring that sites are in compliance.

MCM 4 also includes a requirement to allow the public to report concerns they have regarding construction sites and water quality impacts. An educated public is more aware of sediment runoff as a pollutant, therefore this may be reflected in the amount of reports of water quality impacts and improper site management increasing. Conversely, as education for the developer increases, the amount of reports on these things may decrease. It should also be noted that while erosion and sediment regulations are typically focused on sediment, MCM 4 is not limited to just sediment. MS4 Operators must enforce construction sites for other types of waste, such as litter or concrete washout.

Many MS4s use existing code or building inspectors to also look at the sediment and erosion aspects of a site. These inspectors must have training, and must understand why the sediment and erosion inspections are of value. The permit writer understands that not all MS4s are able to afford extra training for inspectors, however there are free resources available. Because of the great impact, even one mismanaged construction site can cause a stream to be damaged. The effort and time to establish these training resources to create a training program are necessary to have competent inspectors.

Educating the individual site operators will add more awareness for how to manage sediment and erosion on a site, and why this is important. More information on the Missouri land disturbance permit is found at: <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance>.

MCM 5 Post-Construction Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(5).

If water quality impacts are considered from the beginning stages of a project, new development and redevelopment provide more opportunities for water quality protection. Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Many studies indicate that prior planning and design for minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

The Phase II rule applies to redevelopment projects that alter the footprint of an existing site or building in such a way that there is a disturbance of equal to or greater than one acre of land. This program requires ordinances, or policies, that address stormwater runoff quality. Post-construction stormwater management can be utilized in ways that preserve and protect in a non-structural way, and in structural items that are used to mitigate the decreased water quality in the stormwater runoff. Because structural and non-structural practices work together, a minimum of one ordinance is required for structural controls and one ordinance for non-structural controls.

Structural controls have traditionally been concrete or "gray" infrastructure created to quickly move the stormwater away from the place it falls. These have caused increased erosion and water quality degradation to the receiving streams. Current standards include water quality as a factor in design, and many standards are actually based on natural systems and rely upon vegetation and soil mechanisms in order to perform as intended. The choice of which structural BMPs are most appropriate comes not as a post-construction fix, but rather as a result of the site design review, which should also look at the stormwater management of the site comprehensively.

Numeric, or technical, performance standards are broken into two types for stormwater discharges, a treatment standard or a volume-based/retention standard. Treatment standards typically specify an amount of pollutant to be managed, for example 80% TSS removal. Volume-based or retention standards typically require the use of infiltration, evapotranspiration or harvest practices to control a specified volume of stormwater onsite and are usually expressed as a volume of rainfall, a percentile storm event or a groundwater recharge volume.

Non-structural controls focus on preserving open space, protecting natural systems, and incorporating existing landscape features such as wetlands and stream corridors into a site plan to manage stormwater at its source. There is also emphasis on clustering and concentrating development, minimizing disturbed areas, and reducing the size of impervious areas.

Both structural and non-structural controls consider comprehensive stormwater management items such as:

- Stormwater should be managed as a resource
- Natural features and systems should be preserved and utilized
- Stormwater should be managed as close to the source as possible
- The hydrologic balance of surface and ground water should be maintained
- Runoff should be slowed down
- Potential water quality and quantity problems should be prevented
- Problems that cannot be avoided should be minimized
- Stormwater management should be integrated into the initial site design process.

The Department has created the Missouri Guide to Green Infrastructure, Integrating Water Quality into Municipal Stormwater Management for guidance; <https://dnr.mo.gov/document-search/missouri-guide-green-infrastructure-pub2446>.

Other guidance and model ordinances may be found at the following:

<https://www.epa.gov/nps/urban-runoff-model-ordinances-post-construction-controls>

<https://www.epa.gov/nps/urban-runoff-model-ordinances-aquatic-buffers>

<https://www.epa.gov/nps/urban-runoff-model-ordinances-open-space-development>

https://www3.epa.gov/npdes/pubs/sw_ms4_compendium.pdf

https://www.epa.gov/sites/production/files/2015-09/documents/urban_ch05.pdf

<https://www.epa.gov/green-infrastructure>

<https://www.cwp.org/reducing-stormwater-runoff/>

The MS4 Operator must ensure adequate long-term operation and maintenance of post-construction BMPs. This is accomplished through agreements between the MS4 Operator and land owners or regional authorities. Tying a structural control to the land deed may be adequate for some MS4s. If the agreement is recorded with local land records, any successive owner of the property would take the responsibilities of the operations and maintenance of that structural control in the agreement.

Both structural controls and non-structural controls, must be tracked and inspected. An inspection program must be established to ensure the stormwater controls are working and being properly maintained.

Non-structural controls must also be reevaluated. If an urban growth area was identified, it must be evaluated to ensure is room for more development, or if a new growth area should be found. If open spaces or sensitive areas are protected by ordinances or similar mechanism, these places should be inspected to ensure there is no encroachment of development or by neighboring properties. If impervious areas were minimized, these places should be inspected to ensure no additional impervious areas were added.

Educating MS4 on post-constructions BMPs will ensure the inspections are effective. There are free resources available online such as: <https://www.youtube.com/watch?v=SM9sI9wQgz0&feature=youtu.be>

As the public becomes more educated on post-construction stormwater runoff BMPs and controls, they may have more concerns to report. Through education however, there may be ways an MS4 can also gain participation to assist with maintenance issues, and to also further education on water quality and stormwater management.

MCM 6 Pollution Prevention/Good Housekeeping

This MCM is required in accordance with 40 CFR 122.34(b)(6).

The MS4 Operator's actions, and facilities are the example for the residents of that MS4. Leading by example can be an important component of education.

Training shall be given to any staff that have influence on stormwater for the MS4, not just environmental coordinators. By only focusing the training on a few members, the message will not get out. Each MS4 should take a realistic look at each department, division, and individual. If their work may either negatively impact or positively impact stormwater runoff, they must attend the training.

Training may be broken down into topics and dispersed throughout the year. It may be given in conjunction with other training. There are free resources available online such as;

https://stormwater.pca.state.mn.us/index.php?title=Employee_training

<https://www.youtube.com/watch?v=UxOam2GEVgQ>

<https://www.youtube.com/watch?v=I6ubsys6AZY>

While emergency firefighting activities are an authorized non-stormwater discharge, other activities related to a fire department, such as washing of trucks, run-off water from training activities, test water from fire suppression systems, and hydrant pressure testing, are not.

Live and simulated fire training should be conducted at facilities that have been built and engineered specifically for training exercises. These facilities should have run-off controls or BMPs to prevent discharging this water or foam used in training exercises. Any water used during training activities is considered wastewater and will require a separate permit (or de minimis determination) from the Department for discharge or land application. Water that is collected and conveyed to a wastewater treatment facility is not required to obtain a separate permit.

If firefighter training cannot be conducted at a specially designed facility, additional pollution prevention actions will need to be taken before training begins in order to prevent illicit discharges. Additional actions may include; sweeping prior to and after training; blocking off all potentially affected stormwater structures; directing to a sanitary sewer line; if spraying water over a landscape, arch the water so that velocities are dissipated and there is less chance of soil erosion; use dechlorination blankets and/or dechlorination diffusers after/prior to spraying, dispose of ashes and partially burnt debris in dumpsters.

Maintaining an Operations and Maintenance document, or SWPPP for each municipal site will ensure proper management, and behavior at those sites. This document should also include inspections for these sites as a method of checking up on the individual site programs. Inspections, cleaning, and routine maintenance of stormwater structures is necessary to ensure the structures are functioning properly and stormwater is managed properly.

Road salt and other deicers are a safety item for most residents of Missouri. However the chloride concentrations in streams is increasing which can potentially harm aquatic life and may impair drinking water.

So while there is a need for road salt, there are changes that can be made to use less salt and still clear the roads for the safety of the public. This is seen in product management. Loading, unloading and cleanup practices in the loading and parking areas can greatly reduce the amount of salt loss to precipitation and subsequent stormwater. A winter maintenance program which tracks the rock salt use and finds ways to manage the product to reduce loss on the municipal yard is the goal of any BMPs designed and implemented for rock salt. In addition, educating private entities to reduce their usage of salt by incorporating salt reduction practices into their procedures is vital.

In contrast with road salt, brine spreads more evenly, stays where it falls, and begins working immediately. This is because the salt is already in solution. As a result, spraying liquid brine is more effective while using less salt. Beet juice has been suggested as an alternative, however, in practice, the sugar in the runoff has been shown to cause nutrient loading of waterways to increase.

For training or additional resources including application rates please see;

<https://www.wisaltwise.com/Tools/Application-Guidelines-Calculator>
<https://www.iwla.org/conservation/water/winter-salt-watch/road-salt-best-practices>

Yard waste includes any organic debris such as grass clippings, leaves, and tree branches. Research by the U.S. Geological Survey show municipal leaf collection programs have the ability to reduce loads of total and dissolved phosphorus in a given drainage area by 84 and 83%, respectively, and total and dissolved nitrogen by 74 and 71%. This research indicates that nearly 60% of the annual phosphorus yield in urban and suburban environments comes from leaf litter in the fall, making it a huge contributor of nutrients to urban receiving waters.

Removing leaf litter from roads and drain systems means; cleaner streets, safety, and a reduced likelihood of clogged storm drain inlets. Educating residents to not put leaves in, or on storm inlets and/or providing alternate means of disposal can help reduce the amount of effort needed to clean storm drain inlets.

For more information please see;

<https://www.sciencedirect.com/science/article/pii/S0048969716314462>
<https://slco.org/watershed/stream-friendly-practices/dont-dump-debris/>

There is also free training on overall stormwater management for MS4 Operators;

<https://www.torranceca.gov/home/showdocument?id=18591>
<https://njmel.org/mel-safety-institute/webinars/>
https://www.youtube.com/watch?v=Z09Yz_qS1f4
<https://www.youtube.com/watch?v=ACP7DOdOEDE>

Part V – Rationale for General Terms and Conditions:**Clean Water Act section 402(l)**

On December 7, 2012, the U.S. EPA promulgated a rule (77FR 72970) clarifying that discharges of stormwater from silviculture activities do not require a NPDES permit. On March 20, 2013, the U.S. Supreme Court ruled that discharges of stormwater that run off from logging roads into ditches, culverts, and channels did not require a NPDES permit as stormwater from industrial activity.

In January 2014, Congress amended Clean Water Act 402(l) to prohibit the requirements of NPDES permits for the discharge of runoff “resulting from the conduct of the following silviculture activities conducted in accordance with standard industry practice: nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage or road construction and maintenance.” In 2016, the U.S. EPA published its decision to not regulate forest road discharges under Phase II stormwater non-permitting programs.

Additional Federal Acts

In accordance with 40 CFR 122.49(b) and (c) the operating permit cites the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA) and places the permittee on notice that the operating permit does not affect, remove or replace the requirements or compliance determination for NPDES operating permits. It is the responsibility of the permittee to determine if activities conducted within their MS4 or stormwater discharging from their MS4 are in compliance with the ESA and NHPA.

Assistance in determining applicability to ESA conditions and requirements can be found on the U.S. Fish and Wildlife Service (FWS) Endangered Species webpage, which is located at: <http://www.fws.gov/endangered/>. Additionally, the FWS Information for Planning and Conservation (IPaC) web-based project planning tool that streamlines the environmental review process is highly recommended and is located at: <http://ecos.fws.gov/ipac/>.

Assistance in determining applicability to NHPA conditions and requirements can be found on the Department’s State Historic Preservation Office Section 106 Review, which is located at: <https://mostateparks.com/page/84371/state-historic-preservation-office>. Additionally, the Advisory Council on Historic Preservation Citizen Guide to Section 106 Review, which explains the process, is located at: <http://www.achp.gov/citizensguide.html>.

In addition to the ESA and NHPA, this operating permit does not affect, replace or remove the requirements and compliance determinations with respect to substances not otherwise covered under a NPDES permit and regulated by federal law under the Resource Conservation and Recovery Act or the Comprehensive Environmental Response, Compensation, and Liability Act.

Anti-Backsliding

Anti-backsliding is a provision in federal regulations CWA §303(d)(4); CWA §402(o); 40 CFR 122.44(l) that requires a reissued permit to be as stringent as the previous permit with some exceptions. The permit complies with Anti-backsliding regulations.

Anti-Degradation

Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

The Department has determined that the best avenue forward for implementing the Anti-degradation requirements into the MS4 general permit is by requiring the appropriate development and maintenance of a Stormwater Management Program.

Application requirements

Small MS4s (as defined under 10 CSR 20-6.200) are to apply and obtain a small MS4 General Permit or site-specific permit in accordance with 40 CFR 122.33 and 10 CSR 20-6.200(5).

Compliance and Enforcement

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri CWL, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Dischargers of stormwater from regulated MS4s, as defined in the Missouri Stormwater Regulations 10 CSR 20-6.200 who do not obtain coverage under this or other Missouri general permits, or under a site-specific NPDES permit, will be in violation of the Missouri CWL and its implementing regulations and subject to civil penalties of up to \$10,000 per violation, per day. For entities covered under a NPDES permit, failure to comply with any NPDES permit requirement also constitutes a violation of the Missouri CWL and its implementing regulations.

Oil/Water Separators:

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

This permit authorizes the operation of OWS for the treatment of stormwater without the requirement to obtain a separate permit. If the OWS treats water other than precipitation which has run across the property (for example: wash water, effluent from shop drains, drips, spills, etc.) the facility must obtain an MOG14 or site specific permit to cover the discharges.

Pesticide Rule

The Department has developed a Pesticide General Permit #MOG-870000 for point source discharges resulting from the application of pesticides. This permit has been developed as a result of federal requirements under NPDES.

The general permit authorizes the discharge of pesticides that leave a residue in water when such applications are made into, over or near waters of the United States. The department has determined that entities most likely affected by this permit include public health entities, including mosquito or other vector control districts and commercial applicators that service this sector. Others potentially affected by this permit include resource and land management entities, such as public and private entities managing public land; park areas and university campuses; as utilities maintaining easements and right-of-ways; golf courses; and other large residential developments which maintain a large grounds area. In addition, permits may be required for applications involving pesticide use for agricultural related activities when pesticides are applied to crops grown in or near a water of the United States.

The Department is collaborating closely with the Missouri Department of Agriculture, which already administers the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) along with the Missouri Pesticide Use Act, to ensure proper oversight of pesticide applications.

MS4s under this permit are subject to the pesticide rule. To determine if a permit is required, please visit the Department's website. The thresholds listed in Table 1 of the pesticide general permit will assist in determining if a permit is required. If a permit is required, the permittee/facility shall apply for either the Pesticide General Permit or a site-specific pesticide permit from the Department.

Secondary Containment

Prior to release of stormwater in secondary containments, the presence of petroleum sheen and odor must be observed. Steps must be taken if petroleum sheen or odor are observed to remove the petroleum from the stormwater prior to release. All secondary containment valves must remain closed when not actively draining stormwater. Release of stormwater from secondary containment must be controlled so as not to cause physical impacts such as forming rills, transporting solids, or scouring vegetation. If the stormwater is contaminated, the MS4 operator has the option of pumping out the secondary containment and taking it to an accepting wastewater treatment facility for treatment. Causing a sheen to be released to the environment is a violation of this permit and general water quality standards at 10 CSR 20-7.031(4)(B).

Standard Conditions:

The standard conditions Part I are incorporated into this permit, and incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statutes, federal regulations, and the Clean Water Act.

Water Quality Standards

As noted previously, the nature of the MS4 program is technology-based, which is in accordance with Section §402(p)(3)(B)(iii) of the CWA with the establishment of the technology-based standard MEP. Many in the MS4 community believe that MEP is the only standard applicable for compliance determination, which for the most part (specifically for the six (6) minimum control measures, is correct). Given the litigious nature surrounding the "agreeability" of MS4 compliance with WQS, MS4 permits have been the subject of court cases for several years.

40 CFR 122.34(a)(1) clearly requires that the MS4 permit will require the MS4 permittee to, "...develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act." While this regulation seems to be in contradiction to Section §402(p)(3)(B)(iii) of the CWA due to the fact that it appears to require the permittee to "...protect water quality" and "satisfy the appropriate water quality requirements..." it actually is not; however, has been mistakenly applied to require strict, immediate compliance with WQS even in previously issued Missouri MS4 Master General Permits.

As noted in 64 FR No. 235, “The Court, did, however, disagree with the EPA’s interpretation of the relationship between CWA sections 301 and 402(p). The Court reasoned that MS4s are not compelled by section 301(b)(1)(C) to meet all State water quality standards, but rather the Administrator or the State may rely on section 402(p)(3)(B)(iii) to require such controls.” The discussion continues with, “...the 1996 Policy describes how permits would implement an iterative process using BMPs, assessment, and refocused BMPs leading toward attainment of water quality standards. The ultimate goal of the iteration would be for water bodies to support their designated uses...” and “EPA also believes the iterative approach toward attainment of water quality standards represents a reasonable interpretation of CWA section 402(p)(3)(B)(iii).”

A break-down of 40 CFR 122.34(a) is given in 64 FR No. 235, as follows, “The first component, reduction to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency’s specific determination under the CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward the attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would other point sources.”

Part VI - 303(D) List, Total Maximum Daily Load (TMDL)

Section 303(d) of the CWA requires that each state identify waters that are not meeting water quality standards. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) List helps state and federal agencies keep track of waters that are impaired but not addressed by typical water pollution control programs. Federal regulations require permitting authorities to develop TMDLs to address impaired waters listed per Section 303(d) of the CWA. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is impaired. Please visit the Department’s website to determine if you are listed in an approved or established TMDL at: <https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/tmdl>.

Federal regulation 40 CFR 122.34(a) establishes the requirements applicable to all MS4s with, “Your NPDES MS4 permit will require at a minimum that you develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.” EPA translated this regulation into three parts in 64 FR No. 235, as follows, “The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency’s specific determination under CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would to other point sources.”

The above citation of 64 FR No. 235 clearly states that MEP is specific to the six (6) MCMs and clearly establishes that Wasteload Allocations (WLAs) are applicable to MS4s. However, unlike other traditional point sources that utilize treatment facilities, the EPA clearly indicated that attainment of the WLA is to be conducted via “the iterative BMP process.” Thus, requiring any condition for the attainment of water quality standards in addition to the MCMs is going beyond MEP but the process for attainment of the WLA is still achieved with BMPs using the iterative process of establishing BMPs, evaluating the BMPs, and refocusing on BMPs.

However, just because a WLA for any given pollutant(s) of concern (POC) has been established in a TMDL for a MS4, additional BMPs or modifications to BMPs for the six MCMs should not be required as a trigger action. Rather, the MS4 permittee subject to an effective and approved TMDL should first make a determination if the implementation of their MCMs is adequately meeting the requirements and assumptions of the TMDL. As noted in 64 FR No. 235, “At this time, EPA determines that water quality-based controls, implemented through the iterative process today are appropriate for the control of such pollutants and will result in reasonable further progress towards the attainment of water quality standards.” While potentially rare this does indicate that no further action may be necessary to implement the requirements and assumptions of the TMDL as the MS4 community may, through successful implementation to the MEP for each of the MCMs, have already demonstrated “reasonable further progress.” This, rightfully so, places the burden of support on the MS4 community; however, in order for the MS4 community to continue operating only under the six MCMs, the determination of beneficial use re-attainment must be reviewed and timely approved by applicable program staff (i.e., the MS4 Team and Watershed Protection Section staff).

If the requirements and assumptions of the TMDL are not being met, then the MS4 will need to, at a minimum, develop BMPs that target the given POC with the goal or design for the reduction of the pollutant. Due to the nature of stormwater controls via the iterative process, subsequent determinations can and should be made by the MS4 community to determine if “reasonable further progress” has resulted in the attainment of the WLA.

In addition to the initial determination or additional BMPs as required in the MS4 general permit, integrated planning actions are considered as actions taken to specifically restore a waterbody's beneficial uses. Regardless, if the MS4 permittee uses integrated planning or BMPs design to reduce pollutants, other factors need to be considered in accordance with 64 FR No. 235, which states, *"If the permitting authority (rather than the regulated small MS4 operator) needs to impose additional or more specific measures to protect water quality, then that action will most likely be the result of an assessment based on a TMDL or equivalent analysis that determines sources and allocations of pollutant(s) of concern. EPA believes that the small MS4's additional requirements, if any, should be guided by its equitable share based on a variety of considerations, such as cost effectiveness, proportionate contribution of pollutants, and ability to reasonably achieve Wasteload reductions. Narrative effluent limitations in the form of BMPs may still be the best means of achieving those reductions."*

In addition to the above, the TMDL portion of the permit (Part 3) requires the development and implementation of a TMDL Assumption and Requirement Attainment Plan (ARAP). While the TMDL ARAP is not a Schedule of Compliance actions and schedules established in the TMDL ARAP will be subjected to the federal regulations on Schedules of Compliance [40 CFR 122.47]. Specifically if the development and implementation of the TMDL ARAP is to be conducted in a period of time extending one calendar year, then the permittee will be required to report annually for either the status of the development of the plan or for the implementation of the plan based on 40 CFR 122.47(a)(3)(ii).

Regarding the time period allowed for development of the TMDL ARAP (i.e., as soon as practicable not exceeding 30 months), the Department has determined the 30 month time period is appropriate as it allows the permittee the necessary time and flexibility that is needed to ultimately achieve attainment with the TMDLs assumptions and requirements. The Department has experience in the facilitation of an adaptive SWMP, along with EPA Region 7, with a MS4 community that addressed the assumption and requirements of an applicable TMDL. The time period to develop the adaptive SWMP took more than 30 months, but the assumptions and requirements of the TMDL were more complex than other straight forward TMDLs. Thus, the 30 month maximum time period allows the permittee to determine or develop appropriate BMPs, measurable goals, funding sources, local votes, strategic planning, opportunity to engage interested parties and stakeholders, etc... However, it would be naïve to believe that all regulated MS4s could develop a plan in 30 months, which is why the permit also indicates that the permittee can request an extension to the 30 months.

Permittees seeking approval of the extension will need to provide appropriate justification of why the extension is needed, a revised time schedule of compliance, and reason for failing to meet the 30 month maximum time; however, the allowance of extending the time period beyond 30 months is not guaranteed.

Stakeholder Outreach

In an effort to improve overall effectiveness of the MS4 MOR04 permit renewal process, introduction to the MOR04C permit, and to maximize stakeholder input, the Department published a preliminary draft of this MS4 NPDES permit and conducted extensive outreach for stakeholders in the preparation of the draft MS4 NPDES permits. A listing of stakeholder meetings is as follows:

Meeting Location	Meeting Date	Total attendees	Number of regulated MS4s represented
Jefferson City, MO	March 2, 2020	5	2
Macon, MO	March 3, 2020	7	5
Springfield, MO	March 5, 2020	17	11
Lee's Summit, MO	March 9, 2020	28	18
Poplar Bluff, MO	March 13, 2020	12	8
Web	March 23, 2020	13	10

Additionally, the Department held virtual meetings with municipal permittees in an effort to explain and gather feedback about proposed permit conditions. These meetings were broken down by MCM. Notification of such workshops was provided via e-mail invitation to all provided MS4 contacts in Missouri's permitted municipalities. A listing of each workshop follows:

Meeting topic	Meeting Date	Total attendees	Number of regulated MS4s represented
MCM 1	April 6, 2020	37	23
MCM 3	April 7, 2020	30	21
MCM 6	April 9, 2020	37	23
MCM 5	April 13, 2020	42	29
MCM 4	April 14, 2020	35	24
MCM 2	April 14, 2020	28	17
Other parts of the draft permits	April 20, 2020	40	27

Part VII – Administrative Requirements

On the basis of preliminary staff review and applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the permit. The proposed determinations are tentative pending public comment.

Public Meeting:

A public meeting for this permit was held on July 30, 2020.

Public Notice:

The Department shall give public notice when a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest or because of water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this permit was from September 4, 2020 through October 5, 2020

Date of Fact Sheet: August 17, 2020

SARAH WRIGHT, ENVIRONMENTAL SPECIALIST
MUNICIPAL SEPARATE STORMSEWER SYSTEM (MS4) PERMITTING COORDINATOR
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - STORMWATER AND CERTIFICATION UNIT
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Attachment B

Chapter 34 of the City of Moberly's Code of Ordinances

DRAFT

Chapter 34 - STORMWATER MANAGEMENT AND CONTROL

ARTICLE I. - IN GENERAL

Sec. 34-1. - Purpose and policy.

- (a) This chapter sets forth uniform requirements related to stormwater activity for the city and enables the city to comply with applicable state and federal laws. The objectives of this chapter are:
- (1) To prevent erosion and sediment from land disturbance activities from creating a nuisance and entering neighboring properties and waters of the state;
 - (2) To prevent the introduction of pollutants into the publically owned treatment works (POTW) that will interfere with the operation of the POTW or which will pass through the POTW into receiving waters;
 - (3) To encourage the use of best management practices (BMPs) during construction and post construction activities;
 - (4) To improve the water quality in receiving streams;
 - (5) To provide for fees and penalties for land disturbance and stormwater permits; and
 - (6) To enable the city to comply with its municipal separate storm sewer system (MS4) permit.
- (b) This chapter shall apply to all development, construction, and excavation activity within the city. This chapter authorizes the issuance of land disturbance permits, authorizes monitoring, compliance and enforcement activities; establishes administrative review procedures, requires land disturbance inspection and reporting; and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

(Code 1987, § 28-185; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-2. - Administration.

Except as otherwise provided herein, the director of public utilities shall administer, implement, and enforce the provisions of this chapter. Any powers granted to or duties imposed upon the director may be delegated by the director to other city personnel.

(Code 1987, § 28-186; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-3. - Abbreviations and acronyms.

The following abbreviations and acronyms shall have the designated meanings:

- (1) BMP: Best management practice.
- (2) EPA: Federal Environmental Protection Agency.
- (3) MDNR: State department of natural resources.
- (4) MS4: Municipal separate storm sewer system.
- (5) NPDES: National pollutant discharge elimination system.
- (4) POTW: Publicly owned treatment works.
- (5) SWPPP: Stormwater pollution prevention plan.

(Code 1987, § 28-187; Ord. No. 8799, § 1, 1-22-2013)

Secs. 34-4—34-29. - Reserved.

ARTICLE II. - ILLICIT DISCHARGES

Sec. 34-30. - Purpose and objectives.

The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the city through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the MS4 to comply with requirements of the NPDES permit process. The objectives of this article are:

- (1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user.
- (2) To prohibit illicit connections and discharges to the municipal separate storm sewer system.
- (3) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article.

(Code 1987, §§ 28-172, 28-188; Ord. No. 8216, § 1(I), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-31. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Authorized enforcement agency means employees or designees of the city designated to enforce this article.

Best management practices (BMPs) means schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act means the federal Water Pollution Control Act (33 USC 1251 et seq.) and any subsequent amendments thereto.

Construction activity means activities subject to NPDES construction permits. Currently, these include construction projects resulting in land disturbance of one acre or more. Such activities include, but are not limited to, clearing and grubbing, grading, excavating, and demolition.

Hazardous materials means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal discharge means any direct or indirect non-stormwater discharge to the storm drain system, except as exempted in this article.

Illicit connections means either of the following:

- (1) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system, including, but not limited to, any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water to

enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether the drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency; or

- (2) Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial activity means activities subject to NPDES industrial permits as defined in 40 CFR 122.26 (b)(14).

National pollutant discharge elimination system (NPDES) stormwater discharge permit means a permit issued by EPA (or by a state under authority delegated pursuant to 33 USC 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-stormwater discharge means any discharge to the storm drain system that is not composed entirely of stormwater.

Person means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

Pollutant means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Premises means any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Storm drainage system means publicly owned facilities by which stormwater is collected or conveyed, including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Stormwater means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater pollution prevention Plan (SWPPP) means a document which describes the best management practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to stormwater, stormwater conveyance systems, or receiving waters to the maximum extent practicable.

Wastewater means any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

(Code 1987, §§ 28-173, 28-189; Ord. No. 8216, § 1(II), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-32. - Applicability.

This article shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

(Code 1987, §§ 28-174, 28-190; Ord. No. 8216, § 1(III), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-33. - Responsibility for administration.

The city shall administer, implement, and enforce the provisions of this article. Any powers granted or duties imposed upon the authorized enforcement agency may be delegated in writing by the director of public utilities to persons or entities acting in the beneficial interest of or in the employ of the agency.

(Code 1987, §§ 28-175, 28-191; Ord. No. 8216, § 1(IV), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-34. - Ultimate responsibility.

The standards set forth herein and promulgated pursuant to this article are minimum standards; therefore, this article does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

(Code 1987, §§ 28-177, 28-193; Ord. No. 8216, § 1(VI), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-35. - Discharge prohibitions.

- (a) *Prohibition of illegal discharges.* No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including, but not limited to, pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater. The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:
 - (1) The following discharges are exempt from discharge prohibitions established by this article: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated, typically less than one ppm chlorine), firefighting activities, and any other water source not containing pollutants.
 - (2) Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.
 - (3) Dye testing is an allowable discharge, but requires a verbal notification to the authorized enforcement agency prior to the time of the test.
- (b) *When prohibition does not apply.* The prohibition shall not apply to any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.
- (c) *Prohibition of illicit connections.*
 - (1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.
 - (2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

- (3) A person is considered to be in violation of this article if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

(Code 1987, §§ 28-178, 28-194; Ord. No. 8216, § 1(VII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-36. - Suspension of MS4 access.

- (a) *Suspension due to illicit discharges in emergency situations.* The city may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the authorized enforcement agency may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of the United States, or to minimize danger to persons.
- (b) *Suspension due to the detection of illicit discharge.* Any person discharging to the MS4 in violation of this article may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The authorized enforcement agency will notify a violator of the proposed termination of its MS4 access. The violator may petition the authorized enforcement agency for a reconsideration and hearing.
- (c) *MS4 access reinstated to premises without approval.* A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this section, without the prior approval of the authorized enforcement agency.

(Code 1987, §§ 28-179, 28-195; Ord. No. 8216, § 1(VIII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-37. - Industrial or construction activity discharges.

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with the permit may be required in a form acceptable to the director of public utilities prior to the allowing of discharges to the MS4.

(Code 1987, §§ 28-180, 28-196; Ord. No. 8216, § 1(IX), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-38. - Monitoring of discharges.

- (a) *Applicability.* This section applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity.
- (b) *Access to facilities.*
 - (1) The utilities director or his designee shall be permitted to enter and inspect facilities subject to regulation under this article as often as may be necessary to determine compliance with this article. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.
 - (2) Facility operators shall allow the city ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.

- (3) The city shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the authorized enforcement agency to conduct monitoring or sampling of the facility's stormwater discharge.
- (4) The city has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
- (5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected or sampled shall be promptly removed by the operator at the written or oral request of the director of public utilities and shall not be replaced. The costs of clearing such access shall be borne by the operator.
- (6) Unreasonable delays in allowing the city access to a permitted facility is a violation of a stormwater discharge permit and of this article. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for conducting any activity authorized or required by this article.
- (7) If the city has been refused access to any part of the premises from which stormwater is discharged, and he is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the authorized enforcement agency may seek issuance of a search warrant from any court of competent jurisdiction.

(Code 1987, §§ 28-180.1, 28-196.1; Ord. No. 8216, § 1(X), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-39. - Prevention, control, and reduction of stormwater pollutants.

- (a) The city will adopt requirements identifying best management practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, surface waters or groundwaters.
- (b) The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premises which is, or may be, the source of an illicit discharge may be required to implement, at the person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system.
- (c) Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section.
- (d) BMPs shall be part of a SWPPP as necessary for compliance with requirements of the NPDES permit.

(Code 1987, §§ 28-180.2, 28-196.2; Ord. No. 8216, § 1(XI), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-40. - Watercourse protection.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

(Code 1987, §§ 28-180.3, 28-196.3; Ord. No. 8216, § 1(XII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-41. - Notification of spills.

- (a) Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the storm drain system, or waters of the nation, the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release.
- (b) In the event of a release of hazardous materials, the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, the person shall notify the authorized enforcement agency in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the director of public utilities within three business days of the phone notice.
- (c) If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

(Code 1987, §§ 28-180.4, 28-196.4; Ord. No. 8216, § 1(XIII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-42. - Enforcement.

- (a) Upon violation of a prohibition or failure to meet a requirement of this article, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require, without limitation:
 - (1) The performance of monitoring, analyses, and reporting;
 - (2) The elimination of illicit connections or discharges;
 - (3) That violating discharges, practices, or operations shall cease and desist;
 - (4) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
 - (5) Payment of a fine to cover administrative and remediation costs; and
 - (6) The implementation of source control or treatment BMPs.
- (b) If abatement of a violation or restoration of affected property are required, the notice shall set forth a deadline within which such remediation or restoration must be completed. The notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

(Code 1987, §§ 28-180.5, 28-197; Ord. No. 8216, § 1(XIV), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-43. - Appeal of notice of violation.

Any person receiving a notice of violation may appeal the determination of the director of public utilities. The notice of appeal must be received within 15 days from the date of the notice of violation. Hearing on the appeal before the city manager or his designee shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the city or their designee shall be final.

(Code 1987, §§ 28-180.6, 28-198; Ord. No. 8216, § 1(XV), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-44. - Enforcement measures after appeal.

If the violation has not been corrected pursuant to the requirements set forth in the notice of violation or, in the event of an appeal, within 30 days of the decision of the municipal authority upholding the decision of the authorized enforcement agency, then representatives of the authorized enforcement agency shall enter upon the subject private property and are authorized to take the measures necessary to abate the violation or restore the property. It is unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

(Code 1987, §§ 28-180.7, 28-199; Ord. No. 8216, § 1(XVI), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-45. - Cost of abatement of the violation.

Within 15 days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within 15 days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of percent per annum shall be assessed on the balance beginning on the first day following discovery of the violation.

(Code 1987, §§ 28-180.8, 28-200; Ord. No. 8216, § 1(XVII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-46. - Injunction relief.

It is unlawful for any person to violate any provision or fail to comply with any of the requirements of this article. If a person has violated or continues to violate the provisions of this article, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

(Code 1987, §§ 28-180.9, 28-201; Ord. No. 8216, § 1(XVIII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-47. - Alternative compensatory actions authorized.

In lieu of enforcement proceedings, penalties, and remedies authorized by this article, the city may impose upon a violator alternative compensatory actions such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

(Code 1987, §§ 28-180.10, 28-202; Ord. No. 8216, § 1(XIX), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-48. - Violations deemed a public nuisance.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

(Code 1987, §§ 28-180.11, 28-203; Ord. No. 8216, § 1(XX), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-49. - Criminal prosecution.

Any person that has violated or continues to violate this article shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of \$1,000.00 per violation per day or imprisonment for a period of time not to exceed 30 days. The authorized enforcement agency may recover all attorneys' fees, court costs and other expenses associated with enforcement of this article, including sampling and monitoring expenses.

(Code 1987, §§ 28-180.12, 28-204; Ord. No. 8216, § 1(XXI), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-50. - Remedies not exclusive.

The remedies listed in this article are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

(Code 1987, §§ 28-180.13, 28-205; Ord. No. 8216, § 1(XXII), 5-22-2008; Ord. No. 8799, § 1, 1-22-2013)

Secs. 34-51—34-76. - Reserved.

ARTICLE III. - LAND DISTURBANCE

Sec. 34-77. - Purpose and objectives.

The purpose of this article is to establish controls on activities related to land disturbance through the following objectives:

- (1) To protect the quality of local streams, lakes, and other bodies of water from the effects of increased erosion and sediment discharge.

- (2) To protect the welfare of individuals and their property by reducing the amount of sediment that leaves land disturbance sites.
- (3) To protect the environment and aquatic habitat of fish and other species.
- (4) To reduce the need for maintenance of storm sewers and ditches as well as the dredging of lakes and ponds.

(Code 1987, § 28-207; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-78. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

City public utilities means the department that has the authority to manage, enforce, and regulate land disturbance activities within the city.

Drainageway means a natural or artificial watercourse, including, but not limited to, streams, rivers, creeks, ditches, channels, canals, waterways, gullies, ravines, or washes in which water flows in a definite direction or course, either continuously or intermittently, including any area adjacent to it that is subject to inundation by reason of overflow or floodwater and meets any of the following conditions:

- (1) Provides for conveyance of stormwater runoff from an upstream property or development.
- (2) Defined as waters of the United States by the U.S. Army Corps of Engineers.
- (3) Supports riparian area or sensitive habitat.
- (4) Tributary area equal to or greater than 20 acres.
- (5) Alternation or filling will change the manner in which runoff is discharged onto a downstream property and potentially results in a negative impact to that downstream property.

Erosion control means any method, including the use of best management practices, which reduces the potential for soil particles to become dislodged and carried by wind or water.

Land disturbance includes the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity that bares soil or rock or involves the diversion or piping of any natural or manmade watercourse.

Land disturbance field manual gives requirements and guidance relating to land disturbance, similar to the land disturbance manual, but only addresses field requirements and guidance relating to land disturbance. It is intended to be used by the person performing the land disturbance and not the engineer that develops the plans.

Land disturbance manager means the person responsible for ensuring that the site is in accordance with the standard land disturbance permit as well as performing site inspections and maintaining the required records.

Land disturbance manual gives requirements and guidance relating to land disturbance

Land disturbance permit means the permit obtained from the city public utilities department prior to commencement of land disturbance activities as defined in the most current land disturbance manual.

Sediment control means any method, including the use of best management practices, used to capture or contain sediment particles after they have been eroded.

Stop work order means a written notice posted at the site of the land disturbance by the city's land disturbance inspector that requires land disturbance activities cease until requirements of the stop work order are met and signed stop work order release form is obtained. The stop work order is enforceable as provided in this Code.

(Code 1987, § 28-208; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-79. - Permits; design and construction requirements.

- (a) The city shall administer and enforce this article with the issuance of land disturbance permits. Requirements and guidance for the land disturbance permit are contained within the most current edition of the land disturbance manual with a supplemental land disturbance field manual.
- (b) Before conducting land disturbance activities that are equal to or greater than one acre, or are part of a larger common plan of development or sale that will disturb one or more acres over the life of the project within the city limits, a land disturbance permit must be obtained.
- (c) Before conducting land disturbance activities when installing utilities with 1,000 feet or more of length within the city limits, a land disturbance permit must be obtained.
- (d) Before conducting land disturbance activities located within 100 feet or more of a drainage way within the city limits, a land disturbance permit must be obtained.
- (e) Before conducting fill or excavation of 50 or more cubic yards of material, not related to building of a detached single-family residential unit within the city limits, a land disturbance permit must be obtained.
- (f) Land disturbance activities less than one acre in size in the city may require erosion and sediment control measures and a land disturbance permit if city public utilities deems it necessary to prevent sediment and erosion from occurring.
- (g) The land disturbance manual with supplemental land disturbance field manual may be updated and expanded from time to time at the discretion of the city based on improvements in engineering, science, monitoring, or local maintenance experience.
- (h) In addition to the requirements set forth by the city, all other local, state, and federal permits, ordinances, laws, and regulations relating to land disturbance must be followed. Any construction or land disturbance activity that will result in the disturbance of one acre or more must obtain a land disturbance permit from the state department of natural resources.

(Code 1987, § 28-209; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-80. - Fees.

Fees are shown in the appendix of the most current version of the city's land disturbance manual.

(Code 1987, § 28-210; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-81. - Inspections.

All land disturbance activities shall be subject to inspection by the city. Representatives of the city shall have the right to enter upon any land for making an inspection or acquiring information to determine whether the property conforms to the requirements of this article.

(Code 1987, § 28-211; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-82. - Enforcement.

The city public utilities department shall have the authority and responsibility to manage, enforce, and regulate land disturbance activities within the city.

(Code 1987, § 28-212; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-83. - Violations and penalties.

- (a) All persons are required to obtain a land disturbance permit before performing any activities that are stated in section 34-79. If land disturbance activities are performed without a permit, but require a permit, or a level I violation occurs on a permitted site, the city public utilities department will place a posted stop work order at the location of the land disturbance activity. This stop work order revokes or suspends the land disturbance permit for permitted sites and stops work on permitted and non-permitted sites. The order shall state what is required prior to continuing the land disturbance activity and the time frame in which these actions must occur.
 - (1) In the case that the permit is revoked, reapplication for a permit is required and for suspensions the permittee must obtain a signed stop work order release from the city public utilities department prior to commencing land disturbance activities.
 - (2) If the stop work order is removed by anyone other than the city, or the land disturbance act continues without following the requirements of the stop work order, then the person performing the work and the owner of the property are in violation of the land disturbance code.
 - (3) If the land disturbance activities stop after the stop work order is posted at the site but actions required by the order are not followed within the time frame stated on the order, then the owner of the property is in violation of the land disturbance code.
 - (4) If the property owner chooses stop work and does not obtain or renew a permit, the property owner will still be required to reestablish the original topography and vegetation of the site prior to the land disturbance activities in a form amenable to the stormwater coordinator within the timeframe stated on the stop work order. If the property owner does not reestablish the site to standard and time stated in the order, the property owner will be in violation of this land disturbance code.
 - (5) Any person violating any of the provisions of this article shall be deemed guilty of a misdemeanor and each day during which any violation of the provisions of this article is committed, continued, or permitted, shall constitute a separate offense. Upon conviction of any such violation, such person, partnership, or corporation shall be punishable by a fine of not more than \$1,000.00 for each offense. In addition to any other penalty authorized by this section, any person, partnership, or corporation convicted of violating any of the provisions of this article shall be required to bear the expense of restoration.
- (b) The city may revoke a land disturbance permit if failure to comply with any term, condition, limit, deadline or other provision of the land disturbance permit occurs.
- (c) The city may recover all attorneys' fees, court costs, stabilization of disturbed areas, cleanup costs, and other expenses associated with enforcement of this article through required fiscal securities and any other forms available.

(Code 1987, § 28-213; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-84. - Appeal of notice of violations.

Any person receiving a notice of violation may appeal the determination of the city public utilities department. The notice of appeal must be received within 15 days from the date of the notice of violation in written form. Hearing on the appeal before the director of public utilities shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the director of public utilities shall be final.

(Code 1987, § 28-214; Ord. No. 8799, § 1, 1-22-2013)

Secs. 34-85—34-100. - Reserved.

ARTICLE IV. - POST CONSTRUCTION

Sec. 34-101. - Purpose and objectives.

The purpose of this article is to establish controls on the quantity and quality of stormwater released from post construction developments through the following objectives:

- (1) To protect against increased flooding and decreased water quality of downstream areas and streams due to effects of development.
- (2) To protect the welfare of individuals and their property by reducing the effects of development.
- (3) To protect the environment and aquatic habitat of fish and other species.

(Code 1987, § 28-215; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-102. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Administrative variance means a variance that is considered by the city to be complicated and which will require a more extensive review. These administrative variances shall be reviewed by the city engineer or outside consultants designated by the city.

Applicants means the owner and contractor who complete and sign the post-construction stormwater permit application.

Best management practice (BMP) means a measure implemented to control stormwater.

City public utilities means the department within the city that has the authority and responsibility to manage, enforce, and regulate stream buffer activities within the city.

Construction means the implementation of a proposed plan of improvements by a contractor that may include excavating, site grading, utility work, paving, building, and other activities that may contribute to the disturbance of land and elevated levels of erosion and sediment.

Design engineer means the professional engineer responsible for the design of the post-construction stormwater BMPs.

Development means the process of creating new residential, commercial, office, or other land uses through the process of construction.

Drainageway means any natural or artificial watercourse, including, but not limited to, streams, rivers, creeks, ditches, channels, canals, waterways, gullies, ravines, or washes in which water flows in a definite direction or course, either continuously or intermittently, including any area adjacent to it that is subject to inundation by reason of overflow or floodwater and meets any of the following conditions:

- (1) Provides for conveyance of stormwater runoff from an upstream property or development.
- (2) Defined as waters of the United States by the U.S. Army Corps of Engineers.
- (3) Supports riparian area or sensitive habitat.
- (4) Tributary area equal to or greater than 20 acres.
- (5) Alteration or filling will change the manner in which runoff is discharged onto a downstream property and potentially results in a negative impact to that downstream property.

Erosion means the process by which the land surface is worn away by the action of wind, water, ice, and gravity.

Hydrograph means the distribution of runoff over time.

Inspector means the city representative who visits sites to check for compliance with the post-construction stormwater permit.

Permittees means the owner and contractor who obtain a post-construction stormwater permit.

Post-construction stormwater permit process means the process applicants proceed through to obtain a stormwater permit from the city.

Post-construction stormwater program means the program developed and administered by the city to regulate the quantity and quality of stormwater within the incorporated limits of the city.

Pre-development condition means the natural condition of a site before development occurred.

Professional engineer means an individual currently registered with the state board of registration as a professional engineer, practicing engineering in accordance with state law.

Sediment basin means an impoundment that captures sediment-laden runoff and releases it slowly, providing prolonged settling times to capture coarse and fine-grained soil particles.

Seeding and mulching means seeding disturbed areas with permanent grasses and spreading straw mulch to provide immediate protection against raindrops and wind erosion and, as the grass cover becomes established, to provide long-term stabilization of exposed soils.

Staff variance means a variance that is considered by the city to be minor in nature.

Stormwater means runoff generated as a result of a precipitation event.

Stormwater permit means the permit obtained from the city prior to commencement of land-disturbing activities as defined in the city post-construction stormwater manual.

Stormwater pollution prevention plan (SWPPP) means the complete package of required information submitted to the city for review and acceptance for a land disturbance permit which include drawings, land disturbance report, report checklist, and option of probable cost example worksheet.

Stormwater quality depth (SQD) means the depth of runoff from a one-year 24-hour storm.

Stormwater quality release rate (SQR) means the discharge that will drain the stormwater quality volume from the detention basin in 24 hours.

Stormwater quality volume (SQV) means the total volume of runoff from a one-year 24-hour storm.

Time of concentration (tc) means the time it takes for runoff to flow from the hydraulically most remote point in the watershed to the point of analysis.

(Code 1987, § 28-216; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-103. - Permits; design and construction requirements.

- (a) The city shall administer and enforce this article with the issuance of post-construction stormwater permits. Requirements and guidance for the post-construction stormwater permits are contained within the most current edition of the post-construction stormwater manual.
- (b) Before conducting development activities that are equal to or greater than one acre, or are part of a larger common plan of development or sale that will develop one or more acres over the life of the project within the city limits, a post-construction stormwater permits must be obtained. Other project requirements for post-construction stormwater permits are contained within the most current edition of the post-construction stormwater manual.

- (c) Development activities less than one acre in size in the city may require post-construction stormwater permits if city public utilities deems it necessary.
- (d) The post-construction stormwater manual may be updated and expanded from time to time at the discretion of the city based on changes in rules and regulations of the federal environment protection agency and the state department of natural resources, improvements in engineering, science, and monitoring, and local maintenance experience.
- (e) In addition to the requirements set forth by the city, all other local, state, and federal permits, ordinances, laws, and regulations of post-construction stormwater manual must be followed.

(Code 1987, § 28-217; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-104. - Fees.

Fees are shown in the most current version of the city's post-construction stormwater manual.

(Code 1987, § 28-218; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-105. - Inspections.

All post-construction stormwater BMPs shall be subject to inspection by the city. Representatives of the city shall have the right to enter upon any land for the purposes of making an inspection or acquiring information to determine whether the property conforms to the requirements of this article.

(Code 1987, § 28-219; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-106. - Enforcement.

The city public utilities department shall have the authority and responsibility to manage, enforce, and regulate post-construction stormwater activities within the city.

(Code 1987, § 28-220; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-107. - Violations.

- (a) All persons are required to obtain a post-construction stormwater permit before performing any activities that are stated in section 34-103. If activities requiring post-construction stormwater permit are performed without a permit, but require one, the city public utilities department will place a posted stop work order at the location of the activity. This stop work order stops work on non-permitted sites. The order shall state what is required prior to continuing activity and the time frame in which these actions must occur.
 - (1) If the stop work order is removed by anyone other than the city, or the act continues without following the requirements of the stop work order, then the person performing the work and the owner of the property are in violation of the post-construction stormwater code.
 - (2) If the land disturbance activities stop after the stop work order is posted at the site but actions required by the order are not followed within the time frame stated in the order, then the owner of the property is in violation of the post-construction stormwater code.
 - (3) If the property owner chooses stop work and not obtain a permit, the property owner will still be required to reestablish the original topography and vegetation of the site prior to activities in a form amenable to the stormwater coordinator within the timeframe stated in the order. If the

property owner does not reestablish the site to standards and time stated in the order the property owner will be in violation of this post-construction stormwater code.

- (4) Any person violating any of the provisions of this article shall be deemed guilty of a misdemeanor and each day during which any violation of any of the provisions of this article is committed, continued, or permitted, shall constitute a separate offense. Upon conviction of any such violation, such person, partnership, or corporation shall be punished by a fine of not more than \$1,000.00 for each offense. In addition to any other penalty authorized by this section, any person, partnership, or corporation convicted of violating any of the provisions of this article shall be required to bear the expense of such restoration.
- (b) The city may revoke a post-construction stormwater permit if failure to comply with any term, condition, limit, deadline or other provision of the post-construction stormwater permit occurs.
- (c) The city may recover, through required fiscal securities and any other forms available, all attorneys' fees, court costs, cleanup costs, and other expenses associated with enforcement of this article, including, without limitation, the costs of stabilizing disturbed areas and completing necessary post-construction stormwater BMPs.

(Code 1987, § 28-221; Ord. No. 8799, § 1, 1-22-2013)

Sec. 34-108. - Appeal of notice of violations.

Any person receiving a notice of violation may appeal the determination of the city public utilities department. The notice of appeal must be received within 15 days from the date of the notice of violation in written form. Hearing on the appeal before the director of public utilities shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the director of public utilities shall be final.

(Code 1987, § 28-222; Ord. No. 8799, § 1, 1-22-2013)

Attachment C

City of Moberly's Illicit Discharge Detection and Elimination Plan

DRAFT

Illicit Discharge Detection and Elimination Plan

City of Moberly, Missouri

Prepared for
City of Moberly, Missouri

December 2021

City of

Moberly!

Illicit Discharge Detection and Elimination Plan

December 2021

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DRAFT

1.0 Introduction

The City of Moberly, Missouri (City) has developed this illicit discharge detection and elimination (IDDE) plan in accordance with the Missouri Department of Natural Resources (MDNR) National Pollutant Discharge Elimination System (NPDES) State Operating Permit Number MO-R040030 (MS4 Permit) and Ch. 34, Art. II of Moberly's Code of Ordinances (IDDE Ordinance). Per Moberly's IDDE Ordinance, the purpose of IDDE is to provide for the health, safety, and general welfare of the citizens of Moberly. The plan applies to City employees, residents, and workforce, including contractors. The objective of this plan is to develop prevention and detection procedures regarding illicit connections and illicit discharges to the City's stormwater system.

The City provides the following definitions:

Illicit Connection means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge refers to any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from emergency fire-fighting activities.

Ch. 34, Art. II, Section 34-31 of Moberly's Code of Ordinances further defines an illicit connection illegal (illicit) discharge:

Illicit Connection means either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency; or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illegal Discharge means any direct or indirect non-stormwater discharge to the storm drain system, except as exempted (in Ch. 34, Art. II of Moberly's Code of Ordinances).

The following discharges are exempt by Moberly's IDDE ordinance, Ch. 34, Art. II, Section 34-35:

- Water line flushing or other potable water sources
- Landscape irrigation or lawn watering
- Diverted stream flows
- Rising groundwater

- Groundwater infiltration to storm drains
- Uncontaminated pumped groundwater
- Founding or footing drains (not including active groundwater dewatering systems)
- Crawl space pumps
- Air conditioning condensation
- Springs
- Non-commercial washing of vehicles
- Natural riparian habitat or wetland flows
- Swimming pools, if dechlorinated (typically less than 1 ppm chlorine)
- Fire-fighting activities
- Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety
- Dye testing, upon verbal notification to the authorized enforcement agency
- Any other water source not containing pollutants

2.0 Illicit Discharge Identification

The following sections describe the methods for identification of an illicit discharge to the City's MS4. The release or suspected release of an illicit discharge should be reported to the appropriate authorities, as described in Section 2.5. To prevent and detect illicit discharges, the City will inspect stormwater outfalls regularly, identify and inspect priority areas, and address illicit discharges, as needed.

2.1 Priority Inspection Areas

The City has identified priority inspection areas, by considering the following criteria:

- Areas with older infrastructure
- Areas of higher population density
- Areas that have primarily industrial and/or commercial use
- Areas with a history of past illicit discharges
- Areas with evidence of ongoing illicit discharges
- Areas with on-site sewage disposal systems
- Areas upstream of sensitive waters
- Areas that are susceptible to flooding
- Areas of active development
- Areas with significant shipping container activity or transport
- Areas with known litter or dumping issues
- Areas with large or increased number of citizen complaints
- Transportation corridors
- Large, paved areas or parking lots
- Gas stations and truck stops
- City Parks Department properties
- Distribution centers
- Vehicle service centers

Using the above criteria, the City has identified priority inspection areas, and had marked these locations for focused inspection on a map of the City, as shown in Appendix A. A minimum schedule for inspection of priority areas is described in Section 2.2.

2.2 Identification Plan

As discussed in Section 1.0 of the Stormwater Management Plan (SWMP), the City has identified 19 stormwater outfalls that discharge to four major drainage areas (see Table 2-1). Appendix B includes a map with the locations of stormwater outfalls within the City. The City inspects a minimum of 60% of all outfalls during the permit period to provide for the health and safety of the public.

Table 2-1 Stormwater Outfall Locations

Outfall	Latitude	Longitude	Northing	Easting
Outfall #1	39.4438919100	-92.4356272600	1314663.51800	1658595.76200
Outfall #2	39.4349428027	-92.4187611349	1311407.86000	1663361.75400
Outfall #3	39.4347522118	-92.4186753925	1311338.46400	1663386.03300
Outfall #4	39.4275576337	-92.4138551980	1308719.27434	1664749.95433
Outfall #5	39.4274803181	-92.4138157183	1308691.12463	1664761.13304
Outfall #6	39.4198616297	-92.4188547619	1305914.88300	1663340.25000
Outfall #7	39.4193398413	-92.4162672727	1305725.50200	1664071.39400
Outfall #8	39.4087674705	-92.4303522776	1301871.39800	1660095.31300
Outfall #9	39.4084300844	-92.4211034938	1301750.66400	1662708.62200
Outfall #10	39.4047116099	-92.4340243932	1300393.37500	1659058.85300
Outfall #11	39.4018162559	-92.4265951112	1299340.43700	1661158.94200
Outfall #12	39.3887017097	-92.4127273553	1294567.29400	1665082.22100
Outfall #13	39.3940471351	-92.4203849338	1296512.22400	1662916.27000
Outfall #14	39.3934263806	-92.4254498918	1296284.90800	1661485.07500
Outfall #15	39.3930886900	-92.4283153100	1296161.25800	1660675.38400
Outfall #16	39.4027355400	-92.4521996200	1299670.40500	1653923.60900
Outfall #17	39.4109356000	-92.4443177100	1302658.34500	1656148.95600
Outfall #18	39.4205053800	-92.4747562900	1306140.04300	1647547.96500
Outfall #19	39.4349030643	-92.4519731598	1311386.66500	1653981.36400

Note: The coordinate system used is NAD83 State Plane Missouri Central (in feet), and this data is in standard UTM zone 15.

Based on the priority inspection areas established in Appendix A, Moberly has developed a list of areas of highest priority for inspection. The City will annually inspect all priority inspection areas. Additional information regarding outfall inspections is provided in Section 2.3. An inspection form for inspections and illicit discharge investigations is provided in Appendix C.

2.3 Significant Contributions

The City has identified the following significant contributors and their related parameters of concern (see Table 2-2). The City may sample for parameters of concern at each outfall or at any potential illicit discharge, if deemed necessary, to trace potential illicit flows or connections to storm sewers and track significant contributions over time. Table 2-2 will be periodically reviewed by the City and updated as needed.

Table 2-2 Significant Contributors and Parameters of Concern

Significant Contributors	Pollutants of Concern
On-site sewer systems	E. coli
Animal waste	E. coli
Shipping container activity/transport	Incidental or accidental releases of chemicals/products
Litter	Debris, sediment
Residential chemical use	Pesticides/herbicides, household hazardous waste, used oil
Agricultural activities	Fertilizers, pesticides, E. coli
Vehicle service stations	Petroleum products
Industrial activities	Various industrial products depending on industry
Construction activities	Debris, sediment, incidental or accidental releases of chemicals/fluid

2.4 Inspection and Investigation Procedures

Dry and wet weather outfall screening will occur annually, according to the outfall inspection plan provided in Section 2.2. Considerations for both dry and wet weather screening are provided in Table 2-3. Field observations and outfall sampling (when needed) will be performed during the inspections to further evaluate discharges. An inspection form for screening inspections and illicit discharge investigations is provided in Appendix C.

Table 2-3 Outfall Screening Considerations

Screening Type	Strategies/Considerations
Dry weather	<ul style="list-style-type: none"> • Appropriate screening times include during dry weather (a minimum of 72 hours after a rain event) when trees are not shedding • If necessary, place sandbags at the outfall to pond flow for sampling • Note travel of stormwater • Complete the inspection form, collect a grab sample if dry weather flow is present, and document the inspection with photographs
Wet weather	<ul style="list-style-type: none"> • Appropriate screening times include during wet weather (a maximum of 48 hours after a rain event but preferably within 24 hours) • Note travel of stormwater • Complete the inspection form, collect a grab sample, and document the inspection with photographs

The City conducts investigations in response to field screening discoveries, spills, or in response to complaints from the public or municipal staff. Investigations are used to determine the source of illicit discharges, the nature and volume of discharges through the any illicit connection to the storm sewer, and the party responsible. The City follows these timelines for illicit discharges:

- Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
- Investigate (or refer to the appropriate agency with the authority to act) within five days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.

Sampling will include a grab sample at each outfall, which will be analyzed in-house at the City's laboratory. The list of sampling parameters at each screening or investigation includes:

- 5-day biological oxygen demand (BOD₅)
- Ammonia (NH₃)
- Chemical oxygen demand (COD)
- Chloride
- Chlorine
- Dissolved oxygen

- E. coli
- pH
- Temperature
- Total suspended solids (TSS)

The City may sample for additional parameters if their presence is suspected. For parameters sampled on a case-by-case basis, the City will collect a grab sample and have the sample analyzed at a certified laboratory. These parameters may include, but are not limited to:

- Fluorescence
- Fluoride
- Hardness, total
- Metals, total
- Nitrogen, total
- Oil and grease
- Phosphorus, total
- Specific conductivity
- Surfactants

Data from each outfall inspection and sample analysis will be kept in City records, so that stormwater quality data can be reviewed or analyzed as needed.

2.5 Source Tracing

If evidence of an illicit discharge is reported to Moberly or discovered during an inspection, the Public Utility Department will take the following steps:

1. The inspector will systematically visually examine structures upstream of the discovered discharge until evidence of the discharge is no longer present or a source is located.
2. The inspector may take sample(s) of the discharge upstream and at the outfall to determine potential sources.
3. The inspector will attempt, through systematic inspection (and using data and the MS4 map, if needed), to locate the source of the illicit discharge.
4. If a source cannot be located through systematic inspections, then Moberly may also consider dye testing, televising, or smoke testing as additional tools to help identify the source.

5. Once the potential source is discovered, Moberly will identify and contact the responsible party to initiate corrective actions. Section 3.0 provides further detail regarding illicit discharge enforcement.

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3.0 Illicit Discharge Reporting

In the event of an illicit discharge, or upon the suspected release of an illicit discharge, emergency response agencies will be notified immediately.

Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area like a road ditch that drains into one of the above. If applicable, report oil releases to:

National Response Center
(800)-424-8802

It is required by state law that spills of a petroleum product in excess of 50 gallons be reported to the MDNR. Spills of hazardous materials should be reported to both the MDNR and the City immediately. In addition, any reportable spills of oil or any spills of hazardous materials will be reported to the following number:

Missouri Department of Natural Resources
24-hour Spill Line
(573) 634-2436

In the event of any type spill that is reported to the state or federal government, the City will also be notified.

City of Moberly, Public Utility Department
(660) 269-8705, ext. 2073

City of Moberly, Police Department
(660) 263-0346

In the event of a release of a non-hazardous material, authorized enforcement agencies will be notified in person or by phone no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed to the Director of Public Utilities within three business days of the original notice.

If the discharge of prohibited materials originates at a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record for a minimum of three years that includes a description of the discharge and actions taken to prevent its recurrence.

4.0 Emergency Spill Response Plan

The City's Emergency Spill Response Plan provides procedures for city staff to respond to and mitigate releases and spills. The City maintains this plan and ensures that all appropriate city staff have access to a copy of the plan. Emergency responders are trained to respond to spills and releases and to take appropriate safety measures.

Emergency responders will coordinate with the City's Public Utility Department to notify them of releases. If the release or spill is from an unknown source, the City will attempt to identify the source of the release using the procedures outlined in Section 2.5. The City's current Emergency Spill Response Plan is provided in Appendix D.

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5.0 Enforcement

If a person or entity that violates a prohibition or failed to meet a requirement of Chapter 34, Article II of Moberly's IDDE ordinance, the authorized enforcement agency may order compliance by written Notice of Violation to the responsible person. Such notice may require without limitation:

- The performance of monitoring, analyses, and reporting
- The elimination of illicit connections or discharges
- That violating discharges, practices, or operations shall cease and desist
- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property
- Payment of a fine to cover administrative and remediation costs
- The implementation of source control or treatment best management practices (BMPs)

Violators may also be subject to suspension of their MS4 discharge access and criminal prosecution to the fullest extent of the law.

If abatement of a violation and/or restoration of affected property are required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Violators have the option to appeal a Notice of Violation; the City's decision regarding an appeal shall be final. If violations not corrected as outlined in the Notice of Violation or hearing decision, authorized enforcement agencies may take any and all measures necessary to abate the violation and/or restore the property and the property owner will be notified of the abatement costs within 15 days after abatement. The property owner may file a written protest of the abatement costs within 15 days of the assessment.

In lieu of enforcement proceedings, penalties, and remedies authorized by Chapter 34, Article II of Moberly's Code of Ordinances, the City may impose alternative compensatory actions upon a violator, such as storm drain stenciling, attendance at compliance workshops, creek clean-ups, etc.

6.0 Education and Outreach

Education and outreach efforts are performed by the City to inform citizens about IDDE. The City conducts IDDE outreach activities to businesses, industries, and the public on a calendar year basis, as outlined in Section 2.0 of the SWMP. The City will continue to develop outreach methods and will add to this list, as needed.

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Appendices

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Appendix A

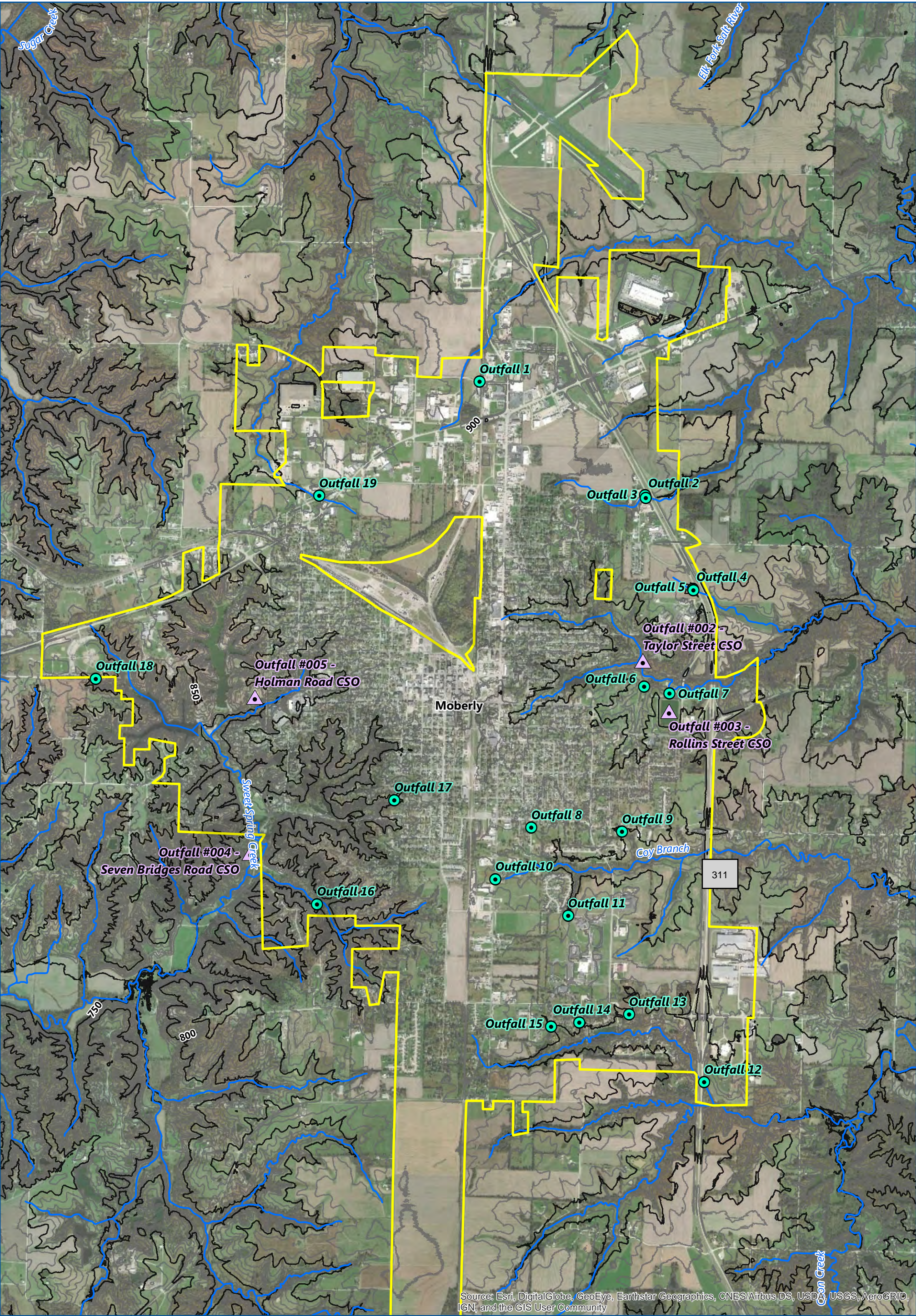
Priority Inspection Areas


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Appendix B





MS4 Outfall Map


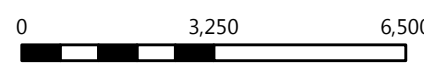
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-  Proposed Outfall Location
-  Combined Sewer Overflow Locations (Approximate)
-  National Hydrography Dataset (NHD) Flowline

-  Municipal Boundary
-  Surface Elevation Contours
-  50 foot
-  10 foot



0 3,250 6,500
Feet

MOBERLY MS4 OUTFALLS

City of Moberly

Moberly, MO

Appendix C

MS4 Outfall and Illicit Discharge Inspection Form

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City of Moberly
MS4 Outfall and Illicit Discharge Inspection Form

GENERAL INFORMATION

Outfall Number: _____

Watershed/Priority Area: _____

Date: _____ **Time:** _____ **Inspector:** _____

Weather: ☐ Clear ☐ Overcast ☐ Rain

Temperature: **Air** _____ **deg F** **Water** _____ **deg F**

Rain Totals: in 24 hours: _____ in 48 hours: _____

Sample #: _____

Photo #(s): _____

SITE INFORMATION

Flow Observed: ☐ Yes ☐ No

Channelized Flow: ☐ Yes ☐ No

Flow rate estimate: _____ **gpm / gph (circle one, or add a narrative description)**

Erosion Observed: ☐ Yes ☐ No

Water Body Impacts Observed: ☐ Yes ☐ No **Approximate length of stream impacts:** _____

VISUAL OBSERVATIONS

Biological: ☐ Fish ☐ Algae ☐ Eggs ☐ Bacteria ☐ Larvae ☐ Iron Bacteria
 Other: _____

Turbidity / Color: ☐ None ☐ Clear ☐ Opaque ☐ Gray ☐ Red ☐ Green ☐ Yellow ☐ Brown
 Other: _____

Deposits / Stains: ☐ None ☐ Mineralization ☐ Petroleum ☐ Sediments
 Other: _____

Floatable: ☐ None ☐ Litter ☐ Oil Sheen ☐ Sewage ☐ Suds
 Other: _____

Odor: ☐ None ☐ Petroleum ☐ Sewage ☐ Rotten Eggs (Sulfur) ☐ Musty
 Other: _____

Structural Condition: ☐ Normal ☐ Cracking ☐ Spalling ☐ Corrosion ☐ Clogged
 Other: _____

Vegetation Condition: ☐ Normal ☐ Inhibited Growth ☐ Bare ☐ Excessive Growth
Other: _____

Comments/impacts to water body:

RECOMMENDED FOLLOW-UP

☐ Contact landowner

☐ Conduct tracing/sampling of discharge

☐ Follow up on reported concern

☐ Other actions needed

Additional Comments:

Appendix D

Emergency Spill Response Plan

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Emergency Response Plan for Spills and Illicit Discharges

Department of Public Utilities

City of Moberly, MO

Spill Response Plan

Introduction:

Hazardous materials incidents are a fact of life in communities around the world and must be recognized as such. Catastrophic emergencies created by hazardous materials incidents may pose a serious threat to the local Wastewater Treatment Facility, sewer systems and area waterways. Municipalities and local governments are often completely on their own during the first stage of almost any hazardous materials incident. The City of Moberly Public Utilities Department shall strive to be prepared for such incidents with an Emergency Response Plan designed to handle hazardous materials. The goal of this plan is to protect the community and the environment served by the City of Moberly's Wastewater Treatment Facility.

Catastrophic emergencies that may be encountered include:

- Railroad or trucking accidents involving toxic, flammable or explosive chemicals or strong, highly corrosive acids or bases,
- Accidents involving radioactive materials,
- Accidents involving unknown substances,
- Spills, accidental and/or deliberate discharges by industries,
- Spills, accidental and/or deliberate discharges by individuals,

In the event the Public Utilities Emergency Response Plan should overlap with the Randolph County Local Emergency Operations Plan, the Randolph County Local Emergency Operations Plan shall take precedence.

Purpose:

The purpose of this document is to outline the Department of Public Utilities' coordinated spill response plan and procedures. This document will be used as a reference by the Public Utilities, Police and Fire Department staff and all other entities that may be involved in fielding calls and/or responding to incidents. This document is intended to reflect the essential steps necessary to initiate, conduct and terminate an emergency response action.

Definitions:

“Hazardous Materials” generally refers to petroleum, petroleum products, radioactive materials, acutely toxic chemicals and other toxic chemicals.

“LEOP” refers to the Randolph County Local Emergency Operations Plan, revised 3/30/2004.

“RCRA” refers to the Resource Conservation and Recovery Act (of 1976). This act established a framework for the proper management and disposal of all wastes.

“Receiving Stream” is defined as any body of water that receives discharge from the City of Moberly sanitary, combined and/or separate sewer system and is permitted through the MoDNR

“Spill” is defined as any discharge, accidental or deliberate, that may enter the “Waters of the State” and has or may have the potential to harm humans, wildlife and/or the environment. This definition also includes any discharge, accidental or deliberate, that may cause harm to the Municipal Wastewater Treatment Facility and/or “pass through”, untreated, into the environment.

“Waters of the State” means any and/or all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface and subsurface water, natural and artificial, lying within or forming a part of the boundaries of the State of Missouri which are not entirely confined or retained completely upon the property of a single person.

“WWTF” is an acronym for the City of Moberly’s Wastewater Treatment Facility. The facility is located east of Moberly, off State Rd EE. Turn north from EE on County Rd 2350 . Turn west immediately after crossing the RR tracks.

Plan Distribution:

The following will receive a copy of the Spill Response Plan:

City Manager,

Director of Public Utilities,

Chief Operator, WWTF,

Industrial Pretreatment Coordinator,

Distribution and Collection Superintendent,

Distribution and Collection Foreman,

Public Works Director,

Fire Department LEPC Coordinator,

Fire Department LEOP Coordinator,

Police Department, Chief,

Police Department, Assistant Chief,

NOTE:

According to the National Response Team, Emergency Planning Guide this plan should be made available to the public for comment and/or review on the city website and at City Hall.

The spill response plan includes:

1. **Contact** appropriate individuals,
2. **Control** the area of concern,
3. **Contain** the spill,
4. **Cleanup** the area.

1. Contact

A. Spills may be reported by the following:

Local citizens,

City employees,

State/County employees,

Commercial/Industrial employees or officials,

Health Department,

Police Department,
Highway Patrol

B. Spills may be reported to the following departments:

911 emergency,
Fire Department,
Police Department
Public Utilities Department,
Street Department,
Randolph County Sheriff's Office,
Randolph County Health Department,
City Hall
Online complaint forms

C. Assistance from other Departments

1. The Moberly Police Department: 660.263.0346

Command center,
Activation of notification processes,
Traffic and crowd control,
Evacuation procedures,

The command center will complete a message form (see Attachment A) for each message sent or received.

NOTES:

In the event evacuation procedures are required, the Randolph County LEOP will take effect.

In the event evacuation procedures require “safe housing” for the evacuees, the Randolph County LEOP will take effect.

2. The Moberly Fire Department: 660.269.8705 ext. 2035

Coordination center,

Containment supplies, including:

Hazmat contacts,

List of chemicals used by individual industries,

Fire control

Search and Rescue,

SCBA equipment,

Radiological Monitoring Equipment, One (1) Self Support Kit,

Personnel emergency first aide/medical treatment,

General public first aide/medical treatment,

NOTE:

In the event City personnel or the general public require emergency first aide and or medical treatment the Randolph County LEOP will take effect.

3. Water Department, Distribution and Collection

Available resources

Blower,

Vactor truck,
Traffic cones,
Traffic signage,
Barricades,
Personnel,
Portable pumps,
Gas meter,
Safety vests,
Vehicles,
Backhoe (2)
Equipment operators,

4. Public Works/Street Department

Available resources

Personnel,
Vehicles,
Traffic cones,
Traffic signage,
Backhoe,
End loader,
Safety vests,
Sand,
Barricades,

Equipment operators,

5. Wastewater Department

Available Resources

Tractor,

Personal floatation devices,

Boat/oars,

Vehicles,

Equipment operator,

6. Parks Department

Available resources

Equipment available?

Operators?

7. Radio Station

Public announcements

8. Industry Contacts

See attachment F

9. MoDNR Emergency Response Personnel

10. USEPA Emergency Response Personnel

In the event of a major spill and/or chemical hazards the Director of Public Utilities shall be notified first and be recognized as the “person in authority”.

The “person in authority” will take notes of all events to the best of his ability. These notes shall contain:

Names of persons contacted and the time of contact.

Brief statement concerning the reason for the contact.

Decisions made concerning the spill and/or containment and/or clean up.

Director of Public Utilities

Dana Ulmer

Work Cell: 660.269.7659

Personal Cell: 660.651.7565

The Director of Public Utilities, or their designee, shall be responsible for any press releases to the local radio stations, newspaper and/or any other local media.

In the event the Director is unavailable The WWTF Chief Operator shall be notified.

WWTF Chief Operator

Emily Lute

WWTF: 1.660.269.9437

WWTF Cell: 1.660.353.1885

The following is a list of personnel that may need to be notified in the event of an emergency spill:

Industrial Pretreatment Coordinator

Emily Lute

Office: 1.660.269.9437

Stormwater Coordinator

Rachel Hultz

Work: 660.353.9745

Superintendent, Water Distribution and Collection

Tim Patrick

Work Cell: 660.998.0127

Foreman, Water Distribution and Collection

Chris Bohm

Work cell: 660.998.0128

Personal cell: 660.651.3829

Public Works/Street Department

Tim Grimsley

Office: 660.353.8003

Work cell: 660.924.1813

Clifton Stockhurst

Work cell: 660.269.9451

Fire Department

Donald Ryan: Fire Chief

Phone: 319.750.2591

In the event the material is not an immediate threat to life and property

Notification will be limited to:

- a. Director of Public Utilities,
- b. Wastewater treatment facility, Chief Operator,
- c. Industrial pretreatment inspector,
- d. Collection system personnel,
- e. Stormwater Coordinator,
- f. Other concerned or involved agencies (MoDNR, EPA)

2. Control

The initial size-up and risk/benefit analysis of all tactical considerations shall be identified early in the incident. This will have a major impact on the recovery/clean up processes later.

First Responders.

The priorities for all who respond to hazardous materials incidents are first, protecting life, second, protecting the environment and third, protecting property and equipment.

The first responder on the scene will:

1. Evaluate the situation as quickly as possible without putting him/herself in danger,

Questions of importance

- A. Will traffic control be needed?

Moberly Police Department

- B. Will the area need to be barricaded?

Street Department,

D and C Crew,

- C. Will the spill require evacuation in the immediate area of the spill, along the path the spill will travel? How large a buffer area is needed?

Toxic fumes,

Explosive possibility,

Police Dept,

- D. Can the spill be contained before it enters the stormwater drainage system or any waters of the state.

2. Contact the command center to activate the notification procedure, Initially, the first responder on the scene should only have to make one phone call. The command center will relay all information to the appropriate departments and personnel involved.

3. The following information shall be reported to the command center:

Physical address of the spill,

Contaminants present, if known and/or possible contaminants,

Present dangers/hazards, if known and/or possible dangers/hazards, i.e. flammability, explosion potential, etc.,

Personnel to be notified,

Departments to be notified,

Equipment and/or supplies needed,

3. Containment

Because protection of the environment is second only to protection of life, the tactical consideration used to handle a hazardous material emergency must be based on the overall effect those tactics will have on the environment.

When formulating tactical considerations aimed at minimizing impact to the environment, the emergency responders are simultaneously improving the recovery potential and minimizing the clean up that is required.

Procedure to follow in the event the spill is flammable, toxic and/or hazardous.

A. Flammable, Toxic and/or hazardous materials.

Questions of importance:

1. Is the source of the spill known?
 - a. If yes, request all MSDSs related to the material.
 - b. If no, request the aid of the Hazmat Crew via the Moberly Fire Department. (Response time will be at least 1 hour.)
2. What is the approximate volume of the spill?
3. What field test equipment is available for immediate use?
 - a. pH meter for acidic or base conditions,
 - b. gas detector for flammability,(What field test equipment is available from the MFD?)
4. Can the spill be contained before it enters the sanitary sewer and /or stormwater system?
 - a. Storm drains blocked,
 - Sand bags,
 - Pillows,
 - b. Vactor truck,
 - c. Containers,
 - d. Sump hole,

In the event the spill has reached the sanitary sewer and/or stormwater system.

Questions of importance:

1. Can the system in the area of the spill either minimize gas accumulation or enhance the opportunity for release of gases?
2. Is the system in the area of the spill gravity flow or force main?
3. Are there any dead spots in the system downstream of the spill that may cause flammables to accumulate?
4. What oxidants are present in the system that may support flammability or promote explosion?
 - a. Oxygen,
 - b. Hydrogen peroxide,
 - c. Chlorine gas,
 - d. Other

Notes:

1. Compounds that present the biggest risk to the sewage system are flammable liquids with low solubility, are lighter than water and have low boiling points or high vapor pressures (volatile). Liquid hydrocarbons are confirmed to pose a significant danger of fire or explosion in a wastewater mixture.

Assess the situation:

1. If unknown, use the gas detector at nearby manholes to determine flammability.
 - a. In the event the material is known to be or is determined to be flammable, manhole covers can be removed at all locations where gas is detected in order to dissipate or dilute the gas. An attendant or a barrier should be left at the open manholes.
 - b. If a manhole upstream of the spill can be located where the gas is yet undetectable, a blower can be used to dissipate the gas. Make certain, **before the blower is started** that **NO gas is detectable** as the blower may spark and ignite any gas that is present. If a blower can be used, replace all manhole covers along the route. This will prevent the fresh air introduced into the sewer from escaping through the path of least resistance.
2. Whenever possible shut down the pumps at the closest lift station downstream of the spill in order to contain the material.
3. The vacuor truck can be used to remove the material from the lift station wet well.
 - a. In the event that the amount of material is greater than the vacuor truck capacity, containers to store the material should be available .
4. In the event that the spill is of a volume that cannot be contained by the lift station capacity, or in the event the material is of a nature that would cause harm to the WWTF and/or pass through the WWTF; the material can be diverted to the Rollins Street CSO (Outfall #3) and/or the Seven Bridges Road CSO (Outfall #4) for the purpose of containment and cleanup.

Diversion to the Seven Bridges Road CSO (west lagoon) can be accomplished by shutting down the pumps at the lift station. The pump control panel is located inside the building. Normally, only one pump is running at any given time. Observe which of the three pumps is running, then turn the auto/off/on switch to the off position.

To divert the flow to the Rollins Street CSO (east lagoon) the gate will need to be closed. Inside the building, next to the north window, is the control panel. Turn the on/off switch to the off position, and then push the down button until the gate closes. In the event the key to the building is not available, the gate, which is located directly north of the old east plant building, can also be closed manually. Push the lever on the back of the motor to the hand position and crank the handle. This may take a large number of turns due to the gear ratio. The gate is visible from the top of the structure. The lagoon return valve, located along the east fence line must also be closed. It is a left hand valve.

Notes:

The decision to divert the flow to either of the lagoons will be dependent on:

- a. The current water level in the lagoon/s,
 - b. If rain is imminent or already falling,
 - c. Amount of snow melt expected,
 - d. The estimated amount of flow that will be diverted.
5. In the event the estimated flow is too great to be diverted to the lagoons and must be allowed to flow to the WWTF and/or in the event the flow has already reached the WWTF the following modes of operation are available:

A. The WWTF can be operated in a mock storm mode.

Observe which of the two SBR basins has the lowest level. This SBR will be used to collect the pollutants and will be referred to as “the collection basin”..

Operational controls for “the collection basin”.

- Ensure the collection basin sludge pump control button is in the off position on the PLC control panel.
 - Ensure the collection basin decant valves are closed and in the off position on the PLC control panel.
 - If not already, open the influent valve to the collection basin and leave in the manual position
1. The remaining SBR will be referred to as “the idle basin”.

Operational controls for “the idle basin”.

- Close the influent valve to the idle basin and turn to the off position on the PLC control panel.
- Turn off any blowers that may be running in the idle basin.
- Close any blower valves that may be open in the idle basin.

Immediately begin making storage space available.

- Observe which of the two digesters has the lowest level.
- Start pumping sludge from that digester to the sludge holding basin.
- *Start the sludge pump in the idle basin and pump sludge to the digester that is emptying into the sludge holding basin. This will lower the level in the idle basin while the collection basin accepts the pollutants.
- Open the gate valve fully, at the post equalization basin, in order to release the maximum amount possible.

- Observe the settleability in the idle basin. As soon as possible open the decant valve to lower the level in the idle basin. Observe the discharge. Allow the idle basin to discharge as long as the effluent is of a good quality.

The Hazmat Team should have the field test equipment needed to monitor the influent. When it is determined that all the pollutants have been collected, **“the idle basin”** can begin filling. The idle basin will be used on a pass through basis.

- Open the influent valve on the idle basin.
- Continue pumping sludge from this basin to maintain as much capacity as possible.
- Close the influent valve to the collection basin.
- Close one of the decant valves in the idle basin. This will provide equalization between the incoming and out going flows. In the event it is raining, or has recently rained, both decant valves will need to be left open.
- Adjust the post equalization basin gate valve to a nearly closed position. This will allow for maximum settling and retention of any solids that are carried over to the post equalization basin. Monitor the post eq basin for capacity and adjust as necessary to prevent overflow.

In the event the spill is on the east side of town and will not at any time reach the Seven Bridges Road CSO (west lagoon), the pumps at the west lagoon can be turned off.

This can be done without regard to the level of the lagoon for the following reason:

- a. This is a MoDNR permitted discharge point,
- b. The discharge from this lagoon receives primary treatment.
- c. The discharge from this lagoon is consistently under the MoDNR mandated limits.

- d. The diversion of this flow will greatly increase the storage capacity of the WWTF.

Note: In the event partially treated and/or untreated sewage must be released to a City of Moberly MoDNR permitted receiving stream in order to contain a potentially more hazardous substance a press release will be provided to the local radio stations (Attachment C). This announcement will contain the following information:

Date of discharge,

Time discharge was initiated,

Duration of the discharge,

Approximate amount of discharge,

Receiving stream,

Location along the receiving stream where the discharge enters the stream,

What type of treatment the discharge has received,

Potential hazards related to the discharge.

In the event a toxic/hazardous spill reaches the storm drain system:

Questions of importance:

1. What waterway will receive the spill?
 - a. Where along the waterway will the spill enter?

2. What is the approximate volume of the spill?

3. Is the source of the spill known?
 - c. If yes, request all MSDSs related to the material.
 - d. If no, request the aid of the Hazmat Crew via the Moberly Fire Department. (Response time will be at least 1 hour.)

4. What field test equipment is available for immediate use?
 - c. pH meter for acidic or base conditions,
 - d. gas detector for flammability,

(What field test equipment is available from the MFD?)

5. What is the volume of flow already present in the stream?
 - a. Has there been a recent substantial rain?
 - b. Is it currently raining or is rain eminent?
 - c. Heavy snow melt in progress?

All local waterways that receive discharges from the stormwater drainage system shall be designated on the system map. The earliest point of entry of the system into these waterways shall also be designated, along with all accessible points on the waterways.

Earth moving equipment and/or operators for the purpose of building dams and/or other containment structures such as sump ponds, are available locally.

1. Street barn,
 - a. End loader
 - b. Dump trucks

- c. Bulldozer
- d. Equipment operators

2. Distribution and Collection,

- a. backhoe (2)
- b. dump truck
- c. equipment operators

Note:

Additional operators available through other departments:

Wastewater, Parks, Water, and Fire Department,

Note: In the event that a chemical spill has reached any receiving stream permitted by the City of Moberly through MoDNR, a press release will be provided to the local radio stations. The announcement will contain the following: (Attachment D)

Date of spill,

Time of spill,

Receiving stream,

Location where it will enter the receiving stream.,

Approximate amount of spill,

Type of chemical involved,

Hazards involved to humans, wildlife and/or the environment,

5. Clean-up

Any and all expenses incurred for the clean up of the spill, and/or equipment used in the clean-up process will be paid for by the person/s, industry or entity that perpetrated the spill. (City of Moberly, Stormwater ordinance Chapter 34, Article 2, Section 34-42)

Analytical Laboratory

Inovatia Laboratories, LLC

120 East Davis Street

Fayette, MO 65248-1405

660.248.1911

Regulatory Authority

Stormwater-Illicit discharge ordinance

Follow-up activities

After the field situation is stabilized and the immediate danger is under control an Illicit Discharge Report Form (see attachment B) is to be completed by the person in charge of the response team.

Note:

The Resource Conservation and Recovery Act (RCRA) developed and enforced by EPA clearly states that, after an emergency ends and the recovery and clean up process begins, emergency responders are no longer exempt from compliance with the requirements of RCRA.

In the event the spill has reached the sewer system or entered the stormwater drainage system and the source of the spill is unknown.

- a. Start working upstream of the last known location of the material in the system,
- b. Collect grab samples at each location, and mark each with time and location
- c. Record the pH,
- d. Observe and record physical characteristics such as color, odor, amount of flow,
- e. Use collection system maps to determine possible flow routes and sources,
- f. If flow stops before it can be traced back to its source, identify which industries could be the source of the material.
- g. The samples shall be taken to the laboratory for analysis.

Procedures for testing and updating the plan

Testing:

Testing of the Emergency Response Plan shall take place at a minimum of once every other year.

This testing may involve tabletop exercises, chemical tracing activities in the sewer system, and/or mock emergency response drills. All persons involved in the practices shall submit a brief written report on their part in the exercise with emphasis on:

- What part of the plan worked well,
- What did not work and why,
- What improvements in the plan are needed,
- How these improvements will fit into the plan.

All reports shall be turned in to the Director of Public Utilities within five (5) working days of the exercise.

In the event the Emergency Response Plan must be activated all City of Moberly personnel involved in the emergency shall submit a brief written report with emphasis on:

- What part of the plan worked well,
- What did not work and why,
- What improvements in the plan are needed,
- How these improvements will fit into the plan.

All reports shall be turned in to the Director of Public Utilities within five (5) working days after the emergency is abated.

Updating:

- Twice yearly (June and December) all personnel names, addresses, phone numbers, etc shall be reviewed and updated as necessary.
- Industry contact phone numbers and addresses shall be reviewed and updated as necessary.
- Tier 11 reports shall be updated as necessary.
- The task of updating the plan shall be completed by the Stormwater Coordinator and verified as completed by Director of Public Utilities.

Copies of the updates shall be delivered to all persons on the distribution list.

Attachment A

Message Form
Illicit Discharge/Spill Response Plan
Communications Center

Date: _____

Time: _____

To: _____

From: _____

Message:

Message received by: _____

Message relayed by: _____

Time relayed: _____

Notes:

Attachment B
Illicit Discharge Report Form

Date _____ Time _____

Incident location _____

Responsible party: Unknown: _____

Name: _____ Phone: _____

Address: _____

Business/Industry type: _____

Reported by: Unknown _____

Name: _____ Phone: _____

Address: _____

Reported to:

Name/Title: _____

Date: _____ Time: _____

Incident description:

First responder on the scene: _____

Departments on the scene:

Police _____ Fire _____ D & C _____ Street _____

Other _____

Material description:

Flammable _____ Reactive _____ Toxic _____

Corrosive _____ Biological _____ Unknown _____

Other _____

Material identified by:

Hauler _____ Industry/Business _____ Container label _____ Hazmat _____ Laboratory _____

Corrective action taken: _____

Attachment C

Press Release
Sewage Release

In order to contain a potentially toxic chemical spill the City of Moberly Waste Water Treatment Facility is forced to discharge waste water to _____ .
(Receiving stream)

The discharge will enter the stream in the vicinity of _____
_____ .

The release will occur on _____, and begin at approximately _____ (AM, PM).
(Date) (Time)

The duration of the discharge will be approximately _____ with a total
(Length of time)

volume of _____ gallons.
(Amount)

The wastewater discharged has received _____

(Type of treatment discharge has received)

The potential hazards associated with this type of discharge are _____

The City of Moberly strongly advises area residents avoid contact with the waters in this stream until further notice.

Signature/Title

Attachment D

Press Release
Chemical Spill

Due to a (an) _____
(Type of accident that has occurred)

the chemical _____ has the potential to enter _____.
(Chemical name) (Name of stream)

The _____ may enter the
(Chemical name)
stream in the vicinity of _____
(Approximate location of entry)

The spill occurred on _____,
(Date)

and may enter _____ at approximately _____ (AM, PM).
(Name of creek) (Time)

The duration of the chemical release will be approximately _____ with a total
(Length of time)
volume of _____ gallons.
(Amount)

The chemical release has received _____
_____.
(Type of treatment, if any the chemical has received)

The potential hazards associated with this type of chemical are _____

The City of Moberly strongly advises area residents avoid contact with the waters in this stream until further notice.

Signature/Title

Attachment E

Local Industry Contacts

- Central State Enterprises of Missouri 1251 CR1317
 - Alex Watson, Plant manager
 - Cell 660 372-8190
- Wilson trailer Sales 1600 Rt. DD
 - Chris Mathis, Safety Officer
 - 660 263-2070
- Lakeview Biodiesel [607 W. Fowler Rd.](#)
 - Joe Youse, Plant Manager
 - Office 660 263-7273
 - Cell 660 651-9013
- Total Power Coat & Finish PO Box 746, 715 Sturgeon St.
 - Josh Taylor
 - 660 263-7444
- Orscheln Product LLC [1177 N. Morley St.](#)
 - Tom Hall, EH&S Manager
 - 660 269-3564
 - Cell 660 651-2749
- Dura Automotive Systems 1855 Robertson Rd.
 - Mark Barron, Plant Engineer
 - 660 269-2325
- (New) MacRak Inc. [100 Sparks Ave](#)
 - Shawn MacDonald, President
 - Office 815 723-7400
 - Cell 815 557-5643

Attachment D

MS4 Outfall Report and Map

DRAFT

Municipal Separate Storm Sewer System (MS4) Outfalls Review and Recommendations

Prepared for
City of Moberly, Missouri

July 2018

City of

Moberly!

Municipal Separate Storm Sewer System (MS4) Outfalls Review and Recommendations July 2018

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Certifications

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Missouri.



Andrea D. Collier
PE #: 2007020252

July 7, 2018

DRAFT

1.0 Background

This report outlines activities conducted by Barr Engineering Co. (Barr) regarding the review of the City of Moberly's (City's) Municipal Separate Storm Sewer System (MS4) Program and Stormwater Management Plan (SWMP), and includes a report on the desktop review and field survey of the City's MS4 outfalls.

As part of a review of the City's MS4 Program, Barr conducted a review of the City's MS4 outfall locations. This review included an evaluation of MS4 outfall regulatory requirements, definitions, and Missouri Department of Natural Resources (MDNR) guidance; a desktop review of outfall maps; and a field survey of existing, revised, and proposed outfall locations.

This review was conducted to align the City's MS4 outfall map with the City's SWMP and, as part of the SWMP, as a requirement of the Illicit Discharge Detection and Elimination Program. The City's MS4 Missouri State Operating Permit (MSOP), MO-R040030, Section 4.2.3.1.1., regarding the implementation of the Illicit Discharge Detection and Elimination Program states that, at a minimum, the City shall provide:

"A storm sewer map showing the location of all constructed outfalls and the names and locations of all of the 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 information available to the Department upon request."

The resulting new outfall map was produced in accordance with these requirements to be included as part of the City's SWMP.

An initial review of the City's current hardcopy of the MS4 outfall map revealed that all eight outfalls are located at the municipal boundary and in the bed of existing intermittent streams. In preparation for a more detailed review, Barr conducted an evaluation of regulatory requirements to ensure that the outfall locations that are selected meet the definitions, as provided in the rule, and that the revised outfall map as part of the City's MS4 SWMP meets the City's MS4 MSOP requirements, as stated above.

Municipal Separate Storm Sewer, as defined by 10 CSR 20-6.200 (1)(C)16., is:

"...a conveyance or system of conveyances including roads and highways with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, paved or unpaved channels, or storm drains designated and utilized for routing of stormwater which—

- A. Does not include any waters of the state as defined in this rule;*
- B. Is contained within the municipal corporate limits or is owned and operated by the state, city, town, village, county, district, association, or other public body created by or pursuant to the laws of Missouri having jurisdiction over disposal of sewage, industrial waste, stormwater, or other liquid wastes;*

- C. *Is not part or portion of a combined sewer system;*
- D. *Is not part of a publicly owned treatment works as defined in 40 CFR 122.2."*

An MS4 outfall, as defined by 10 CSR 20-6.200(1)(C)18., states that it is:

"A point source as defined by 10 CSR 20-2.010 at the point where a municipal separate storm sewer discharges and does not include open conveyances connecting two municipal separate storm sewers, pipes, tunnels, or other conveyances which connect segments of waters of the state and are used to convey waters of the state."

MDNR's MS4 coordinator provided the following additional explanation of these definitions as guidance. The MS4 outfall is where stormwater from the regulated MS4 discharges or has the potential to discharge to waters of the state. The potential for discharging stormwater to waters of the state is at locations where the storm sewer leaves the jurisdiction of the regulated MS4, but flows to waters of the state. The location where it leaves the jurisdiction is the outfall. If the MS4 discharges to a combined sewer, then it is not classified as a MS4 but as a combined sewer. An MS4 outfall cannot be part of or located in waters of the state, but instead should be a representative point within or at the boundary of the City's jurisdiction where the MS4 discharges to waters of the state. The definition of MS4 outfall excludes non-point source discharges or sheet flow. The location of a MS4 outfall is not typically located at the municipal boundary, unless the municipal boundary is the point at which the MS4 discharges or has the potential to discharge to waters of the state.

Because of the current regulatory definitions of MS4 and MS4 outfall and MDNR guidance, Barr recommends that all existing outfall locations be revised. The desktop review and field survey of the outfalls were conducted to determine where revisions to existing outfall locations could be made and to locate additional outfalls. The recommended revised and proposed new MS4 outfalls were identified in accordance with the above regulations, the MSOP and MDNR guidance, as described below.

2.0 Desktop Review of Outfalls

The City provided a hardcopy map that included approximate locations for the eight existing MS4 outfalls. This map was recreated in ArcGIS and included the eight existing outfalls, the four combined sewer overflow (CSO) outfalls, light detection and ranging (LiDAR) aerial photography, 10-foot topographic contours, national hydrography dataset (NHD) flowlines, surface water impoundments, and the municipal boundaries. Using the LiDAR data, the NHD, and topographic contours, each existing outfall was examined and, as determined to be necessary, revisions to these outfall locations and potential additional outfalls were marked on a map. All of these outfall locations were included on a revised map that was used to conduct the field survey of the outfalls. The results are described below.

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3.0 Field Survey of Outfalls

After completion of the desktop review of the outfalls, on Friday, June 30, 2017, the Barr team conducted the field survey to confirm outfall locations and to identify if any outfalls needed to be relocated or removed. The City had received a combined 3.57 inches of precipitation the morning of the field survey and the day before (June 29 and 30), which was based on rainfall data from a National Oceanic and Atmospheric Administration (NOAA) station in Moberly, Missouri. The Barr team arrived to conduct the fieldwork just after 7:00 a.m. The weather was cloudy and intermittently raining; the rain ceased around 9:00 a.m. The recent rain event resulted in ideal conditions to conduct a field assessment of stormwater outfalls, because the outfalls were currently discharging and stormwater flow paths were easily observed. A secondary field survey event was performed by Aaron Grimm to reassess an appropriate location for Existing Outfall #3 on Tuesday, July 18, 2017. The field surveys were conducted using maps and a Trimble GPS unit to collect additional outfall location data and to collect locations of revised or new outfalls. As a result of the field survey and outfall review, a revised MS4 outfall map showing the existing and proposed outfalls was created and is included as Figure 1. Figure 2 shows only the proposed outfalls and the CSOs.

Existing outfalls are named "Existing Outfall #X" where X represents the number of the outfall. Existing outfalls were numbered in numerical order starting at the northernmost existing outfall and moving around the municipal boundary clockwise until Existing Outfall #8. Proposed (new and revised) outfalls are named "Outfall #X" in numerical order starting at the northernmost proposed outfall and moving around the municipal boundary clockwise, through Outfall #19. The locations of the existing and proposed outfalls can be seen in Figure 1, as well as tabulated in Table 2. The final map of proposed outfalls and CSOs is presented in Figure 2.

3.1 Existing Outfall #1

Existing Outfall #1 was identified in the field and a sign was present marking the location. This outfall fell on the edge of the City's municipal boundary just on the east side of U.S. Highway 63 (Hwy 63) and was in the bed of the existing intermittent stream (unnamed tributary to the Elk Fork Salt River). Existing Outfall #1 can be seen below in Photo 3.1.1.



Photo 3.1.1 Existing Outfall #1 Facing Northeast

The Barr team explored the area upstream and to the west of Hwy 63 and identified a potential replacement for Existing Outfall #1. The recommended revised outfall location can be seen on Figure 1.

The location of Existing Outfall #1 is within a water of the state as identified by a NHD flowline, which does not align with the regulatory definition or MDNR guidance for an MS4 outfall. It is recommended to remove Existing Outfall #1 and to replace it with Outfall #1 in order to provide a more representative stormwater outfall location from the City of Moberly before it enters into a water of the state.

3.2 Existing Outfall #2

Existing Outfall #2 was identified using the map from the City of Moberly and field observations. A sign marking the outfall location was not found. Existing Outfall #2 was estimated to be located where a water of the state (unnamed tributary to the Elk Fork Salt River), as identified by an NHD flowline, crosses County Road B130/2305 to the east of Hwy 63. The upstream culvert of the road crossing at Existing Outfall #2 can be seen below in Photo 3.2.1.



Photo 3.2.1 Existing Outfall #2 Facing North

Existing Outfall #2 location is within a water of the state and not within a conveyance that is in the City's jurisdiction, which does not comply with MDNR rules and guidance for MS4 outfalls. New potential outfall locations were identified and surveyed in the field. Outfalls #2 and #3 identify where City stormwater drainage conveyances enter into the same water of the state (unnamed tributary to the Elk Fork Salt River) and are upstream of Existing Outfall #2. Outfall #2 is the City stormwater ditch entering the southern side of the unnamed tributary, and Outfall #3 is the stormwater ditch entering the northern side of the unnamed tributary.

It is recommended to remove Existing Outfall #2 and to replace it with Outfalls #2 and #3. Outfalls #2 and #3 can be seen in Photo 3.2.2 below. Outfall #2 is on the left side of the photo (south) just before the stormwater ditch joins the unnamed tributary to the Elk Fork Salt River. Outfall #3 is on the right side of the photo (north) just before the stormwater ditch joins the unnamed tributary to the Elk Fork Salt River. Photo 3.2.3 shows only Outfall #2 as it enters the unnamed tributary. In Photo 3.2.3, the City stormwater ditch enters the unnamed tributary from the left side of the photo.



Photo 3.2.2 Outfalls #2 and #3 Showing Unnamed Tributary to the Elk Fork Salt River Facing West



Photo 3.2.3 Outfall #2 as it Enters the Unnamed Tributary Facing West/Southwest

3.3 Existing Outfall #3

Existing Outfall #3 was identified while in the field. A sign marking the outfall location was present. The outfall is just east of Hwy 63 at the municipal boundary and is located within a water of the state (unnamed tributary to Coon Creek), which does not comply with MDNR rules and guidance for MS4 outfalls. Potential outfall replacements were identified in the field. Outfalls #4 and #5 are located just west of Hwy 63 and are in City stormwater ditches just before they discharge into the unnamed tributary. Outfall #4 is in the southern City stormwater ditch where it discharges into the unnamed tributary. Outfall #5 is in the northern City stormwater ditch where it discharges into the unnamed tributary. Existing Outfall #3 is shown in Photo 3.3.1 below. Photo 3.3.2 shows the area in which Outfalls #4 and #5 discharge into the unnamed tributary (Outfall #4 is on the left side and Outfall #5 is on the right). Photo 3.3.3 shows Outfall #4 where it discharges into the unnamed tributary, and Photo 3.3.4 is taken from the approximate location of Outfall #5 but is looking upstream of the City stormwater ditch.



Photo 3.3.1 Existing Outfall #3 Facing Southeast



Photo 3.3.2 Outfalls #4 and #5 Facing Southwest



Photo 3.3.3 Outfall #4 Facing South



Photo 3.3.4 Upstream City Stormwater Ditch from Outfall #5 Facing North

3.4 Existing Outfall #4

Existing Outfall #4 was determined to be very difficult and unsafe to access; therefore, it was not visited in the field. It is unknown whether a sign is posted marking the outfall location. From the desktop review of Existing Outfall #4 on the City's map, it was estimated that this outfall is located in the bed of an unnamed tributary and is likely outside the City's jurisdiction. Outfalls #6 and #7 were investigated as potential outfall replacements for Existing Outfall #4.

Outfalls #6 and #7 were determined to be potential replacements for Existing Outfall #4. Outfall #7 is located upstream of Existing Outfall #4 and appeared to discharge into an unnamed tributary to Coon Creek. The CSO Outfall #003 is nearby to Outfall #7 and appears to drain into the same stream. In the case that this entire basin drains to the CSO, there would be no MS4 outfall in this area. The definition of MS4 outfall excludes all CSOs. Although it was nearby CSO #003, Outfall #7 was examined and is believed to be a separate stormwater outfall. Outfall #6 is located upstream of Existing Outfall #4. Outfall #6 is located in a City stormwater drainage conveyance just as it enters into a heavily wooded area prior to draining into the same unnamed tributary mentioned above. Both Outfalls #6 and #7 are believed to be outfalls that capture stormwater within the City's municipal boundary and jurisdiction and are separate from CSO #003. It is recommended that Existing Outfall #4 be removed and replaced with the more representative and accessible location of Outfalls #6 and #7. Outfalls #6 and #7 are shown in Photos 3.4.1 and 3.4.2 below.



Photo 3.4.1 Outfall #6 Facing South/Southeast



Photo 3.4.2 Outfall #7 Facing East

3.5 Existing Outfall #5

Existing Outfall #5 was located in the field and a sign marking the location of the outfall was present. The outfall was located just east of Hwy 63 in Coy Branch, which is a water of the state as identified by an NHD flowline. Photo 3.5.1 below shows Existing Outfall #5.



Photo 3.5.1 Existing Outfall #5 Facing East/Southeast

Possible outfall replacements and/or additional outfalls were identified at Outfalls #8, #9, #10, and #11.

Outfall #8 is located on the downstream side of a City stormwater culvert that passes under Russhaven Drive (just south of the Russhaven Drive and East McKinsey Street intersection) as the stormwater ditch drains towards Coy Branch. Outfall #9 is located at the upstream end of the City stormwater culvert that passes under the Seventh-Day Adventist Church driveway off East McKinsey Street as the stormwater ditch drains towards Coy Branch. Outfall #10 is located just upstream (to the west) of where Coy Branch begins and is just off the east side of South Morley Street (just north of Bob's Butcher Shop). Outfall #10 is on the downstream side of a culvert that passes underneath South Morley Street. Outfall #11 is located at a City stormwater drainage culvert just west of Moberly Middle School and just before it passes under Kwix Road as it drains to Coy Branch.

Existing Outfall #5 is located in Coy Branch, a water of the state; therefore, it is recommended to be removed and replaced with more representative Outfalls #8, #9, #10, and #11. Each outfall captures a different area of drainage within the drainage basin to Coy Branch. The suggested new outfalls can be seen in the Photos 3.5.2, 3.5.3, 3.5.4, and 3.5.5 below.



Photo 3.5.2 Outfall #8 Facing Southeast



Photo 3.5.3 Outfall #9 Facing Northwest



Photo 3.5.4 Outfall #10 Facing East (downstream)



Photo 3.5.5 Outfall #11 Facing South

3.6 Existing Outfall #6

The location of the sign for Existing Outfall #6 was not found while in the field. Existing Outfall #6 was estimated to be in the bed of an unnamed tributary to Coon Creek at the City's municipal boundary, just east of Hwy 63. Because Existing Outfall #6 is located in waters of the state, this outfall is recommended to be replaced. Potential replacement and additional outfalls were identified at Outfalls #12, #13, #14, and #15.

Outfall #12 is located in a stormwater ditch just on the east side of Hwy 63 as it drains towards an unnamed tributary of Coon Creek. Outfall #13 is in a stormwater conveyance just on the south side of East Urbandale Drive as it drains towards the same unnamed tributary. Outfall #14 is in a stormwater conveyance off the east side of the south end of Chrisman Lane in a residential area as it drains towards the same unnamed tributary. Outfall #15 is located in a stormwater conveyance off the east side of Thomas Street just before it turns into a private drive, also in a residential area, as it drains towards the same unnamed tributary.

It is recommended that Existing Outfall #6 be removed and replaced with Outfalls #12, #13, #14, or #15. Even though Existing Outfall #6 was not clearly identified in the field, the area where it was marked on the City outfall map was along a NHD flowline and would therefore not be a representative MS4 outfall in accordance with MDNR rules and guidance. Outfalls #12, #13, #14, and #15 are shown in Photos 3.6.1, 3.6.2, 3.6.3, and 3.6.4.



Photo 3.6.1 Outfall #12 Facing South



Photo 3.6.2 Outfall #13 East/Northeast



Photo 3.6.3 Outfall #14 Facing South/Southeast



Photo 3.6.4 Outfall #15 Facing Northwest

3.7 Existing Outfall #7

Existing Outfall #7 was located in the field (see Photos 3.7.1, 3.7.2, and 3.7.3) and had a sign marking the location. Existing Outfall #7 is located in the bed of an existing unnamed tributary (in waters of the state) and, as such, is not located in accordance with MDNR rules and guidance. The field team explored the lower area of this basin that was accessible from public roads. This existing outfall is located in a heavily wooded area with fewer public access areas and few roads and public stormwater conveyances. In addition, this area appears to drain to CSO #004, which discharges from a combined sewer impoundment. Replacement outfalls could not initially be identified, but after an additional survey of potential replacement outfalls, Outfalls #16, #17, and #18 were identified as replacement outfalls for Existing Outfall #7.



Photo 3.7.1 Existing Outfall #7 Facing East



Photo 3.7.2 Existing Outfall #7 Facing Southeast



Photo 3.7.3 Immediately Downstream of Existing Outfall #7 Facing West/Northwest

3.8 Existing Outfall #8

The exact location of Existing Outfall #8 was not identifiable in the field due to its close proximity to an industrial facility and private property. The estimated location for Existing Outfall #8 is in the bed of an unnamed tributary to Sugar Creek and is in an NHD flowline. The field team searched for the outfall sign behind the industrial facility and was unable to locate it due to heavy woody vegetation and lack of access points to the unnamed tributary. The estimated location of Existing Outfall #8 is shown in Photo 3.8.1 below.

A potential replacement location was identified at Outfall #19, which was in a stormwater conveyance that discharged just north of an unnamed tributary to Sugar Creek that is shown as a NHD flowline. Outfall #19 is at the discharge point of a small stormwater pipe off the west side of Missouri State Highway DD (Hwy DD) and just north of where the unnamed tributary to Sugar Creek crosses under the Hwy DD and Huntsville Road intersection through a box culvert.

It is recommended that Existing Outfall #8 be replaced with Outfall #19. Outfall #19 is shown in Photo 3.8.2 below. Photo 3.8.1 is taken from Outfall #19 and is looking downstream to where the stormwater ditch discharges into the unnamed tributary to Sugar Creek. Outfall #19 is at the discharge pool of the small pipe shown in the photo.



Photo 3.8.1 Estimated Existing Outfall #8 Facing Southeast



Photo 3.8.2 Outfall #19 Facing Southwest

4.0 Conclusions

Table 1 below outlines Barr's recommendations for outfalls to be removed, replaced, and added. Table 2 contains the nineteen (19) new or revised outfalls and their respective location data, as plotted in the Existing and Proposed Outfalls Map (Figure 1) and the Moberly MS4 Outfalls Map (Figure 2). The coordinate system used is NAD83 State Plane Missouri Central (in feet).

Table 1 Barr's Recommendations for Outfalls to be Removed, Replaced, and Added

Outfalls to be Removed	Replacement Outfalls/New Outfalls
Existing Outfall #1	Outfall #1
Existing Outfall #2	Outfalls #2, #3
Existing Outfall #3	Outfalls #4, #5
Existing Outfall #4	Outfalls #6, #7
Existing Outfall #5	Outfalls #8, #9, #10, #11
Existing Outfall #6	Outfalls #12, #13, #14, #15
Existing Outfall #7	Outfalls #16, #17, #18
Existing Outfall #8	Outfall #19

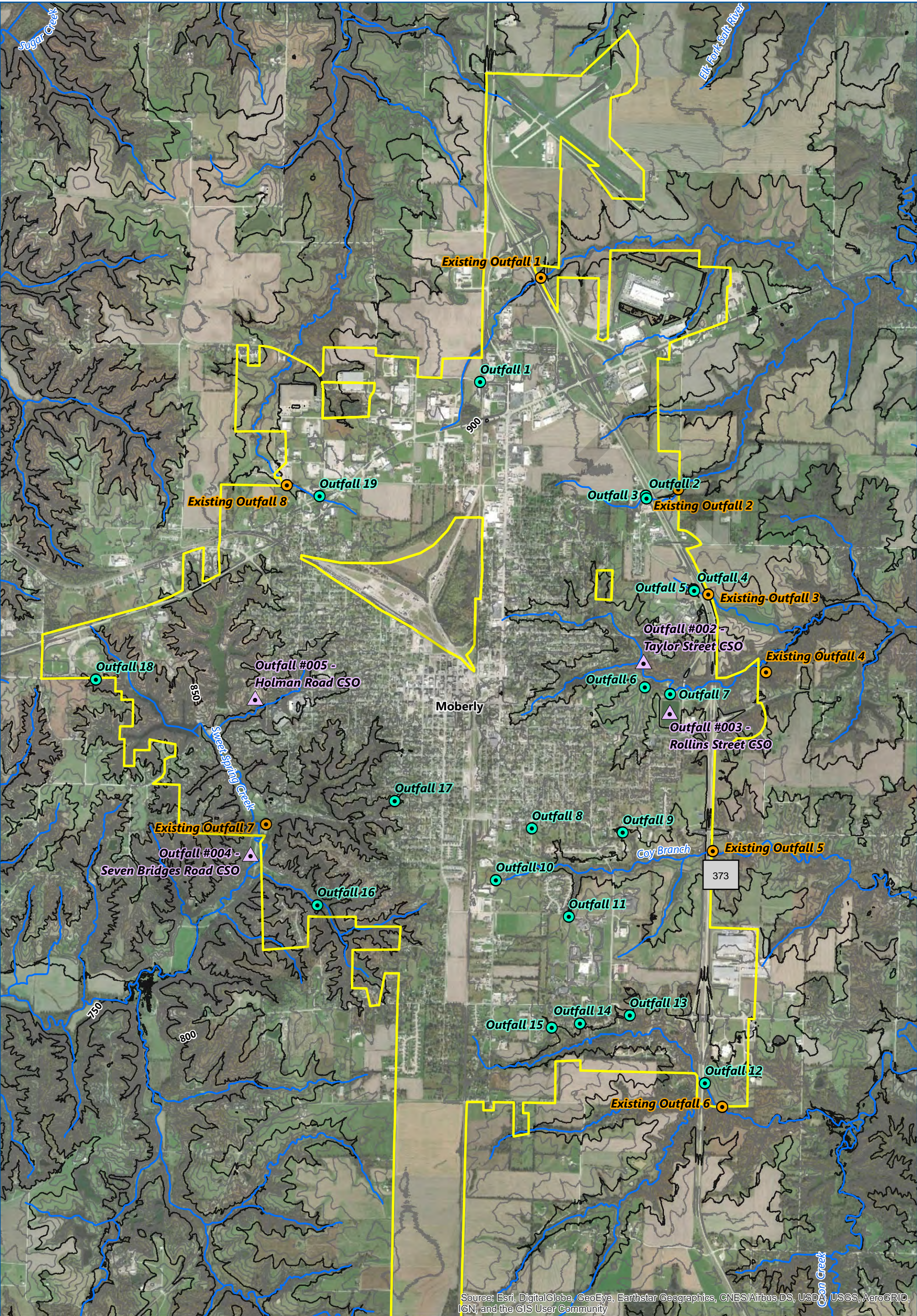
Table 2 New and Recommended Outfalls and Location Data

Outfall	Latitude	Longitude	Northing	Easting
Outfall #1	39.4438919100	-92.4356272600	1314663.51800	1658595.76200
Outfall #2	39.4349428027	-92.4187611349	1311407.86000	1663361.75400
Outfall #3	39.4347522118	-92.4186753925	1311338.46400	1663386.03300
Outfall #4	39.4275576337	-92.4138551980	1308719.27434	1664749.95433
Outfall #5	39.4274803181	-92.4138157183	1308691.12463	1664761.13304
Outfall #6	39.4198616297	-92.4188547619	1305914.88300	1663340.25000
Outfall #7	39.4193398413	-92.4162672727	1305725.50200	1664071.39400
Outfall #8	39.4087674705	-92.4303522776	1301871.39800	1660095.31300
Outfall #9	39.4084300844	-92.4211034938	1301750.66400	1662708.62200
Outfall #10	39.4047116099	-92.4340243932	1300393.37500	1659058.85300
Outfall #11	39.4018162559	-92.4265951112	1299340.43700	1661158.94200
Outfall #12	39.3887017097	-92.4127273553	1294567.29400	1665082.22100
Outfall #13	39.3940471351	-92.4203849338	1296512.22400	1662916.27000
Outfall #14	39.3934263806	-92.4254498918	1296284.90800	1661485.07500
Outfall #15	39.3930886900	-92.4283153100	1296161.25800	1660675.38400
Outfall #16	39.4027355400	-92.4521996200	1299670.40500	1653923.60900
Outfall #17	39.4109356000	-92.4443177100	1302658.34500	1656148.95600
Outfall #18	39.4205053800	-92.4747562900	1306140.04300	1647547.96500
Outfall #19	39.4349030643	-92.4519731598	1311386.66500	1653981.36400


The coordinate system used is NAD83 State Plane Missouri Central (in feet).




Figures



DRAFT





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community




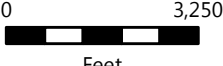
-  Existing Outfall Location
-  Proposed Outfall Location
-  Combined Sewer Overflow Locations (Approximate)

-  National Hydrography Dataset (NHD) Flowline
-  Municipal Boundary

Surface Elevation Contours

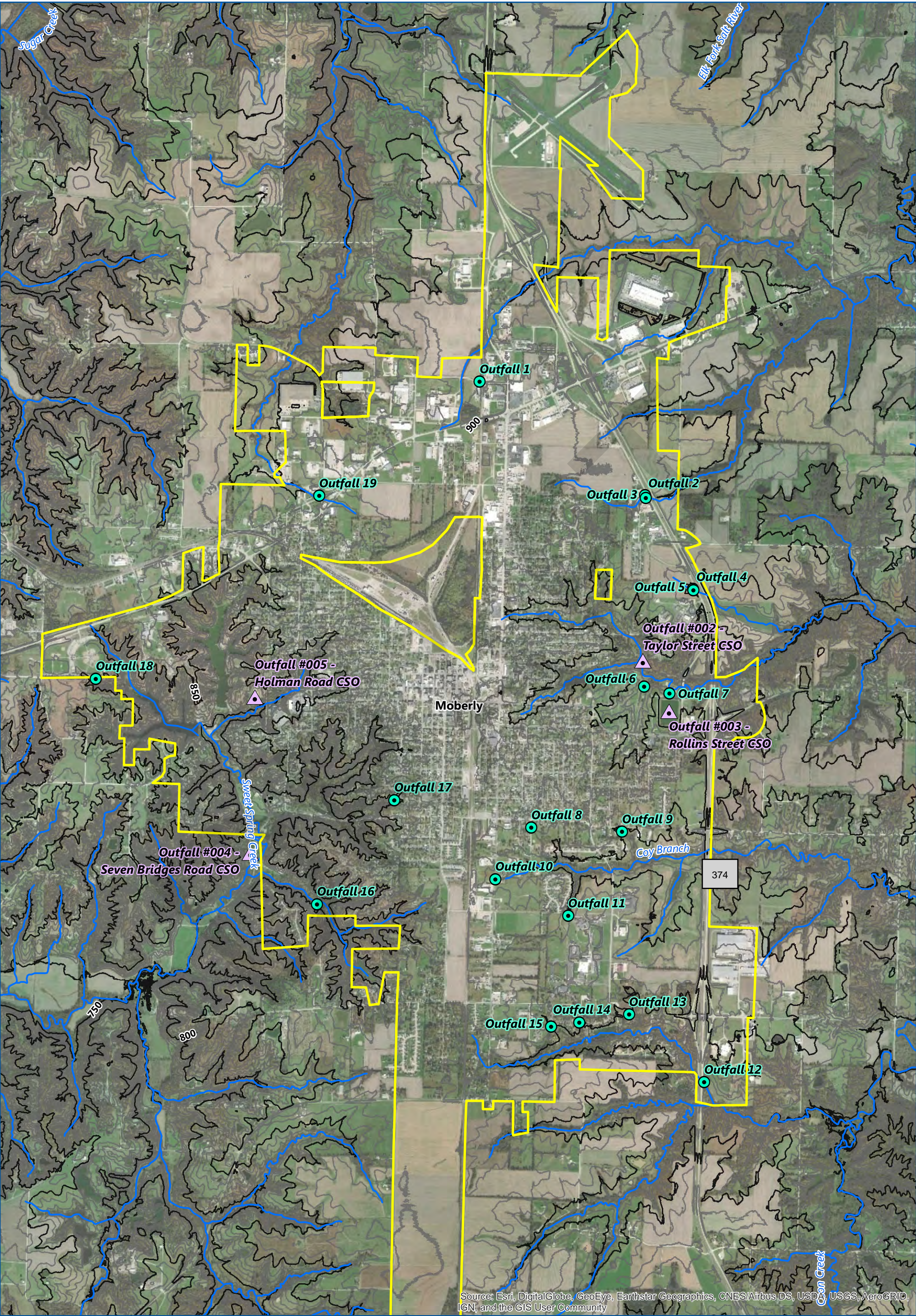
-  50 foot
-  10 foot









0 3,250
Feet





EXISTING AND PROPOSED OUTFALLS
City of Moberly
Moberly, MO
FIGURE 1





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



-  Proposed Outfall Location
-  Combined Sewer Overflow Locations (Approximate)
-  National Hydrography Dataset (NHD) Flowline

-  Municipal Boundary
-  Surface Elevation Contours
 -  50 foot
 -  10 foot



Feet

MOBERLY MS4 OUTFALLS
City of Moberly
Moberly, MO

FIGURE 2

Attachment E

Department Trainings

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Municipal training program: All training is administered annually by the Stormwater Coordinator

Department	Training Title	Training format
Parks	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Tracks 1 and 5	DVD from North Central TX Council of Governments
Street Department	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Tracks 1,2,3, and 4	DVD from North Central TX Council of Governments
Fire Department	Illicit Discharge Detection and Elimination and Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Police Department	Illicit Discharge Detection and Elimination	DVD from North Central TX Council of Governments
Water Department	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Wastewater Department	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Stormwater	Illicit Discharge Detection and Elimination and Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do All tracks	DVD from North Central TX Council of Governments
Cemetery	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Animal Shelter	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Airport	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Track 1	DVD from North Central TX Council of Governments
Distribution and Collections Department	Municipal Employee Training Series: Preventing Storm Water Pollution: What We Can Do Tracks 1 and 4	DVD from North Central TX Council of Governments

Attachment F

Missouri DNR MS4 Reporting Form MO 780-1846

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
STORMWATER MANAGEMENT PLAN REPORT**

FOR OFFICE USE ONLY

WS #3.

PROJECT ID NUMBER

DATE RECEIVED

Part A – MS4 PERMIT HOLDER INFORMATION

1. MS4 NAME	2. NPDES PERMIT NUMBER	3. MS4 UNIQUE ID NO.	
4. ADDRESS	5. CITY	6. STATE	7. ZIP CODE
8. TELEPHONE NUMBER WITH AREA CODE	9. EMAIL		
10. NAME OF MS4 CONTACT PERSON			

11. Have any areas of the MS4 been added or removed from the MS4 jurisdiction due to annexation or other legal means since the most recent permit application (renewal, new, modification), or most recent MS4 stormwater management plan report?

☐ Yes ☐ No

If yes, please include a map along with a brief description as an attachment.

Part B – REPORTING PERIOD

1. Is your MS4 subject to a TMDL?

☐ Yes ☐ No

If yes, you are required to submit the MS4 report annually. Reports are due Feb. 28 each year. For the first reporting period, the beginning date will be June 13, 2016, and the ending date will be Dec. 31, 2016. All other annual reports shall cover the reporting period of Jan. 1 to Dec. 31 each year.

2. Is your MS4 new permitted (i.e., is this your first MS4 permit)?

☐ Yes ☐ No

If yes, you are required to submit the MS4 stormwater management plan report annually. Reports are due Feb. 28 each year. For the first reporting period, the beginning date will be the date of issuance of the permit and the ending date will be Dec. 31, 2016. All other annual reports shall cover the reporting period of Jan. 1 to Dec. 31 each year.

3. Is your MS4 a previously permitted MS4 and not subject to a TMDL?

☐ Yes ☐ No

If yes, you are required to submit the MS4 stormwater management plan report biennially (i.e., once every two years). Reports are due Feb. 28 every odd year. The first report will be due February 2017, and will cover the reporting period from June 13, 2016, to Dec. 31, 2016. All other reports shall cover the reporting period of Jan. 1 of the first year to Dec. 31 of the second year.

4. If you are part of a co-permitted MS4 permit, submit combined MS4 stormwater management plan reports, and one or more of the co-permitted MS4s have annual reporting based on the above criteria, then submit your MS4 stormwater management plan report annually by Feb. 28 of each year.

If you are part of a co-permitted MS4 permit and do not submit combined MS4 stormwater management plan report, then each MS4 co-permittee will submit their MS4 stormwater management plan report based on the above criteria.

5. Reporting Period:

BEGINNING:

ENDING:

Part C – STORMWATER MANAGEMENT PLAN REPORT PROGRESS AND COMPLIANCE

As an attachment, please provide information for each of the items below. Provide informative data, success stories, and experiences that support the successful implementation of your stormwater management plan report.

1. Describe the status of compliance with permit conditions for the permitted MS4.
2. Provide information regarding the progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable to the MS4.
3. If another governmental entity implements any best management practice or minimum control measure, please provide the following:
 - a. Name of the government entity;
 - b. Name of the primary contact for the government entity;
 - c. Contact information (i.e., address, city, ZIP code, state, and phone number); and
 - d. Specific best management practices or minimum control measures being implemented by the government entity.

It is the responsibility of the permittee to provide all information under this report regardless if best management practices or minimum control measures are being implemented by another governmental entity. If a complete minimum control measure is being implemented by an alternative governmental entity, then only indicate the best management practice under the minimum control measure.

4. Provide a summary of any stormwater activities and known construction activities that will be covered under the authority of the MS4 permit that are scheduled to begin during the next reporting period.
5. Provide a description of any changes to the stormwater management plan report, best management practices, measurable goals, and the iterative process that have occurred during the covered reporting period.
6. Provide a list of best management practices that were evaluated during the covered reporting period, and provide information on how the best management practice was determined effective.
 - a. If any of the best management practices were determined to be ineffective, provide a summary on how the ineffective best management practice was resolved.
7. If any water samples were collected and analyzed during the covered reporting period by the permitted MS4 or on behalf of the permitted MS4, please complete Part D – Water Sample(s) Analysis.

Part D – WATER SAMPLE(S) ANALYSIS

PARAMETER OR INDICATOR	FREQUENCY	RESULT	DRY WEATHER SAMPLE?	WET WEATHER SAMPLE?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

1. Are any of the parameters being sampled due to the MS4 being subject to an established or approved Total Maximum Daily Load?
☐ Yes ☐ No

If yes, please indicate the parameter/pollutant.

2. Does the data support water quality attainment or support trend data toward water quality attainment?

☐ Yes ☐ No

If yes, please describe.

Part E – TOTAL MAXIMUM DAILY LOAD (TMDL) ASSUMPTIONS AND REQUIREMENTS ATTAINMENT PLAN

1. Is your MS4 subject to an established or approved TMDL? If no, please indicate "No" below and do not complete any other portion of the TMDL Assumptions and Requirements Attainment Plan portion of this report.

☐ Yes ☐ No

2. Has your TMDL Assumptions and Requirements Attainment Plan been completed and submitted? If no, please provide a summary as an attachment on the progress toward submitting and implementing the TMDL Assumptions and Requirements Attainment Plan.

☐ Yes ☐ No

3. Has your TMDL Assumptions and Requirements Attainment Plan received approval from the department? If yes, please provide a summary of the status of the plan and include implementation status of identified best management practices and measurable goals along with any changes to best management practices or measurable goals (if applicable)..

☐ Yes ☐ No

4. Does the TMDL Assumptions and Requirements Attainment Plan incorporate Integrated Planning? If yes, please provide a summary of the status of the Integrated Plan.

☐ Yes ☐ No

PART F – SUBMIT REPORT TO:

Missouri Department of Natural Resources
Water Protection Program
MS4 Program Coordinator
P.O. Box 176
Jefferson City, MO 65102-0176

PART G - CERTIFICATION

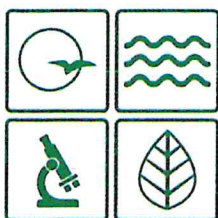
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OR PERMITTEE (LEGALLY RESPONSIBLE PERSON)

DATE SIGNED

NAME (PRINTED OR TYPED)

TITLE



Missouri Department of

NATURAL RESOURCES

dnr.mo.gov

Michael L. Parson, Governor

Dru Buntin, Acting Director

5.110 Moberly Phase II MS4
 Randolph County
 #MO-R04C004 (Formerly #MO-R040030)

October 5, 2021

City of Moberly
 101 West Reed St
 Moberly, MO 65270

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, the Missouri Department of Natural Resources has issued and is enclosing a General State Operating Permit for Moberly Phase II MS4.

Please review the requirements of your permit. Monitoring reports that may be required by this permit must be submitted on a periodic basis. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent data about the NPDES program. All general covered permitted facilities under this master general permit shall comply with the department's requirements for electronic reporting.

Please note that outfall feature #101 has been designated as your primary outfall for reporting purposes as outlined in *Section 5.3 MS4 SWMP Report* of your permit. As an existing MS4 and not subject to a TMDL you are required to submit your SWMP report on an annual basis as outlined in *Section 5.3.A* of your permit. All other outfalls identified in this permit are listed as representative outfalls and are only a subset of the MS4s outfalls. The permittee is responsible for mapping the location of all outfalls for incorporation into the SWMP as outlined in *Section 4 Storm Water Management Program* of your permit.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to satisfy the permit requirements, an appointment can be set up by contacting your local regional office at (660) 385-8000. These visits are called Compliance Assistance Visits (CAV) and focus on explaining the requirements to the permit holder.



Moberly Phase II MS4
October 5, 2021
Page 2

This general permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits and letters of approval for the discharges described within. In all future correspondence regarding this permit, please refer to your general permit number as shown on page one of your permit.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Sections 644.051.6 and 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is: Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102, Phone: 573-751-2422, Fax: 573-751-5018, and website: www.oa.mo.gov/ahc.

Please be aware that this facility may also be subject to any applicable county or other local ordinances or restrictions. Please note the expiration date of this permit. If your permit is issued within 30 days of the expiration date of the attached permit, this letter also serves as a notification to resubmit an application for renewal or termination.

If you have questions, please contact Alyssa Grimes at (660) 385-8000 in the Northeast Regional Office, 1709 Prospect Drive, Macon, MO 63552.

Sincerely,

NORTHEAST REGIONAL OFFICE



Irene Crawford
Regional Director

Enclosure: Standard Conditions Part I

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

General Operating Permit

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No	MOR04C004
Owner:	City of Moberly
Address:	101 West Reed St Moberly, MO 65270
Continuing Authority:	City of Moberly 101 West Reed Street Moberly, MO 65270
Facility Name:	Moberly Phase II MS4
Facility Address:	101 West Reed St MOBERLY, MO 65270
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream - ID#:	See Page 2
USGS# and Sub Watershed#:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein.

FACILITY DESCRIPTION All Outfalls SIC #9511
All Outfalls - Stormwater discharges from Regulated Phase II Municipal Separate Storm Sewer Systems.
Comprehensive permit

SIC 9511/NAICS 924110

This permit authorizes only wastewater, including storm water, discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System, it does not apply to other regulated areas. This permit may be appealed in accordance with RSMo Section 644.051.6 and 621.250, 10 CSR 20-6.020, and 10 CSR 20-1.020.

October 01, 2021
Issue Date



Edward B. Galbraith, Director
Division of Environmental Quality

September 30, 2026
Expiration Date



Irene Crawford, Regional Director
Northeast Regional Office

Outfall Number: 001
Legal Description: Sec. 25, T54N, R14W, Randolph County
UTM Coordinates: 548561.145/4366190.188
Receiving Stream: Tributary of Elf Fork of Salt River(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 002
Legal Description: Sec. 31, T54N, R13W, Randolph County
UTM Coordinates: 550020.941/4365203.742
Receiving Stream: Tributary of Elf Fork of Salt River(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 003
Legal Description: Sec. 31, T54N, R13W, Randolph County
UTM Coordinates: 550029.937/4365181.516
Receiving Stream: Tributary to Elk Fork River(C)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 004
Legal Description: Sec. 31, T54N, R13W, Randolph County
UTM Coordinates: 550441.171/4365498.353
Receiving Stream: Tributary to Elk Fork Salt River(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 005
Legal Description: Sec. 31, T54N, R13W, Randolph County
UTM Coordinates: 550450.944/4364379.299
Receiving Stream: Tributary to Trib. to Coon Cr.(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 006
Legal Description: Sec. 06, T53N, R13W, Randolph County
UTM Coordinates: 550024.222/4363532.312
Receiving Stream: Tributary to Trib. to Coon Cr.(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 007
Legal Description: Sec. 06, T53N, R13W, Randolph County
UTM Coordinates: 550245.732/4363474.739
Receiving Stream: Tributary to Trib. to Coon Cr.(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 008
Legal Description: Sec. 12, T53N, R14W, Randolph County
UTM Coordinates: 549042.087/4362294.272
Receiving Stream: Tributary to Coy Branch(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 009
Legal Description: Sec. 07, T53N, R13W, Randolph County
UTM Coordinates: 549837.638/4362261.886
Receiving Stream: Tributary to Coy Branch(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 010
Legal Description: Sec. 12, T53N, R14W, Randolph County
UTM Coordinates: 548729.032/4361841.516
Receiving Stream: Tributary to Coy Branch(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 011
Legal Description: Sec. 12, T53N, R14W, Randolph County
UTM Coordinates: 549369.853/4361525.391
Receiving Stream: Tributary to Coy Branch(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 012
Legal Description: Sec. 18, T53N, R13W, Randolph County
UTM Coordinates: 550575.192/4360077.376
Receiving Stream: Tributary to Coon Creek(C)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 013
Legal Description: Sec. 07, T53N, R13W, Randolph County
UTM Coordinates: 549910.557/4360666.022
Receiving Stream: Tributary to Coon Creek(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 014
Legal Description: Sec. 13, T53N, R14W, Randolph County
UTM Coordinates: 549475.052/4360593.844
Receiving Stream: Tributary to Coon Creek(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 015
Legal Description: Sec. 13, T53N, R14W, Randolph County
UTM Coordinates: 549227.507/4360553.204
Receiving Stream: Tributary to Coon Creek(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

Outfall Number: 016
Legal Description: Sec. 11, T53N, R14W, Randolph County
UTM Coordinates: 547165.341/4361612.704
Receiving Stream: Tributary to Sweet Spring Creek(C)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 10280203 - 0301

Outfall Number: 017
Legal Description: Sec. 02, T53N, R14W, Randolph County
UTM Coordinates: 547838.125/4362527.211
Receiving Stream: Tributary to Sweet Spring Creek(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 10280203 - 0301

Outfall Number: 018
Legal Description: Sec. 03, T53N, R14W, Randolph County
UTM Coordinates: 545211.019/4363574.011
Receiving Stream: Tributary to Old Reservoir(U)
First Classified Stream - ID#: Old Reservoir (L1) 7165.00
USGS# and Sub Watershed#: 10280203 - 0301

Outfall Number: 019
Legal Description: Sec. 35, T54N, R14W, Randolph County
UTM Coordinates: 547163.118/4365183.210
Receiving Stream: Tributary to Sugar Creek Lake(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 10280203 - 0204

Outfall Number: 101
Legal Description: Sec. 01, T53N, R14W, Randolph County
UTM Coordinates: 548459.791/4363539.086
Receiving Stream: Tributary to Trib. to Coon Cr.(U)
First Classified Stream - ID#: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed#: 07110006 - 0302

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Part 7. Standard Permit Conditions

PART 1. PERMIT COVERAGE AND APPLICABILITY

This permit is for coverage under this Comprehensive General Permit for Phase II MS4s

- 1.1.A** Permit Area: This Missouri State Operating Permit (permit) covers all areas served by a Municipal Separate Storm Sewer System (MS4) for which the applicant is identified as the Continuing Authority.
The Permit Area may change based upon areas incorporated into or removed from the permittee's jurisdictional area during the term of this permit, or expansion of the Urbanized Area. Areas added shall be covered under this permit and noted in the Stormwater Management Plan.
- 1.1.B** Applicability: This permit authorizes discharges of stormwater from regulated MS4s, as defined in 10 CSR 20-6.200(D)24. This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, or stormwater associated with industrial activity provided such discharges are authorized under separate National Pollutant Discharge Elimination System (NPDES) permits or no exposure certification as defined in 10 CSR 20-6.200(C).
The permittee, or co-permittee, is authorized to discharge under the terms and conditions of this general permit if the permittee:
1. Owns or operates a regulated Small MS4 as defined in 10 CSR 20-6.200 (D)16;
 2. Also is located in the Urbanized Area (UA) as defined by the most recent U.S. Census for which the applicant is identified as the Continuing Authority with a population of at least 1,000;
 3. OR inside the municipal corporate limits of a jurisdiction with a population of at least ten thousand (10,000) and a population density of one thousand (1,000) people per square mile or greater;
 4. OR is inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality.
- 1.1.C** Categories of Regulated Small MS4s under this comprehensive permit.
This comprehensive permit categorizes MS4s by the following categories, or Groups, based on the population served as determined by the most the recent Decennial Census at the time of permit issuance, the type of Regulated MS4, and the co-permittee situation.

Group A	Group B	Group C
Traditional Small MS4s (cities) that serve a population of less than 10,000 within a UA; OR	Traditional Small MS4s that serve a population of at least 10,000 but less than 40,000; OR	Traditional Small MS4s that serve a population of 40,001 or more; OR
Class 2 counties; Non-traditional such as Universities, Federal facilities.	Class 1 counties	Co-permit Small MS4s

This is the Comprehensive General Permit to cover Group A, B, and C MS4s.

The population of a Small MS4 may change during the permit term. However, the Group designation of a regulated MS4 will not change during the permit term based on population fluctuation.

1. The Group designation of a regulated MS4 is based on the most recent Decennial Census at the time of permit issuance. Results of the national Census held during a permit term will not affect the Group of an MS4 until the next permit renewal unless the permittee joins another MS4 as co-permittee.
2. For the purpose of this section "serve a population" means the residential population within the regulated portion of the Small MS4 based on the most recent Decennial Census.

- 1.1.D** Authorized discharges: The following are types of discharges authorized by this permit:
1. *Stormwater discharges.* This permit authorizes stormwater discharges to waters of the state from the regulated MS4 identified in Section 2.1.A except as excluded in Section 2.1.F of this permit.
 2. *Non-Stormwater discharges.* The permittee is authorized to discharge the following non-stormwater sources provided the permitting authority has not determined these sources to be substantial contributors of pollutants to the permittee's MS4:
 - Water line flushing;
 - Landscape irrigation and lawn watering;
 - Diverted stream flows;
 - Rising ground waters and springs;
 - Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(b)(20));
 - Discharges from potable water sources;

- Foundation or footing drains;
- Air conditioning condensation;
- Irrigation water;
- Water from crawl space pumps;
- Individual residential car washing;
- Flows from riparian habitat and wetlands;
- Street and sidewalk wash water, water used to control dust, that does not use detergents;
- Dechlorinated and uncontaminated residential swimming pool discharges; and
- Discharges or flows from emergency firefighting activities. Fire-fighting activities do not include washing of trucks, run-off water from training activities, and similar activities.

1.1.E In the event the regulated MS4 has an oil water separator which is used to exclusively treat stormwater; this permit authorizes the operation of oil water separators solely for the treatment of stormwater. The oil water separators must be appropriately operated and sized per manufacturer's or engineering specifications. The specifications and operating records must be made accessible to Department staff upon request. Oil water separator sludge is considered used oil; sludge must be disposed of in accordance with 10 CSR 25-11.279.

PART 2. PERMIT RESTRICTIONS AND EXEMPTIONS

2.1.A Limitations on coverage: The permittee, shall prohibit non-stormwater discharges and stormwater discharges that combine with sources of non-stormwater into the MS4, except where:

1. Non-stormwater discharges are in compliance with a separate NPDES permit; and
2. Authorized by Section 1.1.D of this permit.

2.1.B This operating permit does not affect, remove, or replace any requirement of the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; or the Resource Conservation and Recovery Act. Determination of applicability to the above mentioned acts is the responsibility of the permittee. Additionally, this permit does not establish terms and conditions for runoff resulting from silvicultural activities listed in Section 402(l)(3)(a) of the Clean Water Act.

2.1.C Discharge Limitations

1. The permittee shall implement Best Management Practices (BMPs) via an iterative process to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) into the MS4 for the goal of attainment with Missouri's Water Quality Standards.
2. The permittee shall implement and enforce a Stormwater Management Program per the requirements listed in this operating permit in accordance with section 402(p)(3)(B)(iii) of the CWA, corresponding NPDES regulations, 40 CFR 122.34, 40 CFR 122.28(d)(2), and in accordance with the Missouri Clean Water Law (MCWL) and its implementing regulations under 10 CSR 20-6.200.
3. The permittee shall comply with all provisions and requirements contained in this permit and with their individual Stormwater Management Program including plans, ordinances, and schedules developed in fulfillment of this permit.
4. If the Department determines a regulated MS4 is causing or contributing to instream excursions of Missouri's Water Quality Standards, then the Department may require corrective action(s) or require an application for a site-specific permit to ensure that BMPs are being implemented via an iterative process to reduce pollutants to the MEP.
5. Newly designated regulated MS4s applying for coverage under this general permit and discharging to waterbodies or watersheds subject to an existing EPA approved or established TMDL may be denied coverage under this general permit and required to apply for and obtain a site-specific operating permit for stormwater discharges from their regulated MS4.

2.2 Authorization to Discharge and Application Requirements

2.2.A Authorization to discharge stormwater from a regulated MS4 requires each permittee (existing and recently designated regulated MS4s) to submit a complete application for the MS4 general permit. The permittee shall submit their application on the latest version of the application form(s); either Form K, or Form L and Form M.

2.2.B The application shall be signed and dated by an authorized signatory.

1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.

2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in Section 2.2.B.1 of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative only if the authorization is made in writing by a person designated in Section 2.2.B.1 of this permit.

2.2.C Existing regulated permittees seeking renewal of their MS4 permit shall submit a renewal application within 180 days prior to the expiration date of this operating permit unless the permittee has been notified by the Department that an earlier application is required in accordance with 10 CSR 20-6.200 (1)(D)24.B.

2.2.D Newly designated regulated MS4s shall submit their permit application within 180 days following notification by the Department that permit coverage is required.

PART 3. STORMWATER MANAGEMENT PROGRAM AND PLAN

3.1 Stormwater Management Program

3.1.A To the extent allowable under state and local law, a Stormwater Management Program must be developed, implemented, and enforced according to the requirements of this general permit. This permit includes specific terms and conditions, which are the requirements needed to meet the MS4 regulatory requirements.

1. **Existing permittees** shall assess program elements that were described in the previous permit, modify as necessary, and/or implement new elements, as necessary.
2. **Newly regulated permittees** shall have the program fully implemented within 5 years of issuance of their permit.

3.1.B As part of the Stormwater Management Program, the permittee shall update or develop a document, with appropriate appendices and supplemental attachments explaining the Stormwater Management Program. Permittees shall create and maintain this written Stormwater Management Plan (SWMP) describing schedules, procedures, contacts or other items listed under Part 4 of this permit. This document may be electronic.

1. The SWMP shall be maintained by the MS4 Operator to ensure consistency with the implementation, continuity of the Stormwater Management Program, and iterative reviews of programmatic BMPs and procedures.
2. The SWMP does not go through Department approval and is not incorporated into this permit.
3. The SWMP shall be updated or developed within 90 days after the renewal of the permit.

3.1.C The MS4 Operator may add supplemental items to the SWMP. These items include but are not limited to:

- Maps;
- Standard operating procedures (SOPs);
- Inspection forms;
- Sample data;
- Operations and Maintenance Manual;
- Website or social media account tracking;
- Stream Team Activity Reports;
- Tracking and evaluation documents; and
- Documentation of agreements for co-permittees and/or cooperative agreements.

3.1.D Permittees shall implement programmatic BMPs consistent with the provisions of this permit to achieve compliance with the standard of reducing pollutants to the maximum extent practicable per 40 CFR 122.34.

3.1.E The MS4 Operator may replace or modify ineffective BMPs with effective BMPs. If the name of a MS4 contact changes, that may be updated on the next Stormwater Management Program Report and/or via email to the Department at MS4@dnr.mo.gov.

3.2 Sharing Responsibility

3.2.A Co-permittees agreements.

1. Implementation of one or more of the minimum control measures may be shared with another governmental entity or the governmental entity can assume responsibility for the measure via the co-permittee option if:
 - a) The co-permittee has a MS4 located within or partially within an Urbanized Area (UA) as determined by the most recent Bureau of Census, which can include, but is not limited, to: municipalities, county, military bases, large hospitals, prison complexes, universities, sewer districts, and highway departments;
 - b) The co-permittee, in fact, implements the control measure(s);
 - c) The specific control measure, or component of a control measure, is at least as stringent as the corresponding permit requirements;

- d) The co-permittee agrees to implement the control measure on the other permittee's behalf; and
 - e) Written acceptance of this obligation is required.
2. This co-permittee obligation and written acceptance, shall be described and maintained as part of the SWMP.
 3. If the co-permittee agrees to report on the control measure, the co-permittee shall cooperate with the reporting requirements contained in Section 5.3 of this permit.
 4. If one co-permittee fails to implement the control measures, then that co-permittee shall remain liable for any discharges due to that failure to implement. Additionally, the Department may require corrective actions(s), require an application for a site-specific permit, or require the co-permittee to apply and obtain their own Phase II MS4 general permit.

3.2.B Other agency agreements. Implementation of one or more of the minimum control measures or BMPs may be contracted out to another entity or organization, such as a non-profit organization or watershed organization. The MS4 Operator may grant responsibility for the MCM or BMP. The agreement must be described in the SWMP detailing which BMPs are being assumed by the other entity or organization. Written agreements between another entity or organization stipulating arrangements and responsibilities for meeting permit requirements shall be made available to the Department upon request. The permittee is responsible for oversight to ensure compliance with this permit.

3.3 Reviewing and Updating the Stormwater Management Program

3.3.A The MS4 Operator shall conduct an annual review of their Stormwater Management Program. This is recommended to be in conjunction with preparation of the MS4 Stormwater Management Program Report required under Section 5.

3.3.B Changes to the Stormwater Management Program requested by the Department must be made in writing, set forth a time schedule for the permittee to develop the changes, and offer the permittee opportunities to propose alternative program changes to meet the objective of the requested modification. All changes required by the Department will be made in accordance with 10 CSR 20-6.200. The Department may require changes to the Stormwater Management Program as needed to:

1. Address impacts on receiving water quality caused or affected by discharges from the MS4.
2. Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements; or
3. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the MCWL and the federal Clean Water Act (CWA).

3.3.C In the event of a transfer of ownership, change in Continuing Authority, or change in responsibility for Stormwater Management Program implementation; the permittee shall implement the Stormwater Management Program on all new areas added to the permittee's portion of the MS4 (or for which the permittee becomes responsible for implementations of stormwater quality controls) as expeditiously as practicable, but not later than one (1) year from the addition of the new areas.

PART 4. MINIMUM CONTROL MEASURES

Entities seeking coverage under this general permit shall develop and implement a Stormwater Program that includes the following six (6) Minimum Control Measures (MCMs).

1. All six MCMs apply to all traditional MS4s (cities and counties) regulated under this permit.
2. For non-traditional MS4s (universities, hospital complexes, prisons, and federal facilities) or MS4s in a co-permit that do not have responsibility over all MCMs. The permittee shall document in the SWMP and on each MS4 Stormwater Management Program Report which MCMs are not applicable. Contact the Department for any questions regarding applicability of MCMs.

4.1 MCM 1. Public Education and Outreach on Stormwater Impacts

The MS4 Operator shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

The public education and outreach program shall, at a minimum include the following:

- 4.1.A** The MS4 Operator shall target specific audiences who are likely to have significant stormwater impacts.
1. Traditional MS4s (cities and counties) shall address the residents being served by the MS4;
 2. Non-traditional MS4s shall address the community served by the MS4 as listed below:
 - a) Universities shall target the faculty, other staff, and students;
 - b) Military bases shall target military personnel (and dependents), and employees (including contractors).
 - c) Prison complexes or other multi-building complexes shall target staff and applicable contractors.

3. Additional audiences within the MS4 service area (such as, but not limited to, those listed in **Table I**) shall be addressed as listed below:

Group A: No requirement for additional audiences
Group B: A minimum of one (1) additional audiences
Group C: A minimum of two (2) additional audiences

The target audiences may remain the same for the entire permit cycle or may change if the tracking and adaptive management reviews show a new target may be better for the MS4. Any changes shall be stated and explained in the MS4 Stormwater Management Program Report.

Table I -Target Audiences

<ul style="list-style-type: none"> • Schools, educational organizations, or youth service and youth groups; • Businesses, including commercial facilities, home-base and mobile businesses; • Institutions or formal organizations such as churches, hospitals, service organizations; • Developers or construction site operators; • Homeowner or neighborhood associations; • Industrial facilities; • Local government; • Contractors; • Visitors/ tourist; and • Other target group, noted in the MS4 Stormwater Management Program Report.

- 4.1.B** The MS4 Operator shall target specific pollutant(s) in the permittee's education program (such as, but not limited to, those listed in **Table II**).

Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit. The same pollutant may be used for more than one target audience, the target pollutant(s) may change annually as needed.

Table II- Pollutants/ sources

<ul style="list-style-type: none"> • Grass clippings & leaf litter; • Fertilizer & pesticides; • Litter, trash containment, balloon releases; • Dumping of solid waste; • Illegal disposal of household hazardous waste; • Pet waste; • Failing septic systems; • Swimming pool discharge, including salt water pools; • De-icing/ rock salt usage/ storage; • Oil, grease, fluids from vehicles; • Sediment runoff from construction/land disturbance; • Unauthorized discharge of restaurant waste; • Power washing; • Unauthorized discharge of industrial waste; • Vehicle washing; and • Wash water/ grey water.

- 4.1.C** The MS4 Operator must utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the selected target audiences.

The message delivered by these BMPs needs to be applicable to the target audience and relate to the target pollution. The distribution of the BMPs needs to be effective, and when possible associated with the target audience or pollutant (such as a swimming pool water disposal flyer when applying for a swimming pool permit). BMPs which are ongoing throughout the year or permit cycle may be counted as one annual BMP. The permittees SWMP shall explain how each BMP relates to the

target pollutant and target audience. The MS4 Operator may change BMPs during the permit cycle if determined appropriate through tracking and adaptive management reviews show a different BMP may be more effective for the MS4. Any changes shall be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.

1. Using **Table III**, over the permit term the MS4 Operator shall implement a minimum of the following, including the tracking and adaptive management processes:

Group A: Each permit cycle; two (2) education and outreach BMPs from Table III.

Group B: Each permit cycle; four (4) education and outreach BMPs from Table III.

Group C: Each permit cycle; five (5) education and outreach BMPs from Table III.

Table III - Outreach and Education BMPs

BMPs:	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Information on the MS4 Operator's website;	Maintain a webpage with up to date information, & working links. All links shall be checked, and the page shall be updated as necessary at minimum annually. Must be maintained the entire year.	The number of hits shall be tracked. The MS4 Operator shall use this to see which messages get reactions, and if certain messages may need more education.
Social Media posts, social media campaign;	Post a minimum of four (4) times a year, on a minimum of one social media platform. The messages shall address ways attendees can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. The messages shall be seasonally appropriate. Must be continued for the full year.	The number of views, impressions, and other interactions shall be tracked. The MS4 Operator shall use this to see which messages get reactions, and if certain messages may need more education.
Maintain, or mark storm inlet with "No Dumping – Drains to Stream" or similar message. In addition to, or instead of, permanent wording cast into the structure of the inlet;	Placard, stencil, or paint, a minimum of 10% of all known stormwater inlets in the MS4 area per year.	Number of inlets, the location of the inlets and how they were marked shall be tracked. These areas shall be noted on MCM #3 dry weather screenings, and illicit discharge investigations as a method to determine if the markings are effective or if areas could benefit from the markings.
Require installation of permanent embossed, or precast inlets with "No Dumping-Drains to Stream" or similar message.	Requirement for all new inlets in the MS4 area.	Number of inlets, the location of the inlets shall be tracked. These areas shall be noted on MCM #3 dry weather screenings, and illicit discharge investigations as a method to determine if the markings are effective or if areas could benefit from the markings
Media/ advertising campaign: Billboard; Bus shelter/ bench; radio/ television/ movie theatre/ areas of high visibility.	Develop topics that address activities and/or pollutants of concern. Advertisement must be active for a minimum of three weeks; OR must have an estimated exposure for the duration of the campaign that is 2 times the most recent U.S. Census Bureau decennial population value for the permit area.	To the extent possible, evaluate the pollutant before the advertising campaign, and again after to see if there has been a change. The dates, time, and/or estimated media exposure for each spot broadcast shall be documented. Consider including a mechanism to track active response such as a QR Code, following the social media account(s) or a website to visit. Track those responses

		to determine if the advertisement was effective in reaching people.
Publish articles in local newsletter, may be electronic;	Develop topics that are group specific and address activities and or pollutants of concern at a seasonally appropriate time. A minimum of two articles annually shall be published or emailed.	To the extent possible evaluate the pollutant before the article, and again after to see if there has been a change. Consider including a mechanism to track active response such as following the social media account or a website to visit. Track those responses to determine if the article was effective in reaching people.
Permanent Stormwater related signage;	Place signage in a location where the message is relevant, and highly-visible to target audience. Signage will count as an annual BMP for the year it was put in place and for each subsequent year of this permit cycle as long as each of those years tracking is taking place to message effectiveness and to ensure the signage is maintained.	Evaluate the pollutant before the signage, and again after to see if there has been a change. Consider including a mechanism to track active response such as following on social media, a QR Code, or a website to visit. Track those responses to determine if the signage was effective in reaching people.
Promote, host, or develop educational meetings, seminars, or trainings;	The events shall address ways attendees can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. A minimum of two events shall be held, hosted or promoted annually. These events may address different pollutants/audiences.	Attendance, and any distributed education materials shall be tracked. This shall be used to gauge interest in the topic. Consider using a questionnaire or follow up survey to track if the attendees retained information or found the event beneficial.
Fact sheets/ brochures/ utility bill insert/ door hangers.	The sum of all fact sheets, brochures, bill inserts, handouts, or e-mails distributed in one year shall be at minimum equal to the most recent U.S. Census Bureau decennial housing units value for the permit area.	The applicable U.S. Census housing units value shall be recorded, and the amount of material shall be recorded. This may be a combination of materials, using a targeted approach to get the appropriate material to the applicable audience.
Paid membership in a regional or watershed group.	The organization must focus on stormwater runoff.	The group may enact BMPs on behalf of all members, the permittee must participate to ensure their MS4 has representation, and receives some of the educational BMPs.
Targeted education campaign, via mail, email, or in person.	Minimum of one annually OR with a specific event. (Examples: Sediment control with small building permit; leaf litter email during street sweeping season, or education brochure to all businesses conducting certain activity.)	Education material distributed, or amount of people contacted shall be tracked. Follow up on if noticeable behavior has changed.

4.1.D The MS4 Operator must create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) must have an effort to impact stormwater runoff by improving water quality.

1. Using **Table IV**, the MS4 Operator shall implement a minimum of the follow including the tracking and adaptive management processes:

Group A: Each permit cycle; one (1) involvement BMP from Table IV.

Group B: Each permit cycle; two (2) involvement BMPs from Table IV.

Group C: Each permit cycle; three (3) involvement BMPs from Table IV.

Co-permittees: Each permit cycle; one (1) involvement BMP in the boundaries of each co-permit.

Table IV Involvement BMPs

BMPs	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Stream/lake or Watershed clean-up events; Litter clean-up events such as Missouri Stream Team, Adopt-A-Spot, Adopt-A-Street, Adopt-A-Stream;	To be considered an event, the land area cleaned must be at minimum 2 acres, or 400 yards of stream/ streambank/ watershed, or 2 miles of road side. (These may be combined such as 1 acre of land and 200 yards of stream.)	Track the area or distance cleaned (by acre, yard or lane miles), the amount of waste removed (by tonnage, cubic yard, or Stream Team bag count) and the attendance. Use the waste measurements to determine if there are priority areas for litter entering stormwater, or areas for illegal dumping.
Habitat improvement; Tree planting; Invasive vegetation removal; Stream restoration.	To be considered an event, the project must be a minimum of .5 acres or 25 yards. These may be a combination. This may take place in streams, parks, areas adjacent to public waterways, and/or other green space.	Track the location(s) along with the amount planted or remove, or miles improved or restored. Analyzing the areas improved upon, the MS4 Operator shall see if there are opportunities to join the improve areas, or work on a watershed basis.
Volunteer water quality monitoring;	To be considered an event, the monitoring must be conducted at minimum once a year.	Record the sites for the volunteers, what parameters were measured/monitored, and the dates of the monitoring.
Hold events to train residents, or work a project for homeowner associations (HOAs), or other public groups. The event or training must cover stormwater related topics such as: building rain barrels; Fertilizer application training; Rain garden/ bio retention creation or maintenance; How to recognize illicit discharge activities and communicate observations to appropriate MS4 staff.	Provide one project or training at minimum annually.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.
School, public event, etc. educational display/booth; Provide information or displays that work to improve public understanding of issues related to water quality.	Provide one booth or display at minimum annually. The booth or display must be staffed by staff of the MS4 at minimum 50% of the time the event is open to the public.	Record the number of interactions, the overall attendance, or the number of hours the event was staffed. Record the topic covered, and any educational materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.

Stormwater related speaker series;	Provide a minimum of two sessions a year. These may be different speakers and/or audiences.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.
Ongoing yard waste collection, designated yard waste collection area, household hazardous waste collection, or street sweeping program.	Provide the service as an annual occurrence or at readily accessible location. For street sweeping, this shall be conducted at minimum twice a year.	Track the amount collected. If educational information is being used in conjunction with this activity track for changes due to the education. Tracking can be used with illicit discharge tracking, to determine if the rate of this type of discharges or dumping were reduced.
MS4 area wide stormwater survey.	A series of public survey to establish a baseline in the first year of the permit and then a minimum of annually throughout the permit cycle.	Use the same or similar questions to evaluate BMPs and/or full program effectiveness. Surveys can be done with utility bills, online, social media, or a combination. All participation should be tracked.

4.1.E The MS4 Operator shall create or support the involvement BMP(s) in Section 4.1.D. To be considered support given to the coordinating groups the MS4 Operator shall at minimum conduct the following or similar:

- Plan, or assist with planning, the event or activity;
- Contribute supplies, materials, tools, or equipment;
- Provide assistance from MS4 staff during the activity;
- Provide assistance with recruiting volunteers for events;
- Make a space available for projects, meetings, or events;
- Advertisement for the events;
- Supply disposal services;
- Arrange land or stream access;
- Financial support; and
- In-kind donations such as food.

4.1.F Using adaptive management as required in parts 4.1.A.3.d and 4.1.B.1.c, all MS4 Operators shall review their Public Education and Outreach on Stormwater Impacts Program, at minimum, annually and update implementation procedures and/or BMPs as necessary within the requirements of this permit.
This may be conducted when preparing the MS4 Stormwater Management Program Report for submittal to the Department.

4.2 **MCM 2. Public Participation**

The permittee shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the permittee's Stormwater Program.

This program must provide opportunities for public participation of the permittee's permit renewal and shall, at a minimum, comply with any state and local public notice requirements. Additionally, the program must provide opportunities for public participation in activities related to developing and implementing the Stormwater Management Program.

The public participation program shall, at a minimum include the following:

4.2.A The MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit, and description of the MS4s Stormwater Management Program (this may be the SWMP) prior to the submission of the renewal application to the Department.

- 4.2.B** As part of the public notice, if the MS4 Operator has a public website, the required items shall be posted on their website with a way to submit comments, along with the standard public notice methods for the MS4.
1. The permittee shall respond to comments received during the comment period.
 2. The MS4 Operator shall retain copies of any public comments and records of information submitted by the public received as part of the public notice process. These comments and responses shall be made available to the public or the Department upon request.
- 4.2.C** The MS4 Operator shall hold a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. This meeting shall be advertised at least thirty (30) days prior to the public meeting.
1. As part of the notice of public meeting, if the MS4 Operator has a public website, the MS4 Operator shall post on that site, along with the standard public notice methods for the MS4. The notice of the public informational meeting, including the date, time and location.
 2. The meeting must be held within the service area of the MS4. Co-permittees shall hold the meeting within the boundaries of each co-permittee.
- 4.2.D** The MS4 Operator shall have a publicly available method to accept public inquiries, or concerns, and to take information provided by the public about stormwater and stormwater related topics.
1. This method, or a combination of method, shall encompass all MCMs of this permit. This method may be a phone number, website comment form, voicemail box, an email address, social media platform, or a combination of these.
 2. All reports shall be tracked, recording the topic, location, and concern. This information can help identify pollutants of concern, priority areas, pollutant sources, educational needs, and other information the MS4 Operator may use to evaluate the Stormwater Management Program.
- 4.2.E** If the MS4 Operator utilizes a stormwater management panel or committee, the MS4 Operator shall provide opportunities for citizen representatives on the panel or committee. The attendance of the meeting shall be recorded.
- 4.2.F** If the permittee has a governing board such as; County Council, City Council, or Board of Curators, a representative of the MS4 Operator, who is familiar with the MS4 Stormwater Program, shall provide an update to the governing board. This shall be conducted at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.
- 4.2.G** **Existing permittees:** Shall evaluate their current program to ensure it is in compliance with this permit and promoted to the community. Existing permittees shall modify their program as necessary, and develop and implement elements, as necessary, to continue reducing the discharge of pollutants from the MS4 to the maximum extent practicable, following the requirements of Section 4.2 of this permit.
- 4.2.H** **Newly regulated permittees:** Shall develop a stormwater Public Participation program. The Permittees shall have the program fully implemented by the end of this permit term.
- 4.2.I** Tracking mechanisms shall be used for tracking attendance, inquiries or concerns per the requirements of Section 4.2 of this permit. Using adaptive management, all MS4 Operators shall review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of this permit. This shall be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the MS4 Governing board and if the community and MS4 government are working together for water quality. Any additional events and/or BMPs shall be acknowledged in the Stormwater Management Program report.
- 4.3** **MCM 3. Illicit Discharge Detection and Elimination (IDDE)**
The MS4 Operator shall implement, and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) into the regulated MS4.

The illicit discharge detection and elimination program shall at minimum, include the following:

- 4.3.A** A current storm sewer system map that shall be updated as needed to include features which are added, removed, or changed. This map may be paper or electronic.
This storm sewer map, must show at a minimum:
1. The location of all MS4 outfalls. The map shall be detailed enough that the outfalls can be accurately located;
 2. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls;
 3. The boundary of the regulated MS4 area;
 4. The map shall be readily available and used by field staff as needed; and

5. The map and any accompanying necessary information shall be made available to the Department upon request.

4.3.B The MS4 Operator must record the sources of information used for the map and track, at minimum:

1. A numbering or naming system of all outfalls;
2. Dates that the outfall locations were verified/ or last field survey; and
3. For newly added outfalls, the date that it was added to the storm sewer system.

4.3.C The MS4 shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions.

This prohibition shall be through ordinance or other regulatory mechanism, to the extent allowable under state or local law. This may be accomplished by more than one ordinance or mechanism.

This may be done through a "nuisance code" however it must be certain that non-stormwater discharges are covered in this code. Such non-stormwater discharges may include, but are not limited to:

- Litter;
- Household hazardous waste disposal;
- Leaf disposal;
- Use of soaps & detergents with discharge to stormsewer;
- Illegal dumping of solid waste;
- Vehicle fluid disposal;
- Grass clippings;
- Pet waste; and
- Sewage.

4.3.D A dry weather field screening strategy.

1. The MS4 Operator shall conduct (or have conducted on their behalf) outfall field assessments. The screening shall be conducted during dry weather conditions (a minimum of 72 hours after the last precipitation event) to check for the presence of a discharge.

Existing permittees:

- a) A minimum of 60% of all outfalls shall be screened during the permit cycle.
- b) Priority areas, such as those listed in 4.3.H, shall be screened each year.

Newly regulated permittees:

- a) All outfalls shall be located and screened during the 5 year permit cycle.
- b) Priority areas shall be established.

2. This screening shall include a checklist or other tracking device to; ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. This shall be used regardless of the presence of dry weather flow.

When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:

- Date and time;
- Weather conditions and temperature (air & water);
- Color of discharge;
- Estimate of flow rate (this may be noted qualitatively);
- Odor;
- Surface scum, algal bloom, floatables or oil sheen present;
- Deposits or stains (note the color);
- Turbidity (may be noted qualitatively);
- Stream impact including vegetation, fish, wildlife;
- Length of impacted stream; and
- Notes of an obvious source of flow (such as lawn irrigation, etc.)

4.3.E The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program.

These procedures are for possible illicit discharges, and may be collected, and analyzed by a contracted lab, or similar agreement with another entity who is equipped and experienced in sample collect and analysis.

1. This diagnostic monitoring shall include sampling unknown discharge from MS4 outfalls that are found to be flowing or ponding more than 72 hours after the last precipitation event and considered to be an illicit discharge.
2. The samples shall be analyzed for relevant parameters to determine if a pollutant is involved.

- a) Relevant parameters will need to be determined on a case by case basis depending on the nature of the discharge and what the potential sources may be.
- b) The MS4 Operator shall have the ability to sample for and analyze the samples. This may be done through a contract lab or similar agreement.
- c) Possible parameters sampled for and analyzed when deemed applicable include but are not limited to:
 - pH;
 - Oil and grease;
 - *E.Coli* or fecal coliform;
 - Surfactants or fluorescence concentration;
 - Specific conductivity;
 - Ammonia;
 - Chlorine;
 - Dissolved oxygen; and
 - Fluoride/ hardness.

4.3.F The MS4 Operator shall maintain procedures for tracing the source of an illicit discharge. If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source shall be traced. These procedures shall include mechanisms to locate and follow stormwater infrastructure. A variety of investigative tools may be used as appropriate for each situation, such as, but not limited to;

- Visually following the flow;
- Storm sewer system sampling;
- Full storm sewer map;
- Closed circuit television;
- Smoke or dye tracing; and
- Tunnel entry.

4.3.G The MS4 Operator shall maintain procedures for removing the source of the discharge. After locating the source, the pollutant and source must be removed. While the exact procedure will depend on the source and the circumstances, The MS4 Operator must maintain any necessary contacts with appropriate entities that may be needed for these procedures (such as an environmental cleaning company). This information shall be made available to the responsible staff.

The MS4 Operator is encouraged to work with the source of the illicit discharge to remedy the situation. Possible remedies shall include:

1. Implement source control or treatment BMPs to prevent reoccurrence of the violation;
2. Remediation or restoration of affected property.

4.3.H In order to prevent further illicit discharge, the MS4 Operator shall identify priority areas such as, but not limited to:

- Areas with evidence of ongoing illicit discharges;
- Areas with a past history of illicit discharges;
- Certain land use influencing stormsewer/ proximity of potential pollutant sources;
- Areas of higher population density;
- Neighborhoods with onsite sewage systems;
- Areas with known litter or dumping issues;
- Areas with large or increased number of citizen complaints; and
- Industrial areas

Annually, the MS4 Operators shall evaluate this priority area list and/or map and update as necessary to reflect changing priorities.

If a co-permittee, each co-permittee shall identify priority areas within their boundaries.

4.3.I The MS4 Operator shall maintain written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.

1. This shall include a description of this dry weather field screening strategy and implementation schedule to detect and address non-stormwater discharges, including discharges from illegal dumping and spills, to the permittee's system.
2. This shall include a description of how the discharge is evaluated and the possible parameters that are tested.

3. If contracted to another entity, the contact information shall be listed.

- 4.3.J** The MS4 Operator must conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, municipal staff, or adjacent MS4s.
The investigation must work to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection.
Responses shall meet the following investigation timelines:
1. Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
 2. Investigate (or refer to the appropriate agency with the authority to act) within five (5) business days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.
 3. If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4 Operator's municipal storm sewer system, the MS4 Operator must notify the other MS4's Operator within 24 hours of discovery or as soon as practicable.
- 4.3.K** The MS4 Operator shall have procedures for appropriate enforcement, this may include fines, the ability to collect cleanup and abatement costs, and actions to ensure that the permittee's illicit discharge ordinance (or other regulatory mechanism) is being implemented.
1. The MS4 Operator shall maintain a written description of the enforcement procedure. This shall include a copy of or link to the ordinance and/or other regulatory mechanism that the MS4 Operator will use to enforce the prohibition of illicit discharges into the MS4.
- 4.3.L** The MS4 Operator shall maintain a database, or other centralized system, to track dry weather field screenings, spills, incidents, and investigations.
1. Tracking mechanisms shall be used for incidents, investigations, enforcement and follow up. This data shall be used to continuously evaluate the effectiveness of the IDDE program. This data shall be reviewed to determine if there is a new priority area.
The MS4 Operator shall record annually at a minimum:
 - a) Number of outfalls screened;
 - b) Number of complaints received and investigated; and
 - c) Number of illicit discharges removed.
 2. The MS4 Operator shall document all investigations to track at a minimum:
 - a) The date(s) the illicit discharge was observed and investigated;
 - b) Summary of procedures used to investigate the illicit discharge;
 - c) The outcome of the investigation including sample results and findings;
 - d) Any follow-up of the investigation including cleanup, enforcement actions, visits to confirm the illicit discharges have been removed; and
 - e) The date the investigation or issue was closed or resolved.
- 4.3.M** The MS4 Operator shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, this may work with part 4.1 and part 4.6 of this permit (MCM #1 and MCM #6).
- 4.3.N** All MS4 Operators shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary.
- 4.3.O Existing permittees:** Shall evaluate their current program to ensure that it is in compliance with this permit.
1. Any revisions to the ordinance or regulatory mechanism shall be complete in the first year of the permit cycle.
 2. Maintain an updated map with the items listed above. Items not included in the current map must be added within the first 2 years of the permit cycle.
- 4.3.P Newly regulated permittees:** Shall develop an IDDE Program. Newly regulated permittees shall describe the IDDE program in their SWMP. The MS4 Operator shall have the program fully implemented within five (5) years of permit issuance.
1. If the MS4 Operator needs to develop the regulatory mechanism, the ordinance or regulatory mechanism must be adopted within the first 3 years of permit coverage.
 2. Develop or update a map in accordance with Section 4.3.A of this Permit. The MS4 Operator must develop or update a map with the items listed above. All outfalls shall be dry weather field screened within the first five (5) years of permit issuance.
- 4.3.Q** The MS4 Operator must develop and implement or maintain a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system.

This shall include staff who may handle materials which may become an illicit discharge. This shall include discharges through spills, improper disposal, mismanagement, improper vehicle or equipment washing or rinsing. This training may be conducted with resources online and may be focused for what topics are relevant to their position.

1. Each staff shall take this training at minimum within one year of a new employee being hired.
2. The applicable staff may include the following; (unless the MS4 Operator does not have the listed department under their jurisdiction). Additional staff or departments shall be included if appropriate;
 - Fleet maintenance staff;
 - Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
 - Road maintenance staff;
 - Road salt/de-icing staff; and
 - Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.
3. The training dates, topics and the attendance shall be recorded.
4. Reviews of the training effectiveness shall be considered after municipal site inspections or after an incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the MS4 Operator should consider if the training is enough or is ineffective. The MS4 Operator shall consider ways to survey or test staff to see if the training is effective.

- 4.3.R** Using adaptive management the MS4 Operator shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to continuously evaluate the effectiveness of each BMP and the implementation of each BMP.

Any additional BMPs shall be acknowledged in the Stormwater Management Program report.

4.4 **MCM 4. Construction Site Stormwater Runoff Control**

The MS4 Operator shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to their MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater 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.

- 4.4.A** The MS4 Operator shall have a law, ordinance and/or other regulatory mechanism to require construction site runoff control BMPs at construction/land disturbance sites greater than or equal to one (1) acre or less than one acre if the construction activity is part of a larger common plan or development or sale that would disturb one acre or more. The mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under State, or local law.

- 4.4.B** The MS4 Operator shall review pre-construction plans. These reviews at a minimum shall:

1. Incorporate the consideration of potential water quality impacts through procedures for site plan review. The site plan review procedures shall evaluate threats to water quality shall by considering, at minimum, the following factors:
 - a) Soil erosion potential;
 - b) Site slope;
 - c) Project size and type;
 - d) Sensitivity of receiving waterbodies;
 - e) Discharge flow type (pipe or sheet flow);
 - f) Location of discharge point in relation to receiving water;
 - g) Proximity of the site to receiving waterbodies; and
 - h) Other factors relevant to the MS4 service area.
2. Use a checklist, or other listed criteria, to ensure consistency and completeness.
3. Include requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures.
 - a) This includes; temporary BMPs throughout the life of the land disturbance, and permanent BMPs which remain on site as required by local codes and ordinances.
4. Consider ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
5. Include requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality.

This shall include at a minimum:

 - a) Discarded building materials;
 - b) Concrete truck, and mortar mix washout;

- c) Chemicals (such as fertilizer, paint, oils, herbicides, pesticides);
- d) Litter; and
- e) Sanitary waste.

4.4.C The MS4 Operator shall establish authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, all MS4 Operators shall implement procedures for inspecting construction/land disturbance projects.

The construction site runoff control program shall implement at a minimum:

1. Identify priority sites for inspection based on nature of the construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water;
2. Construction site inspections shall include assessment of compliance with the MS4 Operator's construction site stormwater runoff control ordinance or regulatory mechanism, and other applicable ordinances;
3. The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement policies to require BMPs are implemented and effective;
4. Final inspection, upon completion of the land disturbance and prior to final approval of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.
5. The inspections conducted by the MS4 Operator shall be documented with a checklist. The checklist must include structural BMPs and check on the self-inspection which are conducted by the construction site operator. These MS4 Operator checklists may be electronic.

4.4.D The construction site runoff control program shall include an established, escalating enforcement policy that clearly describes the action to be taken for violations.

The program shall have written procedures to ensure compliance with the MS4 Operator's construction site runoff control regulatory mechanism. This shall include the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain penalties, injunctions or other measures will be used.

1. The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.
2. Enforcement responses to violations must consider the following criteria at minimum:
 - a) Degree and duration of the violation;
 - b) Effect the violation has on the receiving water;
3. Enforcement actions shall be timely in order to ensure the actions are effective. These procedures and actions must be written and available for MS4 staff for consistency and training purposes.
4. The MS4 Operator must have a minimum of two (2) enforcement actions they are able to use.
Possible enforcement actions include, but are not limited to:
 - a) Stop Work orders;
 - b) Verbal education or educational materials given to the construction site operator;
 - c) Written warnings or notice of violation;
 - d) Bonding or escrow requirements;
 - e) Fines/ penalties; and
 - f) Denials for previous non-compliance or current non-compliance at other sites.

4.4.E The MS4 Operator shall require the construction site operator to conduct inspections at minimum:

1. Every fourteen (14) days, when construction is active.
2. Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased.

Checklists used for these inspections conducted by construction site operators shall either be submitted to the MS4 Operator, or the MS4 Operator shall verify that these inspections are being conducted by the construction site operator checklists during MS4 Operator inspections.

4.4.F The MS4 Operator shall maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence.

The inventory must contain:

1. Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);
2. Size of the project/ area of disturbance;
3. If the site is a priority site/ how high of priority;

4.4.G The MS4 Operator shall track their oversight inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.

The tracking must contain at a minimum:

1. Inspection dates and time;
2. Inspector name;
3. Inspection findings; and,
4. Follow up actions and dates, including corrective actions and enforcement actions.

- 4.4.H Existing permittees:** Review the Stormwater Management Program including ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within the first year of this permit issuance. The inventory of active sites must be updated as new projects are reviewed and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within one (1) year of this permit issuance.
- 4.4.I Newly regulated permittees:** If the MS4 Operator needs to develop this construction site runoff program, the SWMP shall describe the construction site stormwater plan and scheduled implementation. Development of this program shall be completed within the first three (3) years of the permit issuance. If the MS4 Operator's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections with the SWMP. For new permittees, the inventory must be completed with one (1) year of permit issuance and then updated as new projects are permitted.
- 4.4.J** The Stormwater Management Program must include procedures for the MS4 Operator to receive and consider information submitted by the public about land disturbance sites. This may be in combination with 4.2.D of this permit.
- 4.4.K** The MS4 Operator shall provide, or support access to, construction site runoff control training for MS4 inspectors and plan reviewers at minimum once during this permit cycle. This education shall be tracked or documented.
- 4.4.L** The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.
- 4.4.M** Using adaptive management, all MS4 Operators shall review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the ordinances, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures, and effectiveness of training procedures to ensure compliance with these requirements and determine if changes are needed. This annual review may include but is not limited to:
1. Evaluating the most common violations, how the violations are handled, how many are escalated;
 2. If the education program can assist in reducing violations;
 3. Determining if the site plans match the sites when violations arise or if additional items need to be evaluated at plan review;
 4. Assessing public complaints being addressed in a timely manner; and
 5. Evaluating if the inspections thorough and consistent across different sites.

Any additional BMPs shall be acknowledged in the SWMP.

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

The MS4 Operator shall continue or develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into the regulated MS4.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts

- 4.5.A** The MS4 Operator shall maintain and utilize an ordinance(s) or other regulatory mechanism(s) to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre including projects less than one acre that are part of a larger common plan of development or sale. The goal of this approach is to arrive at designs that protect sensitive areas, minimize the creation of stormwater pollution, utilize BMPs that effectively remove stormwater pollution, and attempt to maintain predevelopment runoff conditions.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts from stormwater, after construction.

1. If adopting a set of standards from another MS4 or other established standards, the MS4's ordinance may incorporate by reference, therefore the MS4 does not need to incorporate the entire guidance into their codes.
2. This program may be accomplished through one or multiple ordinances or regulatory mechanisms.

4.5.B The MS4 Operator shall continue or develop a strategy to minimize water quality impacts. This shall include a combination of structural and/or non-structural controls (BMPs) appropriate for the permittee's community.

1. Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs.

The ordinance or regulatory mechanism for structural post-construction controls, or water quality facilities, shall include:

- a) Adoption or development of numeric or technical performance and/or design standards to control post-construction stormwater discharges.

These post-construction stormwater standards are for designing, installing, implementing, and maintaining stormwater control measures which may include, but are not limited to BMPs that; infiltrate, evapo-transpire, harvest, detain, retain, and/or reuse stormwater.

The MS4 Operator must adopt or maintain local stormwater discharge design standards that consider parameters such as; site discharge volume, rate, duration, and frequency for new development and redevelopment sites with the intent to minimize the impact of stormwater runoff on water quality.

2. Non-structural controls include but are not limited to; stream buffers, no mow zones, preservation of open spaces, tree preservation, impervious cover reduction, land use planning, and low impact development.

The ordinance(s) or regulatory mechanism(s) for non-structural post-construction controls, shall include:

- a) Adoption or development of preventative actions that involve management and source controls such as, but not limited to:

- Policies and ordinances that provide requirements and standards to direct development to identified areas;
- Protection of sensitive areas such as wetlands and riparian areas;
- Maintain and/or increase open space (which may include a dedicated funding source for open space acquisition);
- Maintain requirements for buffer zones along water bodies;
- Require minimizing impervious surfaces;
- Require minimizing disturbance of soils and vegetation;
- Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure;
- Programs which incentivize the use of green infrastructure;
- Requirements for minimization of directly connected impervious areas; and
- Tree preservation ordinances.

4.5.C Pre-construction plan review shall be conducted by the MS4 Operator to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance.

The structural or non-structural controls chosen shall; protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This can be achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects, or the permittee may achieve this goal through a method more appropriate for its community.

1. The plan review process shall use a checklist. This may be part of the same plan review in MCM 4.
2. The plan review process shall evaluate non-structural BMP selection first, such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space. Non-structural BMPs primarily prevent stormwater runoff from a site, which could influence the options for structural BMPs which help mitigate the stormwater related impacts after they have occurred.

4.5.D The MS4 Operator shall have ordinances or similar enforcement mechanisms to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs, including, as appropriate, agreements between the MS4 Operator and other parties such as post-development landowners or regional authorities.

1. Long term O&M shall be addressed during the plan review and approval process.
2. Copies of O&M manuals shall be retained by the party responsible for the post-construction BMP, and with the MS4 Operator. This may be done electronically.

4.5.E The MS4 Operator shall inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:

1. A minimum of one (1) inspection shall be conducted during construction, and one (1) inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. This may be conducted in combination with MCM 4 inspections.
 - a) The MS4 inspector shall have access to the approved plans to ensure proper installation.
2. A minimum of once in the first three years after the installation by, the MS4 Operator.

3. Annually by the owner or operator of the post-construction BMP, or by the MS4 Operator. If completed by the BMP owner or operator, this inspection report shall be submitted to the MS4 Operator for evaluation and review.
4. The MS4 Operator shall inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. This must include installations with ongoing or open enforcement issues.

- 4.5.F** The MS4 Operator must maintain a plan designed to ensure compliance with the MS4's post-construction water quality regulatory mechanism. This plan shall include escalating enforcement mechanisms the MS4 Operator will use to ensure compliance.
The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.
1. Enforcement responses to violations must consider at minimum:
 - a) Degree and duration of the violation;
 - b) Effect the violation has on the receiving water;
 - c) Compliance history of the post-construction BMP owner or operator; and
 - d) Cooperation of the owner or operator with compliance efforts.
- 4.5.G** Enforcement actions shall be timely in order to ensure the actions are effective. The MS4 Operator shall begin enforcement actions within thirty (30) days of discovering a violation.
The MS4 Operator shall maintain a minimum of two possible sanctions. These include, but are not limited to:
1. Education regarding the BMP and verbal warnings;
 2. Written warnings or notice of violation (this includes email notification);
 3. Property lien; and
 4. Fines.
- 4.5.H** The MS4 Operator shall maintain an inventory tracking the water quality post-construction BMPs. This inventory must contain, at a minimum:
1. Relevant contact information for the responsible person(s) or entity (e.g., tracking number, name, address, phone, etc.);
 2. The type of post-construction BMP;
 3. Applicable operations and maintenance documents;
 4. Date the MS4 Operator approved the construction site plan; and,
 5. If the water quality facility is owned or operated by the MS4, the tracking shall also include any maintenance, such as sediment clean-out or replanting.
- 4.5.I** The MS4 Operator shall also track the post-construction BMP inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.
The MS4 Operator shall track at a minimum:
1. Inspection dates/ times;
 2. Inspector name(s);
 3. Inspection findings; and,
 4. Follow up actions including all enforcement actions.
- 4.5.J** **Existing permittees:** Evaluate the ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements and determine if changes are needed. Any changes necessary to be in compliance with this permit shall be completed within the first two (2) years of permit issuance. The inventory of water quality facilities must be updated as new facilities are added and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within two (2) years of this permit issuance.
- 4.5.K** **Newly regulated permittees:** Shall develop the ordinance or regulatory mechanism. Development of this program shall be completed within the first five (5) years of the permit issuance.
For new permittees, the inventories of public and private post-construction water quality BMPs must be completed within two (2) years of permit issuance and then updated as new projects are permitted and projects are completed.
- 4.5.L** The MS4 Operator shall provide appropriate training for MS4 inspectors at minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The MS4 shall provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs.
- 4.5.M** Using adaptive management, all MS4 Operators shall review, at minimum annually, their Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed. This annual review may include but is not limited to:

1. Reviewing the number and types of developments;
2. How many BMPs were installed/inspected;
3. The amount of watershed area being treated;
4. The types of violations found and how frequently; and
5. How education could improve the effectiveness of the program.

Any additional programmatic BMPs shall be acknowledged in the Stormwater Management Program Report.

4.6. MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

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.

4.6.A The MS4 Operator shall maintain and utilize an employee training program for MS4 municipal operations staff. The training shall be given at minimum annually to all MS4 staff who work with material handling, at MS4 owned or operated vehicle/equipment maintenance areas, storage yards, and material storage facilities. This may be broken up into staff units, or by applicable topics.

4.6.B The training shall be used to prevent and reduce stormwater pollution.
The training shall cover a minimum of the following topics/ activities (if applicable to the MS4):

1. Vehicle and equipment washing;
2. Fluid disposal and spills;
3. Fleet, equipment, and building maintenance;
4. Park and open space maintenance procedures (including fertilizer, herbicide, pesticide application);
5. New construction, road maintenance, and land disturbances;
6. Stormwater system maintenance;
7. MS4 operated salt and de-icing operations;
8. Fueling;
9. Solid waste disposal;
10. Street sweeper operations; and
11. Illicit Discharges.

4.6.C The MS4 Operator shall:

1. Maintain material to use in the training program, such as those available from the EPA, the state, or other organizations.
2. Maintain written procedures for the training program. Include a description of how this training will coordinate with all other minimum control measures (such as Illicit Discharge), monitoring and TMDL implementations where applicable.
3. Maintain a written schedule to offer topic specific training when it is appropriate. Such as, swimming pool discharges in the summer, leaf disposal in the fall, proper salt clean-up and usage in the winter.

4.6.D The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program.

This shall include a minimum of the following if owned and operated by the MS4 and if applicable to the MS4:

1. Maintenance yards;
2. Fleet or maintenance shops, including parks department;
3. Storage yards;
4. Parks, golf courses, swimming pools, and splash pads;
5. Municipal parking lots;
6. Salt/sand storage locations;
7. Snow disposal areas; and
8. Other locations expected to contribute floatables and/or pollutants.

4.6.E The MS4 Operator shall maintain a list of industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility.

This includes; municipal projects with a land disturbance permit, wastewater facilities, airports, etc.

NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list; however, the MS4 Operator should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE program.

- 4.6.F** The MS4 Operator shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from municipal facilities listed in Section 4.6.D and 4.6.E.
These controls shall include at a minimum, where applicable:
1. A list of potential pollutant sources at each facility, such as materials used and stored on site;
 2. A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues;
 - a) Records shall be kept for inspections and follow up. This may be a checklist, and may be electronic;
 3. Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4 where needed.
 - a) A map with descriptions of these BMPs shall be maintained for each facility;
 4. All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the permittee shall be stored so these materials are not exposed to stormwater;
 5. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state;
 - a) This shall include spill kits when liquid product is stored at a facility; and
 - b) Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 6. Tracking of rock salt/brine or other deicer usage;
 7. Maintaining municipal salt storage area(s) after use of rock salt, at minimum:
 - a) Sweep and/or shovel spillage in loading area and storage area, and
 - b) Unload salt hoppers or keep under cover when salt is in the hopper.
- 4.6.G** The MS4 Operator shall have procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction.
This waste, shall include at minimum, if applicable to the permittee:
1. Street sweeper spoils and washout;
 2. Accumulated sediment;
 3. Dredged materials;
 4. Floatables, trash and litter;
 5. Leaves, other organic matter; and
 6. Other debris.
- 4.6.H** The MS4 Operator shall maintain and utilize the following procedures, at minimum, for the washing of all municipal vehicles and equipment (if applicable to the MS4):
1. Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent treatment; and
 2. Any wash or rinse water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment.
 3. Any washing or rinsing activities shall be conducted in an appropriate area so the water is treated. This area(s) shall be marked on the map of the facility.
- 4.6.I** The MS4 Operator shall maintain written explanation of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining inspection reports or checklists.
Individual Stormwater Pollution Prevention Plans or one overarching Operations and Maintenance Manual for all applicable MS4 facilities may be used to comply with this requirement. If a unified document is used, each individual site shall be familiar with the document, and a copy shall be present on each site referenced in the document or available electronically. Annually, the MS4 Operator shall evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.
- 4.6.J** The MS4 Operator shall maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects shall require the protection of water quality in the standards that are used to plan, design, build, and maintain stormwater infrastructure.
Flood management projects are those projects developed or designed to reduce flooding.
- 4.6.K** **Existing permittees:** Shall evaluate the current Stormwater Management Program including training, inspection procedures, and other municipal operation procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within one (1) year of this permit issuance.

- 4.6.L Newly regulated permittees:** Shall develop this program. The SWMP shall describe the pollution prevention/ good housekeeping plan and scheduled implementation. Development of this program shall be completed within the first five (5) years of the permit issuance.
- 4.6.M** Using adaptive management, all MS4 Operators shall review their Municipal Operations Program, at minimum, annually and update implementation procedures as necessary within the permit requirement. Any additional BMPs shall be acknowledged in the Stormwater Management Program Report.

PART 5. MONITORING, RECORDKEEPING, AND REPORTING

5.1 Monitoring

- 5.1.A** The MS4 Operator shall retain records of any monitoring information used to complete the application for this operating permit, implementation of any part of this operating permit, and implementation for any part of the permittee's Stormwater Management Program for a period of at least three (3) years from the date of the sample, measurement, or analysis. This period may be extended by official written request by the Department at any time. These records may be maintained electronically.

Monitoring data shall include, if applicable, the below information:

1. All calibrations and maintenance records of sample or analytical equipment;
2. All original strip chart recordings for continuous monitoring instrumentation;
3. The date, location, and time of sampling or measurement;
4. Name of the individual(s) who performed the sampling or measurements;
5. The date(s) analyses were performed;
6. Name of the individual(s) who performed the analyses;
7. The analytical techniques or methods used; and
8. The results of such analyses.

- 5.1.B** Any monitoring conducted for the purpose of implementation of any part of this permit shall be conducted in accordance to test procedures approved under 40 CFR Part 136 unless another method is required under 40 CFR subchapters N or O.

5.2 Recordkeeping

All records required by this permit may be maintained electronically, as long as they are accessible upon request by the Department. If a non-electronic version is kept, the permittee shall retain the most recent versions of the records and shall be accessible to the Department upon request.

- 5.2.A** The permittee shall retain records of all activities requiring recordkeeping by the Stormwater Management Program, a copy of the NPDES permit, a copy of all ordinances, policies, and formal procedures for all six (6) MCMs and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the report or application. This period may be extended by official request of the Department at any time.
- 5.2.B** The permittee shall retain the most recent version of their SWMP at a reasonable location accessible to the Department, this may be done as a publicly available website.
- 5.2.C** If requested in writing by the public, the permittee shall submit the items required under Part 5 of this permit, including a copy of the permit, SWMP, or application.
- 5.2.D** The permittee shall submit the items contained in Part 5 of this permit to the Department upon request.

5.3 MS4 Stormwater Management Program Report

- 5.3.A** A report to the Department on the status of the MS4's program is due annually on or before February 28th. This report shall cover the previous year from January 1st to December 31st. The report shall be submitted on the Department approved, MS4 Stormwater Management Program Report form. If approved by the Department, permittees may submit the MS4 Stormwater Management Program Report using an alternative report format. The MS4 Operator shall submit the MS4 Stormwater Management Program Report containing, at a minimum:
1. Information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable;
 2. The status of the MS4's compliance with permit conditions;
 3. Assessment(s) of the appropriateness of identified BMPs and corresponding measurable goals for each MCM;
 4. A summary of results of information collected and analyzed during the reporting period, including monitoring data or quantifiable values per the MS4's measurable goals;

5. A summary of the TMDL Assumptions and Requirement Attainment Plan (ARAP), if applicable, containing the implementation status of BMPs and measurable goals specific to the TMDL ARAP or progress toward implementing the schedule for implementation of the TMDL ARAP. The summary shall also include any changes to BMPs and corresponding measurable goals;
6. If the permittee is utilizing integrated planning, the permittee shall provide a summary of the status of the integrated plan; and
7. A statement if the permittee is relying on another entity to satisfy some of the permittee's permit obligations. If applicable, the permittee shall supply the name of the entity, the name of the entity's primary contact person, and other relevant contact information.

5.3.B Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data for the NPDES program. The eDMR system is currently the only Department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the Department. The facility must register in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due.

PART 6. SPECIAL CONDITIONS FOR TOTAL MAXIMUM DAILY LOADS

6.1 MS4s Subject to Total Maximum Daily Loads (TMDL)

6.1.A Any regulated MS4 identified in an EPA approved or established TMDL with an applicable Wasteload Allocation (WLA) shall implement steps toward the attainment of applicable WLAs in accordance with 40 CFR 122.44(k)(2) and (3).

6.1.B The MS4 Operator shall develop a TMDL ARAP to address the TMDL's assumptions and requirements where applicable.

6.1.C The TMDL ARAP shall be incorporated into the Stormwater Management Program and include, at a minimum:

1. A plan to identify potential sources of the pollutant(s);
2. A plan to implement BMPs to address the sources within the MS4 service area; and
3. A schedule, including beginning and ending milestones, which are expressed as month and year to implement planned BMPs.

The schedule for the implementation of the TMDL ARAP shall be completed as soon as practicable, but is not limited to the five year term of this operating permit as attainment can take years or even multiple permit terms.

6.1.D BMPs shall be developed or designed with a purpose of reducing the pollutant(s) of concern. The ARAP shall list each BMP and shall contain a description of the BMP, the purpose of the BMP, and the expected result of the BMP.

6.1.E Measurable goals shall be established for each BMP or in conjunction with multiple BMPs.

1. Each measurable goal shall contain a statement clearly indicating how it will be established to determine the appropriateness of identified BMPs and progress toward the expected results of the BMP.
2. Measurable goals shall be quantifiable; however, if it is not feasible to utilize a measurable goal that is quantifiable, then the permittee shall provide justification indicating why the measurable goal cannot be quantifiable.
3. If applicable, measurable goals shall also utilize interim and completion milestone dates, and a periodic frequency of measurement to document progress. Interim and final milestone dates shall be established with a format of month and year, or as 1st, 2nd, 3rd, 4th, and 5th year of the operating permit cycle.

6.1.F An iterative process shall be utilized by the permittee documenting how each BMP is evaluated and subject to replacement or modification. The permittee shall apply reasonable further progress by replacing or modifying ineffective BMPs with effective BMPs.

6.1.G If the permittee is subject to an approved or established TMDL, the permittee shall draft and submit their TMDL ARAP to the Department as soon as practicable but no later than 30 months after the date the EPA approves or establishes the TMDL or the effective date of their operating permit, whichever is later.

The initial TMDL ARAP is to be submitted to the Department's Water Protection Program, MS4 Team for review and approval at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102. The deadline for the TMDL ARAP may be extended through written request by the permittee and written approval by the Department.

- 6.1.H** The MS4 Operator shall submit annual TMDL ARAP status reports to the Department on February 28th of each year until the TMDL ARAP has been submitted.
The annual status report shall provide a brief update on the status of completion of the TMDL ARAP to be submitted to the Department. The deadline for the TMDL ARAP status report may be extended through written request by the permittee and with written approval by the Department. The annual status report shall be submitted to the Department's Water Protection Program, MS4 Team at MS4@dnr.mo.gov or Water Protection Program, MS4 Team, P.O. Box 176, Jefferson City, MO 65102.
- 6.1.I** If the Department approves the TMDL ARAP, it will be presumed that the TMDL ARAP is affordable by the permittee. If the Department disapproves a submitted TMDL ARAP and requires any additional or different controls or expenses, the Department will conduct an affordability analysis in support of the disapproval unless waived by the permittee. In addition to the disapproval, the Department shall provide an itemized list of recommendations, discrepancies, and plan corrective action(s) to the permittee in written correspondence, which will also provide deadlines for any corrective action(s).
- 6.1.J** If the TMDL ARAP has been submitted to the Department but has not received approval, the MS4 Operator is not required to implement any actions listed in their TMDL ARAP and shall notify the Department of this in their MS4 Stormwater Management Program Report.
- 6.1.K** If the TMDL ARAP has received Department approval, the permittee shall implement their TMDL ARAP in accordance to schedules established in the TMDL ARAP.
Implementation of all TMDL ARAP control measures shall be documented and retained by the permittee, and made available to the Department or the EPA upon request.
- 6.1.L** If the MS4 Operator has an approved TMDL ARAP, the permittee shall provide a summary listing the BMPs and the status of the measurable goals in the MS4 Stormwater Management Program Report.
- 6.1.M** If the MS4 Operator is subject to a TMDL, the MS4 Operator may demonstrate no additional controls are needed beyond the successful implementation of the six Minimum Control Measures (MCMs), which includes modifications to the BMPs or measurable goals, for the attainment with the TMDL's assumptions and requirements.
The demonstration is subject to Department approval. The MS4 Operator shall contact the Water Protection Program's MS4 Team to begin the process.
- 6.1.N** If the permittee has already developed an integrated plan, a separate ARAP is not be required provided the integrated plan meets the requirements outlined in section 6.1 of this permit.
Review and rating of an integrated plan is subject to the same requirements of section 6.1 of this permit. The MS4 Operator shall contact the Water Protection Program's MS4 Team to begin the process.
- 6.1.O** Permittees subject to existing TMDL Assumptions and Requirements shall submit their plan and status of implementation to the Department with the MS4 Stormwater Management Program Report required by this permit. Existing plans shall be subject to the same conditions listed in items 6.1.
- 6.1.P** If the EPA approved or established TMDL indicates that the permittee does not cause or contribute to the impairment, the permittee is not required to develop and implement any action contained in Part 6 of this permit.

PART 7. STANDARD PERMIT CONDITIONS

- 7.1.A** Duty to Comply. The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and the Federal Clean Water Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal.
- 7.1.B** Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
- 7.1.C** Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

- 7.1.D** Inspection and Entry. The permittee shall allow the Department or an authorized representative (including an authorized contractor acting as a representative of the Department), upon the presentation of credentials and other documents as may be required by law to:
1. Enter the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.
 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, and have the authority to request records be provided electronically in absentia.
 3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
 4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substance or parameters at any location.
- 7.1.E** Monitoring Methods. See Part 5.1 of this operating permit.
- 7.1.F** Need to Halt or Reduce Activity Not an Excuse. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- 7.1.G** Permit Actions. This permit may be modified, revoked, reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- 7.1.H** Duty to Reapply.
1. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
 2. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
 3. A permittees with currently effective general permit shall submit an application for renewal at least 180 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.) Continuation of expiring permits are in accordance with 10 CSR 20-6.010(10)(C) and subsequent amendments.
- 7.1.I** Administrative Continuation of the Permit. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 10 CSR 20-6.010(10)(C) and remain in force and effect. Any permittee who was granted permit coverage prior to the expiration date, and who has applied for renewal at least 180 days prior to the expiration date, will automatically remain covered by the continued permit until the earlier of:
1. Reissuance or replacement of this permit, at which time the permittee shall comply with the application conditions of the new permit to maintain authorization to discharge;
 2. Notice of termination;
 3. Issuance of a site-specific permit or alternative general permit for MS4 discharges; or
 4. A permit decision by the Director not to reissue this general permit, at which time the permittee shall seek coverage under an alternative general permit or a site-specific permit.
- 7.1.J** Permit Transfers. Subject to 10 CSR 20-6.010(11), an operating permit may be transferred upon submission to the Department. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the MCWL or the CWA. (See 40 CFR 122.61. In some cases, modification or revocation and reissuance is mandatory.)

- 7.1.K** Procedures for Modification or Revocation. If at any time the Department determines that the quality of waters of the state may be better protected by reopening this permit, or revoking this permit and requiring the owner/operator of the permitted site to apply for a site-specific (individual) permit or alternative general permit, the Department may revoke a general permit and require any person to obtain such an operating permit as authorized by 10 CSR 20-6.010(13), 10 CSR 20-6.200(1)(B) or 10 CSR 20-6.200(6).
- 7.1.L** If this permit is reopened, modified, or revoked pursuant to this section, the permittee retains all rights under Chapters 536 and 644 Revised Statutes of Missouri upon the Department's reissuance of the permit as well as all other forms of administrative, judicial, and equitable relief available under law.
- 7.1.M** The Department may require the permittee to apply for and obtain a site-specific or alternative general permit if:
1. The permittee is not in compliance with the conditions of this general permit.
 2. The discharge no longer qualifies for this general permit due to changed site conditions and regulations.
 3. The permittee will be notified in writing of the need to apply for a site-specific permit or an alternative general permit. When a site-specific permit or alternative general permit is issued to the authorized permittee, the applicability of this general permit to the permittee will be terminated upon the effective date of the site-specific or alternative general permit, whichever the case may be.
- 7.1.N** Site-Specific Permit or Alternative General Permit. The permittee may apply for a site-specific permit or alternative general permit in lieu of coverage under this general permit. In such cases, the permittee shall submit an application for the alternate permit in accordance with the requirements of 10 CSR 20-6.200 with reasons supporting the request. The request may be granted by issuance of any site-specific permit or an alternative general permit.
- 7.1.O** Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
- 7.1.P** Duty to Provide Information. The permittee shall furnish to the Department, within a reasonable amount of time, any information which the Department may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.
- 7.1.Q** Falsification Penalties. Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six months, or by both. Second and successive convictions for violations under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or both;
- 7.1.R** Reopener Clause. Nothing in this permit shall prevent the Department from re-opening, modifying, or revoking this permit as authorized by law.
- 7.1.S** Signatory Requirements.
1. All permit applications shall be signed and certified in accordance with 40 CFR 122.22 and 10 CSR 20-6.010(2)(B) by either a principal executive officer or by an individual having overall responsibility for environmental matters for the permittee.
 2. All reports required by this permit, and other information requested by the Department shall be signed by a person described in section 2.2.B of this permit, or by a duly authorized representative of that person. A person is a duly authorized representative if:
 - a) The authorization is made in writing by a person designated in Section 2 of this permit;
 - b) The authorization specifies an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of stormwater manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for

the permittee. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

- c) The written authorization is submitted to the Director; and
- d) If an authorization under section 2.2.B is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new, written authorization satisfying the requirements of this paragraph must be submitted to the Director prior to, or together, with any reports, information, or applications signed by an authorized representative.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
PHASE II SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
MO-R04C000
MASTER GENERAL PERMIT**

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of Public Law 92-500 (as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Missouri Department of Natural Resources (Department) under an approved program, operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2., a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the permit. A Fact Sheet is not an enforceable part of an MSOP.

This Fact Sheet is for a Master General Permit.

Part I – Facility Information

Facility Type:	Industrial; Stormwater
Facility SIC Code(s):	#9511
Facility NAICS Code:	#924110
Facility Description:	Urban Stormwater Runoff. The permittee's MS4 collects and routes stormwater from industrial, commercial, roadways, and residential areas located within the permittee's municipal boundary and discharges the stormwater to waters of the state.

This Permit establishes Stormwater Management Program and Stormwater Management Plan (SWMP) requirements for all permit holders under this permit.

Clarification:

Coverage under this general permit may be issued to Public entities located inside the service area of a publicly owned separate storm sewer system designated by the Department if it is determined that its discharges from the MS4 have caused, or have the potential to cause, an adverse impact on water quality. Extension of such coverage shall be at the discretion of the Department.

Significant Changes to this permit include:

- ✓ Establishment of terms and conditions of the permit necessary to meet the MS4 permit standard in clear, specific and measurable terms per 40 CFR 122.34.
- ✓ Establishment of public notice, public comment and public hearing process necessary to meet the permit standard per 40 CFR 124.10.

DEFINITIONS

The definitions in this section shall apply to this permit only, and do not supersede or replace the definitions contained in Section 644.016, RSMo, 10 CSR 20-2.010, and 10 CSR 20-6.200(1)(D), which are all incorporated herein by reference. To aid understanding of some key terms, explanations of several statutory and regulatory definitions are provided. However, in the event of any inconsistencies, the statutory and regulatory definitions are controlling.

Adaptive management: A repetitive or cyclical process of decision making that requires monitoring activities to adjust behavior, decisions, and actions and to incorporate new knowledge and actual changes. Adaptive management enables MS4 permittees to continually improve their stormwater control strategies and practices as they implement their programs and learn from experience to better control pollutant discharges. The process starts with the evaluation of a BMP with its designated measurable goal. If the BMP is found effective, then the MS4 Operator continues with this BMP until the next round of evaluation. If the BMP is found to be ineffective, then the MS4 Operator is required to conduct analysis to determine what can be altered or modified or if the BMP needs to be replaced.

Best Management Practices (BMPs): “Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating

procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.” 10 CSR 20-6.200(1)(D)1.

- BMPs can be temporary or permanent, and include structural items or non-structural practices or activities including schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants.
- BMPs encompass both the enforceable terms and conditions of this permit as well as particular activities and practices selected by the permittee that will be undertaken to meet the permit requirements but that are not themselves enforceable.

Clear, specific, and measurable terms: This permit is written to contain clear, specific, and measurable terms, using plain language to clearly establish permit requirements and the standards that will be used to assess compliance. “Such terms and conditions may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions).” 40 C.F.R. § 122.34(a)

Common Plan of Development or Sale: An area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. This plan may consist of many small construction projects that collectively add up to one or more acres of total disturbed land. For example, an original common plan of development of a residential subdivision might identify the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for development. All these areas would remain part of the common plan of development or sale until the intended construction is completed.

Construction activities: Clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre. Construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) acre. *See* 10 CSR 20-6.200(1)(D)28.

Construction Site Operator: The entity or entities with operational control over construction plans and specifications including the ability to make modifications to those plans and specifications; or with day-to-day operational control of those activities at a project that are necessary to ensure compliance with a Stormwater Pollution Prevention Plan (SWPPP) for the site or other permit conditions. Typically this is the owner of the site or the general contractor of the project.

Control Measure: Any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the state.

Conveyance: Curbs, gutters, artificial channels, swales, ditches, drains, pipes, catch basins, paved or unpaved channels, storm drains, or other constructed or natural features designed or utilized for routing of stormwater.

Co-permittee: “A permittee to a state operating permit that is responsible only for permit conditions relating to the discharge for which it is owner or operator, or both.” 10 CSR 20-6.200(1)(D)4.

An operator of a regulated municipal separate storm sewer system (MS4) that applies jointly with one or more other applicants for coverage under a single municipal stormwater permit. Applicants within one urbanized area, or within a common watershed, or in an area served in common by one service provider may apply as co-applicants to share the administrative responsibilities of the application process and to become co-permittees under an issued permit.

A co-permittee must comply with the conditions of the permit relating to discharges from the MS4 the co-permittee owns or operates. Co-permittees will need to cooperate with each other to develop, implement, and report on their programs.

Discharge: “[T]he causing or permitting of one or more water contaminants to enter the waters of the state.” Section 644.016(6) RSMo

The water contaminant authorized to be discharged by this permit is urban stormwater runoff.

Illicit Discharge: “Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to a state operating permit, other than storm water discharge permits and discharges from fire fighting activities.” 10 CSR 20-6.200(1)(D)7.

Infill development: The building of homes, businesses and public facilities on unused and underutilized lands within existing urban areas. Infill development is the use of land in established neighborhoods for new development or redevelopment.

Iterative process: A documented process consisting of action items and analysis conducted by the MS4 Operator to ensure that BMPs are effective. This includes evaluating results and adjusting actions on the basis of what has been learned, as a part of adaptive management.

Maximum Extent Practicable (MEP): An adaptive management approach whereby the permittee will implement management measures, including structural and non-structural BMPs. MEP is a permittee-specific determination guided by factors such as: community financial capability and the need for reasonable rate or funding increases, weighing program-wide priorities compared to site-specific MS4 improvements, MS4 impacts to receiving waters, local priorities, watershed planning, integrated planning, MS4 size, climate, implementation schedules, hydrology, topography, geology, and the MS4's capacity to perform additional operation and maintenance.

Minimum Control Measure (MCM): The Phase II Rule defines a small MS4 stormwater management program as comprised of six areas of management, known as Minimum Control Measures. When administered properly and collectively, they are expected to result in reduction of the discharge of pollutants into receiving water bodies.

Modification: A revision to the MS4's Stormwater Management Program during the life of this permit. All modifications require written notification by the MS4 operator to the Department of Natural Resources (Department). Modifications may include:

- a. Addition of new components, controls, or requirements to the Stormwater Management Program;
- b. Replacing or modifying ineffective or unfeasible BMPs in accordance with adaptive management and the permittee's iterative process;
- c. Modifying the iterative process or adaptive management procedures;
- d. Replacing or modifying time schedules that are not explicitly required by this permit;
- e. The addition or removal of jurisdictional areas;
- f. Contact names for the Stormwater Management Program; and
- g. Other changes as determined appropriate by the MS4 Operator.

Major vs. Minor Modifications:

A **minor modification** does not need to be submitted to the Department for review and approval or to be public noticed.

A **major modification** requires submittal to the Department for review and approval and requires public notice.

MS4 Operator: "The owner, or an agent of the owner, of a separate storm sewer with responsibility for operating and maintaining the effectiveness of the system." 10 CSR 20-6.200(1)(D)17.

Municipal Separate Storm Sewer (MS4): "A municipal separate storm sewer system" 10 CSR 20-6.200(1)(D)11.

"Municipal separate storm sewer means a conveyance or system of conveyances including roads and highways with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, paved or unpaved channels, or storm drains designated and utilized for routing of storm water which—

- A. Does not include any waters of the state as defined in section 644.016, RSMo.
- B. Is owned and operated by the state, city, town, village, county, district, association, or other public body created by or pursuant to the laws of Missouri having jurisdiction over disposal of sewage, industrial waste, storm water, or other liquid wastes;
- C. Is not a part or portion of a combined sewer system;
- D. Is not a part of a publicly owned treatment works as defined in 40 CFR 122.2." 10 CSR 20-6.200(1)(D)16.

Non-Structural Controls: Pollution prevention practices that focus on management by limiting or eliminating pollutants before they mix with stormwater. Non-structural controls may include but are not limited to; site and land use planning, vegetated filters, stream buffers, low impact development (LID), open space preservation, and impervious cover restrictions.

Outfall: "A point source as defined by 10 CSR 20-2.010 at the point where a municipal separate storm sewer discharges and does not include open conveyances connecting two (2) municipal separate storm sewers, pipes, tunnels, or other conveyances which connect segments of waters of the state and are used to convey waters of the state." 10 CSR 20-6.200(1)(D)18.

Outfalls are the point of discharge from the MS4 to waters of the state. Outfalls include discharges from pipes, ditches, swales, and other points of concentrated flow. An outfall is not where a stream or waters of the state leave the municipal boundary.

Owner: "A person who owns and controls the use, operation, and maintenance of a separate storm sewer." 10 CSR 20-6.200(1)(D)20. "Person" is defined by Section 644.016(15) RSMo as "any individual, partnership, copartnership, firm, company, public or private corporation, association, joint stock company, trust, estate, political subdivision, or any agency, board, department, or bureau of the state or federal government, or any other legal entity whatever which is recognized by law as the subject of rights and duties."

Permittee: Refers to the MS4 Operator, or the entities identified as the owner and continuing authority of this general permit.

Stormwater: "[S]torm water runoff, snowmelt runoff and surface runoff, and drainage." 10 CSR 20-6.200(1)(D)31.

Stormwater Management Program: A comprehensive and documented program to manage the quality of stormwater discharges from the MS4.

Stormwater Management Plan (SWMP): The document explaining the MS4's Stormwater Program. It should be a comprehensive document that explains BMPs and the ongoing evaluation of the BMPs, as well as tracking, methods of documentation, and other procedures for each requirement of this permit. The MS4 Operator must utilize the procedures and other supplemental documents contained with or referenced in the SWMP during the activities performed to attain permit compliance.

In this comprehensive general permit, the SWMP details the specific BMPs, time schedules, and other details for the individual MS4 and community, and does not need to be reviewed for approval by the Department during the application process.

Structural Controls: Pollution prevention practices that require the construction, or use of a device, to capture or prevent pollution in stormwater runoff. Structural controls may include but are not limited to: extended detention basins, bio-retention, infiltration basins, stormwater wetlands, bio-swales, vegetative lined ditches, subsurface drains, permeable pavement or concrete, sand filter basins, stormwater planters, proprietary BMPs, storage tanks, and hydrodynamic separators.

Urbanized Area (UA): An area of densely developed territory as defined and used by the U.S. Census Bureau, that may include multiple MS4s. The Census Bureau delineates urbanized areas after each decennial census.

Waters of the State: "[A]ll waters within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or two or more persons jointly or as tenants in common." Section 644.016(27) RSMo.

The definition of Waters of the State takes precedence when applying state regulations.

Part II – Receiving Stream Information

Municipal Stormwater Outfalls:

Applications for MS4 operating permit (renewal or new) require the MS4 to provide information regarding the location of outfalls from the regulated MS4. The NPDES MS4 operating permit covers all discharges from the permittee's stormwater system into waters of the state.

Outfalls listed under the Facility Description in the operating permit only include representative stormwater outfalls. Representative outfalls are outfalls that discharge to the primary stem of principal watercourses in separate sub-regional watersheds and are representative of various land uses. Representative outfalls are listed in the permit as a subset of ALL of the MS4's outfalls. Listing all MS4 stormwater outfalls could add several extra pages to the permit and would require the operating permit to be modified if any outfall changes were made. However, the permittee is required by the operating permit to maintain a map as part of their Stormwater Management Program of all stormwater outfalls that discharge to waters of the state.

Applications for renewal or to receive (i.e., new permit) of the MS4 general permit require the permittee to provide the legal description, outfall number and receiving stream. In addition, the application for both co-permittees and individual MS4 permittees require a United States Geological Survey map showing the locations of the municipality/area in relation to the local road system and to indicate on the map the municipal/area boundary, receiving stream(s), and the map section, township, and range.

From this information, Department permit writers will establish a full description of these permitted features on the permit's certification page with the following:

Permitted Feature ID (e.g., Outfall #001)

Legal Description: ¼, ¼, Section, Township, Range, Direction

UTM Coordinates: X=000000.0, Y=0000000.0 (Easting, Northing respectively)

Receiving Stream: Name & Classification

First Classified Stream and ID: Name, Class, Waterbody ID – currently provided by the department

USGS Basin & Sub-watershed No.: (# – #) [12 digit USGS Hydrologic Unit Code (HUC)]

Applicable Designations of Waters of the State:

Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. This permit applies to facilities discharging to the following water body categories:

- ☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ☒ Lakes or Reservoirs [10 CSR 20-7.015(3)]
- ☒ Losing Streams [10 CSR 20-7.015(4)]
- ☒ Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
- ☒ Special Streams [10 CSR 20-7.015(6)]
- ☒ All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) defines the Clean Water Commission water quality objectives in terms of

"water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses shall be maintained in accordance with 10 CSR 20-7.031(4). A general permit does not take into consideration site-specific conditions.

The Permit Area may change based upon areas incorporated into or removed from the permittee's jurisdictional area during the term of this permit, or expansion of the Urbanized Area (UA). Areas added shall be covered under this permit and reflected in the Stormwater Management Program. For Permittees that are designated due to population density in a UA, which has areas that are not in the UA, the regulated MS4 is the portion which is inside of the UA.

The Department may require the regulated MS4 to submit an application for an alternate or additional general permit. Such as if the permittee is conducting regulated activities that are not covered under this permit but are addressed in a separate Master General Permit.

If the Department disapproves the application or SWMP and requires additional controls which add expenses, then the Department will conduct an affordability analysis in support of the disapproval for the application or SWMP. However, permittees may waive the requirement of the Department to conduct an affordability analysis at any time. If the permittee waives the affordability analysis, the Department shall assume all additional required controls are affordable.

Part III – Stormwater Management Program and Plan:

Stormwater Management Program

This permit, in accordance with 10 CSR 20-6.200 and 40 CFR Part 122, requires the permittee to develop and implement a Stormwater Management Program. The Stormwater Management Program shall address the six minimum control measures; public education and outreach, public involvement/participation process, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management and pollution prevention/good housekeeping for municipal operations. In addition, the Stormwater Management Program addresses TMDL implementation plan components, if applicable.

The Stormwater Management Program also includes, but is not limited to, specific BMPs, relevant local regulations, policies, procedures, interim milestones, measurable goals, measures of success, designation of responsible persons/positions for each of the measurable goals, and any applicable TMDL assumptions and requirements.

Stormwater Management Plan (SWMP)

The SWMP is a documented implementation plan describing a schedule of MS4 program activities including prohibitions of practices, implementation of required practices, development of standards for urban growth, maintenance procedures, education, trainings, inspections, and other management practices to prevent or reduce the pollution of waters of the state.

For this comprehensive permit, a SWMP is required, it does not need to be submitted to the Department as part of the application. The SWMP shall lay out standard procedures and details of the Stormwater Management Program. This document will help ensure consistency and continuity in the Stormwater Management Program.

SWMP Public Notice Procedure:

The MS4 Remand Rule became effective on January 9, 2017 and requires public participation in the permitting process. The comprehensive permit lays out the requirements of the Stormwater Management Program, using the specific SWMP may make an effective method of explaining the Stormwater Management Program.

Stormwater Management Program Ordinances:

To the extent allowable under state or local law, ordinances (or other regulatory mechanisms if a non-traditional MS4) are required to be developed, implemented and enforced within five years of initial permit issuance under the following sections, in accordance with 40 CFR 122.34(b):

Illicit discharge detection and elimination; to prohibit non-stormwater discharges into the storm sewer system, and implement appropriate enforcement procedures and actions;

Construction site stormwater runoff control; to require erosion and sediment controls at construction sites, as well as sanctions designed to ensure compliance; and

Post-construction; to address post-construction runoff from new development and redevelopment projects, and sanctions designed to ensure compliance. The "Missouri Guide to Green Infrastructure: Integrating Water Quality into Municipal Stormwater Management" (May 2012) was written specifically to aid MS4s in developing and implementing the post-construction runoff program. The guide can be viewed at <https://dnr.mo.gov/document-search/missouri-guide-green-infrastructure-pub2446>. The EPA and the Department and certain MS4s have developed compliant model ordinances that may be adapted for use by other interested MS4s.

Stormwater Management Program Reporting Frequency:

The previous version of this operating permit required biennial reporting of the Stormwater Management Program for existing regulated MS4s; however, annual reporting will now be required for existing regulated MS4 permittees in accordance with 40 CFR 122.34(d)(3).

The annual reporting ensures the annual review of the MCMs and overall stormwater management program is being conducted as required in this permit. The annual requirement also ensures there is no further confusion regarding which year the biennial report was

due. The annual submittal of the Stormwater Management Program Report is also consistent with the MS4 Operators who are subject to TMDLs that must submit annual water quality schedules.

The reports shall be reported electronically by the owner, operator, or the duly authorized representative of the MS4 to the Department via the eDMR system. This annual Stormwater Management Program Report can be used by the Department and the public to evaluate the quality and compliance of a MS4's program. A MS4 Operator may consider including additional information with the annual report to show the quality and comprehensiveness of the MS4 program. The report can be used to showcase an outstanding program.

Date	Item	Report submitted to Department
January 1, 2022	Updates to Stormwater Management Plan complete	No (unless requested by Department staff)
February 28, 2022	Annual Stormwater Management Program Report	yes
February 28, 2023	Annual Stormwater Management Program Report	yes
February 28, 2024	Annual Stormwater Management Program Report	yes
February 28, 2025	Annual Stormwater Management Program Report	yes
February 28, 2026	Annual Stormwater Management Program Report	yes

Part IV - Rationale and Derivation of Effluent Limitations & Permit Conditions

Professional Best Judgement:

The permit writer used professional best judgement as a high quality technical opinion developed by a permit writer after considerations of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a NPDES permit.

Previous versions of the MS4 Master General Permit followed federal regulations for the BMPs applicable to Phase II MS4s via the Minimum Control Measures (MCMs) under 40 CFR 122.34(b). BMPs are Technology-based Effluent Limits (TBELs), which then subjects the BMPs to case- by-case determinations using professional best judgement.

The Remand Rule was a non-substantive rule, requiring the permitting authority (the Department) to ensure permit requirements include narrative, numeric, or other types of requirements. Permit requirements that simply copy the language of the federal Phase II regulations without providing further detail on the level of effort required or that do not include the minimum actions that must be carried out during the permit term do not provide clear, specific, and measurable requirements. The permit writer used professional best judgement in deciding the clear, specific and measurable requirements for this permit.

Comprehensive Category Grouping

MS4 designation is based primarily off of population size. Because there is such diversity, even in Phase II MS4s the permit writer wanted to offer differing levels to help in areas where the population of the regulated MS4 impacts the BMPs the most. These groups are used to offer assistance to the smallest MS4s while ensuring the more populated MS4s are targeting the appropriate amount of target audiences and pollutants.

The designated groups only vary in MCM 1 BMPs in areas where target audiences and target pollutants are concerned. In researching audit reports and compliance assistance visits throughout the state certain challenges were seen facing the MS4s with the smallest populations. One noticeable challenge was the lack of variety in target audiences, this was similar to non-traditional MS4 that also have a limited population.

The number of MCM 1 BMPs were the lowest for these in Group A to reflect the lower amount of possible target audiences, the lower population to participate in events, and even the ability of their population to participate in events or behaviors targeted. Class 2 counties were also included in the Group A to reflect the smaller population size those counties. The MS4s in this group may not have industries in their boundaries. There are often no schools, or religious organizations.

The Group B MS4s have a larger population, which will reflect in the number of potential target audiences. The population size ranges from 10,000 to reflect the designation of population of 10,000 for a municipality outside urbanized areas. The MS4s in this group are also joined by Class 1 counties, which have larger populations. These Group B MS4 will have more sub-groups in their population to

target. MS4s of this size will have industries, educational institutions, and other potential target audiences.

The Group C MS4s are the largest of the Phase II MS4s. The Census Bureau identifies an Urbanized Area (UA) as an area meeting the minimum population density requirement, with a population of over 50,000. Missouri has three large UAs; Kansas City, St. Louis, and Springfield. Additionally, as of the 2010 census, there are four other UAs in Missouri. Each of those individual municipalities has a high enough population to have the name designation of an UA. So while the area in that population density must meet 50,000 population as a whole, the main municipality will carry the majority of that population. The population of 40,000 was established as the bottom level for Group C to capture the larger municipalities in these UAs. MS4s of this size will have a variety of industries, educational institutions, and residents to draw from. They will also have a variety of potential pollutants or sources of pollution to target.

Integrated Planning

As noted in the June 5, 2012 EPA memorandum, *“Integrated Municipal Stormwater and Wastewater Planning Approach Framework”* EPA has increasingly embraced integrated planning approaches to municipal wastewater and stormwater management. EPA further committed to work with states and communities to implement and utilize these approaches in its October 27, 2011 memorandum *“Achieving Water Quality through Municipal Stormwater and Wastewater Plans.”*

Integrated planning assist MS4 communities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to prioritize capital investments. Integrated planning can also facilitate the use of sustainable and comprehensive solutions, including green infrastructure, that protect human health, improve water quality, manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.

For more information regarding integrated planning please review both of the memorandums cited above or contact the Department’s MS4 Team.

Maximum Extent Practicable (MEP)

Prior to 1987, municipal stormwater was subject to the same controls as other point sources like industrial and domestic discharges, which was section 301(b) of the CWA. However, in 1987, “Congress retained the existing, stricter controls for industrial stormwater discharges but prescribed new controls for municipal stormwater discharges,” *NRDC v. EPA*, 966 F.2d 1292, 9th Cir. 1992 (*NRDC v. EPA*). This “new control” was established in section 402(p)(3)(B)(iii) of the CWA, which states, *“Permits for discharges from municipal storm sewers – shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, designs and engineering methods, and such other provisions as the Administrator or State determines appropriate for the controls of such pollutants.”*

The argument for “new controls” contained in the case of *NRDC v. EPA* was subsequently supported in the case of *Defenders of Wildlife v. Browner*, in which it was concluded that section 402(p)(3)(B) of the CWA “replaces” the requirements of 301(b) of the CWA with the MEP standard for MS4 discharges, and that it creates a “lesser standard” than section 301(b) of the CWA establishes on other types of discharges. Thus, MEP is a technology-based standard established by Congress in Section 402(p)(3)(B)(iii) of the CWA. As established in the *1999 National Pollution Discharge Elimination System Regulations for Revisions of Water Pollution Control Program Addressing Storm Water Discharges* (64 FR No. 235), MEP is, *“...the statutory standard that establishes the level of pollutant reduction that operators of regulated MS4s must achieve,”* (i.e., not water quality standards).

In addition to indicating that MEP is the statutory requirement, the EPA also clearly stated that MEP is applicable to the six (6) minimum controls measures in 64 FR No. 235, which states, *“The first component, reduction to the MEP, would be realized through implementation of the six minimum measures.”* The description of MEP continues in 64 FR No. 235, with *“EPA envisions application of the MEP standard as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness and should strive to attain water quality standards.”* The iterative process, mentioned is also defined in 64 FR No. 235 with the following, *“...implement an iterative process of using BMPs, assessment, and refocused BMPs, leading toward the attainment of water quality standards.”*

Ninth Circuit court ruling in *EDC v. EPA* (2003) found that the Phase II rule requirements for small MS4 General Permits violated the CWA. The court ruling found a lack of permitting authority review and lack of public participation in permit process. The MS4 Remand Rule was promulgated December 9, 2016 and became effective on January 9, 2017 as a result of this ruling. The Remand Rule requires more stringent public notice requirements and authorization requirements, including SWMP review, approval, and incorporation for two-step general permits. There is not review, approval or incorporation for this Comprehensive permit.

The Remand Rule ensures permit requirements include narrative, numeric, or other types of requirements such as:

- Implementation of specific tasks or best management practices (BMPs)
- BMP design requirements, performance requirements
- Adaptive management requirements
- Schedules for implementation and maintenance
- Frequency of actions.

All requirements in this permit must be expressed in clear, specific, and measurable terms. This applies to any part of the permit addressing the six MCMs, TMDLs, and Stormwater Management Program Reports. MCMs were not intended to serve as stand-alone permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions that meet the MS4 permit standard. Verbatim adoption of the MCMs from the Federal regulations will not satisfy this requirement.

Measurable Goals

Measurable goals are designed objectives or goals that quantify the progress of program implementation and performance of BMPs. They are objective markers or milestones that the permittee uses to track the progress and effectiveness of BMPs in reducing pollutants to the MEP. At a minimum, measurable goal should contain descriptions of actions that will be taken to implement each BMP, what is anticipated to be achieved by each goal, and the frequency and dates for such actions to be taken. BMPs and measurable goals are the mechanisms used to establish a clear and specific baseline against which future progress at reducing pollutants to the MEP can be measured.

There are a number of different ways the permittee can establish measurable goals. Examples of potential measurable goals include the following:

- **Tracking implementation over time** - Where a BMP is continually implemented over the permit term, a measurable goal can be developed to track how often, or where, this BMP is implemented.
- **Measuring progress in implementing the BMP** - Some BMPs are developed over time; a measurable goal can be used to track this progress until the BMP implementation is completed.
- **Tracking total numbers of BMPs implemented** - Measurable goals can be used to track BMP implementation numerically (e.g., the number of wet detention basins in place or the number of people changing their behavior due to the receipt of educational materials).
- **Tracking program/BMP effectiveness** - Measurable goals can be developed to evaluate BMP effectiveness, for example, by evaluating a structural BMP's effectiveness at reducing pollutant loading, or evaluating a public education campaign's effectiveness at reaching and informing the target audience to determine whether it reduces pollutants to the MEP. A measurable goal can also be a BMP design objective or performance standard.
- **Tracking environmental improvement** - The ultimate goal of the NPDES stormwater program is environmental improvement, which can be a measurable goal. Achievement of environmental improvement can be assessed and documented by ascertaining whether state water quality standards are being attained, or by tracking trends or improvements in water quality (chemical, physical, and biological) and other indicators, such as the hydraulics or habitat condition of the waterbody or watershed.

Because of changes due to the MS4 Remand Rule, measurable goals are specifically laid out in this permit. The MS4 Remand Rule emphasizes that permit requirements must be expressed in "clear, specific, and measurable" terms, which may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions). These rule modifications do not alter the existing, substantive requirements of the six minimum control measures in 40 CFR 122.34(b).

Examples of measurable goals in this MOR04C (this is not a complete chart of all measurable goals in this permit):

MCM	Requirement	Group A	Group B	Group C	Co-permittee adjustment	Newly designated differences	Reference
1	Target audiences	Residents	Residents; plus 1 throughout permit cycle	Residents; plus 2 throughout permit cycle			Table I 4.1.A
1	Target pollutants	1 per audience	1 per audience	1 per audience			Table II 4.1.B
1	BMPs (outreach material or action)	2 per permit cycle	4 per permit cycle	5 per permit cycle			Table III 4.1.C
1	Participation	1 per permit cycle	2 per permit cycle	3 per permit cycle	1 in boundary of each co-permittee		Table IV 4.1.D
2	Public Notice	30 days	30 days	30 days			4.2.A
2	Public Meeting	30 day advertised	30 day advertised	30 day advertised			4.2.C
2	Update governing board	1 time annually	1 time annually	1 time annually			4.2.F
3	Outfall map	All outfalls, receiving water, boundary or MS4	All outfalls, receiving water, boundary or MS4	All outfalls, receiving water, boundary or MS4		Complete by end of first 5 years	4.3.A

3	Dry weather outfall screening	60% per permit cycle	60% per permit cycle	60% per permit cycle		Locate & screen all in first 5 years	4.3.D
3	Identify priority areas	Identify and evaluate annually	Identify and evaluate annually	Identify and evaluate annually	Each shall identify areas		4.3.H
4	Pre Construction plan reviews	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.B
4	Inspection program	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.C
4	Construction site operator inspection requirements	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.4.E
5	Water Quality post-construction BMP standards	Standards for structural controls and non-structural controls	Standards for structural controls and non-structural controls	Standards for structural controls and non-structural controls			4.5.B
5	Pre Construction plan reviews	Each land disturbance site	Each land disturbance site	Each land disturbance site			4.5.C
5	Long term operations and maintenance agreements	All new post-construction water quality BMPs	All new post-construction water quality BMPs	All new post-construction water quality BMPs			4.5.D
5	Water Quality post-construction BMP inspection	60% per permit cycle	60% per permit cycle	60% per permit cycle			4.5.E
6	Training	1 time annually	1 time annually	1 time annually			4.6.A - 4.6.C
6	List of MS4 owned/operated NPDES facilities	Continuous, update annually	Continuous, update annually	Continuous, update annually			4.6.D
6	On site pollutant controls	Continuous, update annually	Continuous, update annually	Continuous, update annually			4.6.F
6	Washing (vehicles and equipment) procedures	Continuous	Continuous, update annually	Continuous, update annually			4.6.H

Modifications

Minor modifications to BMPs or implementation may be allowed under this Comprehensive General Permit, if the changes do not alter the permit requirements.

As an example, the MS4 permit requires tracking for construction sites including plan reviews, inspections, and enforcement actions. The MS4 Operator used a central excel sheet, but now has the ability to purchase software that will store checklists for each step. This is considered an alteration in a BMP and is not a major modification as the permit requirement is still in effect.

Minimum Control Measures (MCMs)

The NPDES Permitting authority must include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Terms and conditions that satisfy the requirements of this section must be expressed in clear, specific, and measurable terms. Such terms and conditions may include narrative, numeric, or other types of requirements (e.g., implementation of specific tasks or best management practices (BMPs), BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and frequency of actions) per 40 CFR 122.34(a).

In general, the Phase II MCMs as described in the federal regulation are not intended to serve as permit requirements, but rather areas of stormwater management that must be addressed in the permit through clear, specific, and measurable terms and conditions. Relying on the literal adoption of the MCMs from the federal regulations will not meet the requirement to establish clear, specific, and measurable permit requirements under the MS4 remand rule.

MCM 1 Public Education and Outreach on Stormwater Impacts

Terms and conditions related to this MCM are in accordance with 40 CFR 122.34(b)(1).

Public education and outreach is vital, as an informed and knowledgeable community is central to the success of a stormwater management program. Everyone has a part to play in both contributing to stormwater runoff and protecting water quality.

The MS4 Operator has the flexibility to choose which target audiences make sense for their MS4. The MS4 Operator can choose the audience, the medium, and the specific message. By educating the residents, the MS4 can help ensure greater support for stormwater management measures, and the public gains a greater understanding of the reasons why stormwater management programs are necessary and important. Public support is extremely beneficial for MS4 operators to institute new funding initiatives for the stormwater program or in seeking support or volunteers to help implement the program.

Education to schools or youth will reach the next generation of residents, and they can bring their lessons home. Businesses of all types have potential to impact urban stormwater. Retail, restaurants, manufacturing, even home based businesses bring their own potential issues. Plastic bags, litter, grease disposal, open garbage containers, and improper disposal methods should be evaluated and be seen as educational opportunities. Formal organizations such as Rotary Clubs, Lions, Churches, sports teams, or college organizations, can support the messages and provide audiences ready to listen, learn, and even help. In MS4s where development is happening, or being encouraged, educating developers is a great way to get in front of issues, and improve compliance with MCM #4.

The MS4 can target the education provided to specific groups. In educating Homeowner Associations (HOAs), for example, pollutants specific to them, such as fertilizer usage, car washing practices, stream buffers, and proper disposal of organic and household hazardous waste can be reviewed and specific BMPs and guidance provided to the HOAs to manage these pollutant sources. This audience can also be informed on maintenance of post-construction water quality facilities or ways they as homeowners can improve the quality of stormwater runoff. Another specific group that may be addressed is industrial facilities. Industrial facilities will bring potential new issues with the products or the production processes. Looking at each facility, and offering education based on the stormwater concerns, can reduce the pollutants in the runoff and diminish larger issues in the future.

Some MS4s may have a valid reason to include another target audience to their education program. If an area has a high level of tourist this may be a good target. If the area is retrofitting basins, the neighboring homeowners may be a target audience. It is part of the Missouri Nutrient Loss Reduction Strategy to enhance public involvement and education of nutrients in urban stormwater runoff. Residents can learn practical ways to decrease nutrients into the stormwater. Educating people on ways they can make an impact on a bigger picture can cause small changes which will add up. Focusing on trash is a way to show MS4 audiences the problem with a very visible media. By seeing how litter travels in the stormwater, it is easier to understand how smaller pollutants, such as oils, heavy metals, nutrients, or bacteria travel through the stormwater.

Tracking is important to ensure the target audiences are getting the information about the targeted pollutants. Many MS4 programs will see cycles of when education for certain topics is needed more than other topics. Learning through tracking and adaptive management will help the MS4 get effective education to the audiences.

Encouraging multiple stakeholder groups to become involved in the Stormwater Management Program will help foster a greater understanding of urban stormwater runoff and the potential impacts that can come from daily life in an urban setting. Because impacts are made in stormwater at businesses, and at home, it is vital to reach as many different groups as possible. Making the topic of stormwater management a relatable issue will help to get the message across, and give the recipients more reason to make changes.

When people participate in an activity, the underlying message becomes more tangible, and their personal impact has a stronger tie to the message. There are many ways to get people involved, and these ways will ideally reach different groups. Communities may already have philanthropic organizations willing to assist the permittee with activities. The Missouri Stream Team program is available state wide and engages in most of the activities listed in Part 4.2 of this permit. Learn more at mostreamteam.org or contact StreamTeam@mdc.mo.gov.

The MS4 Operator shall offer support of their own in conjunction with or to organizations helping with participation activities. There are a variety ways to offer support to groups who plan or organize events. By engaging with the groups or individuals creating these participation opportunities, the MS4 Operator can find ways to help in a manner which fits them, and really impacts the activities positively.

Co-permittees may gain a lot by sharing resources for much of the Stormwater Management Program. However, a part of the participation element is having the connection between behavior and action. It is important to have events located in the area of each MS4 in a co-permit to gain ownership and accountability in the local stormwater management program. A visible activity in a physical or geographic area will impact those in that same area, which is a large part of what makes this MCM work.

In working to establish a specific minimum of BMPs, the permit writer used professional best judgment. In looking at a calendar year, there are three seasons which are conducive to outdoor activities. Likewise the calendar could be seen as quarters, or as a traditional school year plus summer break. Tracking is important to ensure the target audiences are getting the information about the targeted pollutants. Many MS4 programs will see cycles when education is more needed for certain topics, such as seasonal changes, or a re-education on a topic after a few years to remind the audience. Learning through tracking and adaptive management will help the MS4 get effective education to the audiences.

Recording elements such as the number of participants, the amount of litter collected, trees planted, or audience attending will help the MS4 Operator understand if the activity was useful or not. Attendance sheets, receipts, Stream Team Activity Reports, or a spreadsheet can be used to keep track of events and results. Sometimes events may be less attended than anticipated, but the MS4 Operator should consider that even a small impact is still an impact. When using adaptive management properly, adjustments can be made and the activity can be repeated.

MCM 2 Public Participation

This MCM is required in accordance with 40 CFR 122.34(b)(2).

The Stormwater Management Program shall use the same procedure as the Master General Permit because the Management Program is the part that is specific to the MS4 it was created for. Following the public notice processes laid out in Part 4.2 of this permit will give the public the opportunity to comment on or learn about the Stormwater Management Program.

The MS4 Operator does not need to create a stormwater management panel or committee. Having such a panel or committee will give the MS4 Operator a more immediate way of getting public representation involved and getting feedback from the public. A board with a diverse membership can enhance a stormwater management program by getting multiple viewpoints. Involving so much feedback and input will help gain backing from the residents and this understanding of the program will garner support when needed.

Giving updates on the Stormwater Management Program to the governing body or board can help the decision makers understand the reasons behind the processes and the benefit a healthy stormwater management can have on the economic value to their area. This update can be an opportunity to show successes in the program, and may be in done in conjunction with preparing the Stormwater Management Program Report. These updates may be given as an in person presentation, as a written document, or via another method that will get the message effectively to the board.

MCM 3 Illicit Discharge Detection and Elimination (IDDE)

This MCM is required in accordance with 40 CFR 122.34(b)(3).

An outfall is any point where a separate storm sewer system discharges to waters of the state, which is owned or operated by the permittee. Outfalls include discharges from stormwater conveyances such as pipes, ditches, swales, gutters, and other points of concentrated flow.

An outfall does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the state and are used to convey waters of the state (such as culverts). If waters of the state flow through a channelized area, this remains waters of the state, not an open conveyance.

Outfalls are not where streams leave the municipal boundaries of an MS4. Outfalls are not limited by size, as illicit discharge can travel through any size outfalls, even those that are small. While larger outfalls may collect more drainage from a larger area, small outfalls were also constructed to convey stormwater and are equally likely to have illicit discharges. Overland flows, or areas of non-concentrated or sheet flow, are not considered to be outfalls. Therefore they are not required to be mapped. Where a conveyance ends and discharges to a BMP, such as a vegetated area, and there is no conveyance to waters of the state, the conveyance end is not an outfall if the discharge does not reach waters of the state.

Mapping all MS4 outfalls is vital to a functioning illicit discharge program. Outfalls mapping gives the MS4 Operator a starting point to trace back to the source. Knowing the locations of outfalls and receiving waters are necessary to be able to conduct dry weather field screening for non-stormwater flows and to respond to illicit discharge reports from the public. Outfalls must be mapped no matter their size.

Mapping the storm sewer system which leads to those outfalls will further assist in illicit discharge tracing. Once an illicit discharge is detected at an outfall, it will be necessary to trace the discharge through that portion of the storm sewer system leading to the outfall in order to locate the source.

Because privately owned storm sewers and conveyances were authorized by a municipality or the county to become connected with the municipal system, the municipality or county with the MS4 permit does have responsibility for that stormwater. Facilities owned by homeowners associations, for example, are subject to local codes, ordinances, and enforcement. The municipalities are responsible, therefore, for discharges of wastes from private stormwater conveyance systems. Therefore enforcement actions shall take place if an illicit discharge is detected from a private outfall. So while the outfalls from such private stormwater conveyances and outfall are not required for mapping, it is recommended to do so in order to assist with illicit discharge investigations and enforcement.

Ongoing dry weather field screening for non-stormwater flows is a strong tool for detecting illicit discharges. This process will verify outfall locations by walking, wading or even using a boat in the streams or along the streambanks and shorelines. Evidence of past non-stormwater flows, trash, improper yard waste disposal, along with the structural integrity of the storm sewer system can be found.

The field screenings are important in relation to priority areas. The field screening may identify new priority areas (problem areas) or the MS4 Operator may conduct more frequent screenings in the priority areas. When considering where priority areas are, look at land use on the watershed. Priority areas may be industrial areas, areas with a concentration of food establishments with grease disposal, or parts of the city with older infrastructure which may have cross contamination from aged domestic sewers, or an area of retail where litter may be an issue. The MS4 Operator should consider all types of pollutants when determining priority areas.

Investigating pollutants may involve sampling for the following parameters: specific conductivity, chloride, ammonia, nitrates, potassium, surfactant and/or fluorescence concentration, pH, *E. coli* and other chemicals indicative of suspected sources. Useful observations of any physical characteristics of the discharge include: flow rate, temperature, odor, color, turbidity, floatable matter, deposits, stains, and impacts to vegetation or wildlife.

The MS4 Operator does not need to have the sample analyzation equipment, they must at minimum maintain a contract lab relationship so the samples can be taken and analyzed. For guidance on illicit discharge investigations, and parameters to sample for see: https://www.epa.gov/sites/production/files/2015-11/documents/sw_idde_pittbacklit.pdf Or https://stormwater.pca.state.mn.us/images/b/b2/Final_IDDE_Field_Guide_HRPDC.pdf

The program must include procedures for tracing the source of an illicit discharge. Once an illicit discharge is detected and field tests have provided source characteristics, the next step is to determine the location of the pollutant source. The map of the storm sewer system is a valuable tool, and is most often the first step in this plan. Techniques for tracing the discharge to its place of origin may include: following the flow up the storm drainage system via observations and/or chemical testing in manholes or in open channels, televising storm sewers, using infrared and thermal photography, conducting smoke or dye tests.

Education efforts in resolving the problem should occur before taking legal action; however, the MS4 needs to have the ability to enforce the IDDE plan. The procedures for removing the source of the illicit discharge will vary depending on the source of the discharge. The plan may include notifying the property owner and specifying a time for the owner to eliminate the discharge. Additional notifications and escalating legal actions, if needed, should also be described in this part of the plan. The MS4 Operators should consider creating an enforcement response plan, including the ability to collect cleanup and abatement costs from the responsible party. The MS4 Operator should also maintain contacts for environmental cleanup and environmental emergency response.

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <https://dnr.mo.gov/waste-recycling/investigations-cleanups/environmental-emergency-response>.

Each MS4 will need to determine their own priority areas. However, if an area receives three complaints or reports of separate events within a six month range, the MS4 must prioritize this area until the source is determined.

The MS4 Operator must have procedures for responding to reports of illicit discharges. Actions taken under the illicit discharge program should be documented. The MS4 Operator must use tracking to show progress is being made to eliminate illicit connections and discharges.

Illicit discharges may originate in one MS4 jurisdiction and cross into another MS4 jurisdiction before being discharged at an outfall. The MS4 that detects the illicit flow is expected to trace it to the point where it leaves their jurisdiction and notify the adjoining MS4 of the flow, and any other physical or chemical information. The adjoining MS4 shall then trace it to the source or to the location where it enters their jurisdiction. The process of notifying the adjoining MS4 should continue until the source is located and eliminated.

MCM 4 Construction Site Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(4).

Polluted stormwater runoff from construction sites often flows to MS4 storm sewers and is ultimately discharged into local waterbodies. Of the pollutants that have the potential to be discharged, sediment is usually the main pollutant of concern. According to the 2000 National Water Quality Inventory, States and Tribes report sediment as one of the most widespread pollutants affecting assessed rivers and streams, second only to pathogens (bacteria). Sources of sediment include agriculture, urban runoff, construction and forestry. However, sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands and 1,000 to 2,000 times greater than those from forest lands.

During a short time period, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation and contribution of other pollutants from construction sites can cause physical, chemical, and

biological harm to Missouri's waters.

The MS4 Operator must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre. There must be control through ordinances and/or other regulatory mechanism, such as a permit for land disturbance or grading activity.

Site Plan Review ensures the implementation of appropriate BMPs on construction sites to control erosion and sediment along with litter and other wastes at the site. To determine if a construction site is in compliance with such provisions, the MS4 operator can review the site plans submitted by the construction site before ground is broken. Plan reviews can aid in compliance and enforcement efforts since they alert the MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities. Reviewing non-structural BMPs first shall help make sure a more appropriate order of operation is being maintained. This may prevent actions such as removing trees only to install a permanent structural BMP which has the same effect as the removed trees. The structural BMPs may also reduce the quantity of runoff, which will have an influence on any permanent structural BMP.

Land disturbance activities, such as clearing and grading the land surface, increases the potential for sediment discharges. Clearing reduces the natural uptake of water and nutrients by vegetation and excessive grading can smooth the ground surface, increasing amount and velocity of runoff. Vegetation inhibits erosion as the roots hold the topsoil in place, while leaves protect the surface against rain. Once the vegetative cover is gone, erosion is accelerated. The longer the exposed area is subject to erosive forces, the more severe the effect.

The goal for this land disturbance program, should be to expose the smallest practical area of land, for the shortest possible time, to eroding forces. Phased construction minimizes the amount of land exposed at one time.

When the site becomes active, BMPs must be in place and the permittee inspection and enforcement activities must begin. To ensure that the BMPs are properly installed, the permittee is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Procedures include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, the characteristics of soil and the receiving water body's quality. Inspections give MS4s an opportunity to provide additional guidance and education, issue warnings, or assess penalties.

Each site shall self-inspect to ensure their compliance with the regulations of both the MS4 and the State of Missouri Clean Water Law. An MS4 may require the site operator submit their self-inspection reports to the MS4 Operator as a form of oversight, tracking of compliance, or issues with the site. For consistency the requirements mirror the requirements of the current Missouri State Land Disturbance permit.

To fully ensure compliance the MS4 Operator must conduct oversight inspections as well. The MS4 Operator may choose to contract out these inspections to qualified inspectors, or consultants. If choosing this option, the MS4 Operator must make it clear to the site operators that the inspections are being conducted on behalf of the MS4. The oversight inspections must be conducted at a frequency which ensures compliance, but not so often that the site operator can use the MS4 oversight inspections as their own inspections. Too frequent oversight inspections may cause the inspector to become complacent or too familiar with the site or the personnel. Inspections can be used as educational opportunities from the inspector to the site operator.

Plan reviews before construction begins will help to identify priority site based off of site characteristics. Past inspections and the tracking of compliance issues may also assist in this identification if there have been issues with particular construction site operators or neighbors in the area of a site. Final inspections performed after the completion of the land disturbance project, ensure the site is properly stabilized, clean of solid waste and temporary BMPs. Terminating the Missouri Land Disturbance permit will reduce the number of NPDES permits open in that MS4 service area. Documenting inspections, such as with a checklist, will be evidence that the inspections are being conducting, ensure thoroughness and uniformity for the inspector. These documents be used to show the site operators that the inspectors are being consistent between sites.

MS4 staff must have enforcement tools available if they observe noncompliance with the MS4 regulatory mechanisms. The tools available may be notices of violation, stop work orders, or withholding of funds. These tools and mechanisms, and how to use them, should be described in the SWMP. The SWMP should also list who can use the enforcement tools, enforcement follow-up actions, such as follow-up inspections; how and when enforcement is escalated if the violation isn't corrected, and documentation requirements.

Having an inventory of all sites with relevant contact information and project information ensures the MS4 Operator is aware of the projects in their area. The tracking of sites is useful not only for the MS4 Operator's recordkeeping and reporting purposes, but also for members of the public interested in ensuring that sites are in compliance.

MCM 4 also includes a requirement to allow the public to report concerns they have regarding construction sites and water quality impacts. An educated public is more aware of sediment runoff and water quality impacts, therefore this may be reflected in the amount of reports of water quality impacts and improper site management increases. 428 Conversely, as education for the developer increases, the amount

of reports on these things may decrease. It should also be noted that while erosion and sediment regulations are typically focused on sediment, MCM 4 is not limited to just sediment. MS4 Operators must enforce construction sites for other types of waste, such as litter or concrete washout.

Many MS4s use existing code or building inspectors to also look at the sediment and erosion aspects of a site. These inspectors must have training, and must understand why the sediment and erosion inspections are of value. The permit writer understands that not all MS4s are able to afford extra training for inspectors, however there are free resources available. Because of the great impact, even one mismanaged construction site can cause a stream to be damaged. The effort and time to establish these training resources to create a training program are necessary to have competent inspectors.

Educating the individual site operators will add more awareness for how to manage sediment and erosion on a site, and why this is important. More information on the Missouri land disturbance permit is found at: <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/stormwater/construction-land-disturbance>.

MCM 5 Post-Construction Runoff Control

This MCM is required in accordance with 40 CFR 122.34(b)(5).

If water quality impacts are considered from the beginning stages of a project, new development and redevelopment provide more opportunities for water quality protection. Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Many studies indicate that prior planning and design for minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

The Phase II rule applies to redevelopment projects that alter the footprint of an existing site or building in such a way that there is a disturbance of equal to or greater than one acre of land. This program requires ordinances, or policies, that address stormwater runoff quality. Post-construction stormwater management can be utilized in ways that preserve and protect in a non-structural way, and in structural items that are used to mitigate the decreased water quality in the stormwater runoff. Because structural and non-structural practices work together, a minimum of one ordinance is required for structural controls and one ordinance for non-structural controls.

Structural controls have traditionally been concrete or “gray” infrastructure created to quickly move the stormwater away from the place it falls. These have caused increased erosion and water quality degradation to the receiving streams. Current standards include water quality as a factor in design, and many standards are actually based on natural systems and rely upon vegetation and soil mechanisms in order to perform as intended. The choice of which structural BMPs are most appropriate comes not as a post-construction fix, but rather as a result of the site design review, which should also look at the stormwater management of the site comprehensively.

Numeric, or technical, performance standards are broken into two types for stormwater discharges, a treatment standard or a volume-based/retention standard. Treatment standards typically specify an amount of pollutant to be managed, for example 80% TSS removal. Volume-based or retention standards typically require the use of infiltration, evapotranspiration or harvest practices to control a specified volume of stormwater onsite and are usually expressed as a volume of rainfall, a percentile storm event or a groundwater recharge volume.

Non-structural controls focus on preserving open space, protecting natural systems, and incorporating existing landscape features such as wetlands and stream corridors into a site plan to manage stormwater at its source. There is also emphasis on clustering and concentrating development, minimizing disturbed areas, and reducing the size of impervious areas.

Both structural and non-structural controls consider comprehensive stormwater management items such as:

- Stormwater should be managed as a resource
- Natural features and systems should be preserved and utilized
- Stormwater should be managed as close to the source as possible
- The hydrologic balance of surface and ground water should be maintained
- Runoff should be slowed down
- Potential water quality and quantity problems should be prevented
- Problems that cannot be avoided should be minimized
- Stormwater management should be integrated into the initial site design process.

The Department has created the Missouri Guide to Green Infrastructure, Integrating Water Quality into Municipal Stormwater Management guidance; <https://dnr.mo.gov/document-search/missouri-guide-green-infrastructure-pub2446>.

Other guidance and model ordinances may be found at the following:

<https://www.epa.gov/nps/urban-runoff-model-ordinances-post-construction-controls>
<https://www.epa.gov/nps/urban-runoff-model-ordinances-aquatic-buffers>
<https://www.epa.gov/nps/urban-runoff-model-ordinances-open-space-development>
https://www3.epa.gov/npdes/pubs/sw_ms4_compendium.pdf
https://www.epa.gov/sites/production/files/2015-09/documents/urban_ch05.pdf
<https://www.epa.gov/green-infrastructure>
<https://www.cwp.org/reducing-stormwater-runoff/>

The MS4 Operator must ensure adequate long-term operation and maintenance of post-construction BMPs. This is accomplished through agreements between the MS4 Operator and land owners or regional authorities. Tying a structural control to the land deed may be adequate for some MS4s. If the agreement is recorded with local land records, any successive owner of the property would take the responsibilities of the operations and maintenance of that structural control in the agreement.

Both structural controls and non-structural controls, must be tracked and inspected. An inspection program must be established to ensure the stormwater controls are working and being properly maintained.

Non-structural controls must also be reevaluated. If an urban growth area was identified, it must be evaluated to ensure is room for more development, or if a new growth area should be found. If open spaces or sensitive areas are protected by ordinances or similar mechanism, these places should be inspected to ensure there is no encroachment of development or by neighboring properties. If impervious areas were minimized, these places should be inspected to ensure no additional impervious areas were added.

Educating MS4 on post-constructions BMPs will ensure the inspections are effective. There are free resources available online such as: <https://www.youtube.com/watch?v=SM9sI9wQgz0&feature=youtu.be>

As the public becomes more educated on post-construction stormwater runoff BMPs and controls, they may have more concerns to report. Through education however, there may be ways an MS4 can also gain participation to assist with maintenance issues, and to also further education on water quality and stormwater management.

MCM 6 Pollution Prevention/Good Housekeeping

This MCM is required in accordance with 40 CFR 122.34(b)(6).

The MS4 Operator's actions, and facilities are the example for the residents of that MS4. Leading by example can be an important component of education.

Training shall be given to any staff that have influence on stormwater for the MS4, not just environmental coordinators. By only focusing the training on a few members, the message will not get out. Each MS4 should take a realistic look at each department, division, and individual. If their work may either negatively impact or positively impact stormwater runoff, they must attend the training.

Training may be broken down into topics and dispersed throughout the year. It may be given in conjunction with other training. There are free resources available online such as;

https://stormwater.pca.state.mn.us/index.php?title=Employee_training
<https://www.youtube.com/watch?v=UxOam2GEVgQ>
<https://www.youtube.com/watch?v=16ubsys6AZY>

While emergency firefighting activities are an authorized non-stormwater discharge, other activities related to a fire department, such as washing of trucks, run-off water from training activities, test water from fire suppression systems, and hydrant pressure testing, are not.

Live and simulated fire training should be conducted at facilities that have been built and engineered specifically for training exercises. These facilities should have run-off controls or BMPs to prevent discharging this water or foam used in training exercises. Any water used during training activities is considered wastewater and will require a separate permit (or de minimis determination) from the Department for discharge or land application. Water that is collected and conveyed to a wastewater treatment facility is not required to obtain a separate permit.

If firefighter training cannot be conducted at a specially designed facility, additional pollution prevention actions will need to be taken before training begins in order to prevent illicit discharges. Additional actions may include; sweeping prior to and after training; blocking off all potentially affected stormwater structures; directing to a sanitary sewer line; if spraying water over a landscape, arch the water so that velocities are dissipated and there is less chance of soil erosion; use dechlorination blankets and/or dechlorination diffusers after/prior to spraying, dispose of ashes and partially burnt debris in dumpsters.

Maintaining an Operations and Maintenance document, or SWPPP for each municipal site will ensure proper management, and behavior at those sites. This document should also include inspections for these sites as a method of checking up on the individual site programs. Inspections, cleaning, and routine maintenance of stormwater structures is necessary to ensure the structures are functioning properly and stormwater is managed properly.

Road salt and other deicers are a safety item for most residents of Missouri. However the chloride concentrations in streams is increasing which can potentially to harm aquatic life and may impair drinking water. So while there is a need for road salt, there are changes that can be made to use less salt and still clear the roads for the safety of the public. This is seen in product management. Loading, unloading and cleanup practices in the loading and parking areas can greatly reduce the amount of salt loss to precipitation and subsequent stormwater. A winter maintenance program which tracks the rock salt use and finds ways to manage the product to reduce loss on the municipal yard is the goal of any BMPs designed and implemented for rock salt. In addition, educating private entities to reduce their usage of salt by incorporating salt reduction practices into their procedures is vital.

In contrast with road salt, brine spreads more evenly, stays where it falls, and begins working immediately. This is because the salt is already in solution. As a result, spraying liquid brine is more effective while using less salt. Beet juice has been suggested as an alternative, however, in practice, the sugar in the runoff has been shown to cause nutrient loading of waterways to increase.

For training or additional resources including application rates please see;
<https://www.wisaltwise.com/Tools/Application-Guidelines-Calculator>
<https://www.iwla.org/conservation/water/winter-salt-watch/road-salt-best-practices>

Yard waste includes any organic debris such as grass clippings, leaves, and tree branches. Research by the U.S. Geological Survey show municipal leaf collection programs have the ability to reduce loads of total and dissolved phosphorus in a given drainage area by 84 and 83%, respectively, and total and dissolved nitrogen by 74 and 71%. This research indicates that nearly 60% of the annual phosphorus yield in urban and suburban environments comes from leaf litter in the fall, making it a huge contributor of nutrients to urban receiving waters.

Removing leaf litter from roads and drain systems means; cleaner streets, safety, and a reduced likelihood of clogged storm drain inlets. Educating residents to not put leaves in, or on storm inlets and/or providing alternate means of disposal can help reduce the amount of effort needed to clean storm drain inlets.

For more information please see;
<https://www.sciencedirect.com/science/article/pii/S0048969716314462>
<https://slco.org/watershed/stream-friendly-practices/dont-dump-debris/>

There is also free training on overall stormwater management for MS4 Operators;
<https://www.torranceca.gov/home/showdocument?id=18591>
<https://njmel.org/mel-safety-institute/webinars/>
https://www.youtube.com/watch?v=Z09Yz_qS1f4
<https://www.youtube.com/watch?v=ACP7DOdOEDE>

Part V – Rationale for General Terms and Conditions:

Clean Water Act section 402(l)

On December 7, 2012, the U.S. EPA promulgated a rule (77FR 72970) clarifying that discharges of stormwater from silviculture activities do not require a NPDES permit. On March 20, 2013, the U.S. Supreme Court ruled that discharges of stormwater that run off from logging roads into ditches, culverts, and channels did not require a NPDES permit as stormwater from industrial activity.

In January 2014, Congress amended Clean Water Act 402(l) to prohibit the requirements of NPDES permits for the discharge of runoff “resulting from the conduct of the following silviculture activities conducted in accordance with standard industry practice: nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage or road construction and maintenance.” In 2016, the U.S. EPA published its decision to not regulate forest road discharges under Phase II stormwater non-permitting programs.

Additional Federal Acts

In accordance with 40 CFR 122.49(b) and (c) the operating permit cites the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA) and places the permittee on notice that the operating permit does not affect, remove or replace the requirements or compliance determination for NPDES operating permits. It is the responsibility of the permittee to determine if activities conducted within their MS4 or stormwater discharging from their MS4 are in compliance with the ESA and NHPA.

Assistance in determining applicability to ESA conditions and requirements can be found on the U.S. Fish and Wildlife Service (FWS) Endangered Species webpage, which is located at: <http://www.fws.gov/Endangered/>. Additionally, the FWS Information for Planning and Conservation (IPaC) web-based project planning tool that streamlines the environmental review process is highly recommended and is located at: <http://ecos.fws.gov/ipac/>.

Assistance in determining applicability to NHPA conditions and requirements can be found on the Department's State Historic Preservation Office Section 106 Review, which is located at: <https://mostateparks.com/page/84371/state-historic-preservation-office>. Additionally, the Advisory Council on Historic Preservation Citizen Guide to Section 106 Review, which explains the process, is located at: <http://www.achp.gov/citizensguide.html>.

In addition to the ESA and NHPA, this operating permit does not affect, replace or remove the requirements and compliance determinations with respect to substances not otherwise covered under a NPDES permit and regulated by federal law under the Resource Conservation and Recovery Act or the Comprehensive Environmental Response, Compensation, and Liability Act.

Anti-Backsliding

Anti-backsliding is a provision in federal regulations CWA §303(d)(4); CWA §402(o); 40 CFR 122.44(l) that requires a reissued permit to be as stringent as the previous permit with some exceptions. The permit complies with Anti-backsliding regulations.

Anti-Degradation

Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

The Department has determined that the best avenue forward for implementing the Anti-degradation requirements into the MS4 general permit is by requiring the appropriate development and maintenance of a Stormwater Management Program.

Application requirements

Small MS4s (as defined under 10 CSR 20-6.200) are to apply and obtain a small MS4 General Permit or site-specific permit in accordance with 40 CFR 122.33 and 10 CSR 20-6.200(5).

Compliance and Enforcement

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri CWL, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Dischargers of stormwater from regulated MS4s, as defined in the Missouri Stormwater Regulations 10 CSR 20-6.200 who do not obtain coverage under this or other Missouri general permits, or under a site-specific NPDES permit, will be in violation of the Missouri CWL and its implementing regulations and subject to civil penalties of up to \$10,000 per violation, per day. For entities covered under a NPDES permit, failure to comply with any NPDES permit requirement also constitutes a violation of the Missouri CWL and its implementing regulations.

Oil/Water Separators:

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

This permit authorizes the operation of OWS for the treatment of stormwater without the requirement to obtain a separate permit. If the OWS treats water other than precipitation which has run across the property (for example: wash water, effluent from shop drains, drips, spills, etc.) the facility must obtain an MOG14 or site specific permit to cover the discharges.

Pesticide Rule

The Department has developed a Pesticide General Permit #MOG-870000 for point source discharges resulting from the application of pesticides. This permit has been developed as a result of federal requirements under NPDES.

The general permit authorizes the discharge of pesticides that leave a residue in water when such applications are made into, over or near waters of the United States. The department has determined that entities most likely affected by this permit include public health

entities, including mosquito or other vector control districts and commercial applicators that service this sector. Others potentially affected by this permit include resource and land management entities, such as public and private entities managing public land; park areas and university campuses; as utilities maintaining easements and right-of-ways; golf courses; and other large residential developments which maintain a large grounds area. In addition, permits may be required for applications involving pesticide use for agricultural related activities when pesticides are applied to crops grown in or near a water of the United States.

The Department is collaborating closely with the Missouri Department of Agriculture, which already administers the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) along with the Missouri Pesticide Use Act, to ensure proper oversight of pesticide applications.

MS4s under this permit are subject to the pesticide rule. To determine if a permit is required, please visit the Department's website. The thresholds listed in Table 1 of the pesticide general permit will assist in determining if a permit is required. If a permit is required, the permittee/facility shall apply for either the Pesticide General Permit or a site-specific pesticide permit from the Department.

Secondary Containment

Prior to release of stormwater in secondary containments, the presence of petroleum sheen and odor must be observed. Steps must be taken if petroleum sheen or odor are observed to remove the petroleum from the stormwater prior to release. All secondary containment valves must remain closed when not actively draining stormwater. Release of stormwater from secondary containment must be controlled so as not to cause physical impacts such as forming rills, transporting solids, or scouring vegetation. If the stormwater is contaminated, the MS4 operator has the option of pumping out the secondary containment and taking it to an accepting wastewater treatment facility for treatment. Causing a sheen to be released to the environment is a violation of this permit and general water quality standards at 10 CSR 20-7.031(4)(B).

Standard Conditions:

The standard conditions Part I are incorporated into this permit, and incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statutes, federal regulations, and the Clean Water Act.

Water Quality Standards

As noted previously, the nature of the MS4 program is technology-based, which is in accordance with Section §402(p)(3)(B)(iii) of the CWA with the establishment of the technology-based standard MEP. Many in the MS4 community believe that MEP is the only standard applicable for compliance determination, which for the most part (specifically for the six (6) minimum control measures, is correct). Given the litigious nature surrounding the “agreeability” of MS4 compliance with WQS, MS4 permits have been the subject of court cases for several years.

40 CFR 122.34(a)(1) clearly requires that the MS4 permit will require the MS4 permittee to, “...develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act.” While this regulation seems to be in contradiction to Section §402(p)(3)(B)(iii) of the CWA due to the fact that it appears to require the permittee to “...protect water quality” and “satisfy the appropriate water quality requirements...” it actually is not; however, has been mistakenly applied to require strict, immediate compliance with WQS even in previously issued Missouri MS4 Master General Permits.

As noted in 64 FR No. 235, “The Court, did, however, disagree with the EPA’s interpretation of the relationship between CWA sections 301 and 402(p). The Court reasoned that MS4s are not compelled by section 301(b)(1)(C) to meet all State water quality standards, but rather the Administrator or the State may rely on section 402(p)(3)(B)(iii) to require such controls.” The discussion continues with, “...the 1996 Policy describes how permits would implement an iterative process using BMPs, assessment, and refocused BMPs leading toward attainment of water quality standards. The ultimate goal of the iteration would be for water bodies to support their designated uses...” and “EPA also believes the iterative approach toward attainment of water quality standards represents a reasonable interpretation of CWA section 402(p)(3)(B)(iii).”

A break-down of 40 CFR 122.34(a) is given in 64 FR No. 235, as follows, “The first component, reduction to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency’s specific determination under the CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward the attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would other point sources.”

Part VI - 303(D) List, Total Maximum Daily Load (TMDL)

Section 303(d) of the CWA requires that each state identify waters that are not meeting water quality standards. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and

providing drinking water for people, livestock and wildlife. The 303(d) List helps state and federal agencies keep track of waters that are impaired but not addressed by typical water pollution control programs. Federal regulations require permitting authorities to develop TMDLs to address impaired waters listed per Section 303(d) of the CWA. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is impaired. Please visit the Department's website to determine if you are listed in an approved or established TMDL at: <https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/tmdl>.

Federal regulation 40 CFR 122.34(a) establishes the requirements applicable to all MS4s with, *"Your NPDES MS4 permit will require at a minimum that you develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act."* EPA translated this regulation into three parts in 64 FR No. 235, as follows, *"The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p)(6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency's specific determination under CWA section 402(p)(3)(B)(iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative BMP process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would to other point sources."*

The above citation of 64 FR No. 235 clearly states that MEP is specific to the six (6) MCMs and clearly establishes that Wasteload Allocations (WLAs) are applicable to MS4s. However, unlike other traditional point sources that utilize treatment facilities, the EPA clearly indicated that attainment of the WLA is to be conducted via *"the iterative BMP process."* Thus, requiring any condition for the attainment of water quality standards in addition to the MCMs is going beyond MEP but the process for attainment of the WLA is still achieved with BMPs using the iterative process of establishing BMPs, evaluating the BMPs, and refocusing on BMPs.

However, just because a WLA for any given pollutant(s) of concern (POC) has been established in a TMDL for a MS4, additional BMPs or modifications to BMPs for the six MCMs should not be required as a trigger action. Rather, the MS4 permittee subject to an effective and approved TMDL should first make a determination if the implementation of their MCMs is adequately meeting the requirements and assumptions of the TMDL. As noted in 64 FR No. 235, *"At this time, EPA determines that water quality-based controls, implemented through the iterative process today are appropriate for the control of such pollutants and will result in reasonable further progress towards the attainment of water quality standards."* While potentially rare this does indicate that no further action may be necessary to implement the requirements and assumptions of the TMDL as the MS4 community may, through successful implementation to the MEP for each of the MCMs, have already demonstrated *"reasonable further progress."* This, rightfully so, places the burden of support on the MS4 community; however, in order for the MS4 community to continue operating only under the six MCMs, the determination of beneficial use re-attainment must be reviewed and timely approved by applicable program staff (i.e., the MS4 Team and Watershed Protection Section staff).

If the requirements and assumptions of the TMDL are not being met, then the MS4 will need to, at a minimum, develop BMPs that target the given POC with the goal or design for the reduction of the pollutant. Due to the nature of stormwater controls via the iterative process, subsequent determinations can and should be made by the MS4 community to determine if *"reasonable further progress"* has resulted in the attainment of the WLA.

In addition to the initial determination or additional BMPs as required in the MS4 general permit, integrated planning actions may be considered as actions taken to specifically restore a waterbody's beneficial uses. Regardless, if the MS4 permittee uses integrated planning or BMPs design to reduce pollutants, other factors need to be considered in accordance with 64 FR No. 235, which states, *"If the permitting authority (rather than the regulated small MS4 operator) needs to impose additional or more specific measures to protect water quality, then that action will most likely be the result of an assessment based on a TMDL or equivalent analysis that determines sources and allocations of pollutant(s) of concern. EPA believes that the small MS4's additional requirements, if any, should be guided by its equitable share based on a variety of considerations, such as cost effectiveness, proportionate contribution of pollutants, and ability to reasonably achieve Wasteload reductions. Narrative effluent limitations in the form of BMPs may still be the best means of achieving those reductions."*

In addition to the above, the TMDL portion of the permit (Part 3) requires the development and implementation of a TMDL Assumption and Requirement Attainment Plan (ARAP). While the TMDL ARAP is not a Schedule of Compliance actions and schedules established in the TMDL ARAP will be subjected to the federal regulations on Schedules of Compliance [40 CFR 122.47]. Specifically if the development and implementation of the TMDL ARAP is to be conducted in a period of time extending one calendar year, then the permittee will be required to report annually for either the status of the development of the plan or for the implementation of the plan based on 40 CFR 122.47(a)(3)(ii).

Regarding the time period allowed for development of the TMDL ARAP (i.e., as soon as practicable not exceeding 30 months), the Department has determined the 30 month time period is appropriate as it allows the permittee the necessary time and flexibility that is

needed to ultimately achieve attainment with the TMDLs assumptions and requirements. The Department has experience in the facilitation of an adaptive SWMP, along with EPA Region 7, with a MS4 community that addressed the assumption and requirements of an applicable TMDL. The time period to develop the adaptive SWMP took more than 30 months, but the assumptions and requirements of the TMDL were more complex than other straight forward TMDLs. Thus, the 30 month maximum time period allows the permittee to determine or develop appropriate BMPs, measurable goals, funding sources, local votes, strategic planning, opportunity to engage interested parties and stakeholders, etc... However, it would be naïve to believe that all regulated MS4s could develop a plan in 30 months, which is why the permit also indicates that the permittee can request an extension to the 30 months.

Permittees seeking approval of the extension will need to provide appropriate justification of why the extension is needed, a revised time schedule of compliance, and reason for failing to meet the 30 month maximum time; however, the allowance of extending the time period beyond 30 months is not guaranteed.

Stakeholder Outreach

In an effort to improve overall effectiveness of the MS4 MOR04 permit renewal process, introduction to the MOR04C permit, and to maximize stakeholder input, the Department published a preliminary draft of this MS4 NPDES permit and conducted extensive outreach for stakeholders in the preparation of the draft MS4 NPDES permits. A listing of stakeholder meetings is as follows:

Meeting Location	Meeting Date	Total attendees	Number of regulated MS4s represented
Jefferson City, MO	March 2, 2020	5	2
Macon, MO	March 3, 2020	7	5
Springfield, MO	March 5, 2020	17	11
Lee's Summit, MO	March 9, 2020	28	18
Poplar Bluff, MO	March 13, 2020	12	8
Web	March 23, 2020	13	10

Additionally, the Department held virtual meetings with municipal permittees in an effort to explain and gather feedback about proposed permit conditions. These meetings were broken down by MCM. Notification of such workshops was provided via e-mail invitation to all provided MS4 contacts in Missouri's permitted municipalities. A listing of each workshop follows:

Meeting topic	Meeting Date	Total attendees	Number of regulated MS4s represented
MCM 1	April 6, 2020	37	23
MCM 3	April 7, 2020	30	21
MCM 6	April 9, 2020	37	23
MCM 5	April 13, 2020	42	29
MCM 4	April 14, 2020	35	24
MCM 2	April 14, 2020	28	17
Other parts of the draft permits	April 20, 2020	40	27

Part VII – Administrative Requirements

On the basis of preliminary staff review and applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the permit. The proposed determinations are tentative pending public comment.

Public Meeting:

A public meeting for this permit was held on July 30, 2020.

Public Notice:

The Department shall give public notice when a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest or because of water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this permit was from September 4, 2020 through October 5, 2020

Date of Fact Sheet: August 17, 2020

SARAH WRIGHT, ENVIRONMENTAL PROGRAM ANALYST
MUNICIPAL SEPARATE STORMSEWER SYSTEM (MS4) PERMITTING COORDINATOR
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - STORMWATER AND CERTIFICATION UNIT
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These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

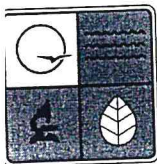
1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**

- a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
- b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

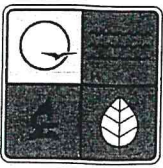
Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
 - d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
 - a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
 - b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission

for applications to be submitted later than the expiration date of the existing permit.)

- c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
 4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
 5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
 6. **Permit Actions.**
 - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - i. Violations of any terms or conditions of this permit or the law;
 - ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
 - iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
 - iv. Any reason set forth in the Law or Regulations.
 - b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
 7. **Permit Transfer.**
 - a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
 - b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
 - c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
 8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

WS #3.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

City of Moberly City Council Agenda Summary

Agenda Number: WS #4.

Department: Parks and Recreation

Date: January 3, 2022

Agenda Item: Amphitheater Proposals

Summary: Advertisement was made and approximately 17 companies were directly reached out to regarding the Request for Proposals for an amphitheater and two alternates.

Attached is the list of the price points received for the Base Bid (amphitheater structure), Alternate 1 (Grading and terraces for grass seating), and Alternate 2 (a concrete service road around the amphitheater).

The Base Bid included the addition of restrooms and a storage room on the back which was not originally a part of the plan. We were hoping if it came in with a modest increase, we could have those available in case any future talent wanted close restrooms/changing rooms behind the stage. The Base Bids came well above what we had hoped and we do not plan on moving that forward. We plan to solicit cooperative bids for a simplified amphitheater as originally planned without restrooms as most talent would prefer (for convenience and safety) utilizing either their tour bus or the Lodge. Simply put, the restrooms on the amphitheater were not a cost effective addition.

We do recommend moving forward with the two alternates so we can get on the schedule of the low bidder while we solicit cooperative bid proposals on the amphitheater structure itself. The low bidder on these is L&J Development for a combined \$108,054.

Recommended

Action: Ask staff to bring a resolution to the January 18, 2022 meeting for approval.

Fund Name: Parks – Capital Improvement

Account Number: 115.041.5502.

Available Budget \$: \$771,062.22

ATTACHMENTS:

<input type="checkbox"/> Memo	<input type="checkbox"/> Council Minutes
<input type="checkbox"/> Staff Report	<input type="checkbox"/> Proposed Ordinance
<input type="checkbox"/> Correspondence	<input checked="" type="checkbox"/> Proposed Resolution
<input type="checkbox"/> Bid Tabulation	<input type="checkbox"/> Attorney's Report
<input type="checkbox"/> P/C Recommendation	<input type="checkbox"/> Petition
<input type="checkbox"/> P/C Minutes	<input type="checkbox"/> Contract
<input type="checkbox"/> Application	<input type="checkbox"/> Budget Amendment
<input type="checkbox"/> Citizen	<input type="checkbox"/> Legal Notice
<input type="checkbox"/> Consultant Report	<input type="checkbox"/> Other _____

Roll Call

Aye

Nay

Mayor

M___ S___ **Jeffrey** ___ ___

Council Member

M___ S___ **Brubaker** ___ ___

M___ S___ **Kimmons** ___ ___

M___ S___ **Davis** ___ ___

M___ S___ **Kyser** ___ ___

Passed Failed

Addendum 1

This addendum addresses questions recently received and updates the original RFP.

- Brush finish to concrete. Urethane coating.
- Insulation preferred in restrooms, though these will be used seasonally.
- 3,000-4,000 Kelvin lighting is preferred on LED lighting to decrease intensity.
- Restrooms should each have a floor drain.
- Sewer runs along the east side of Rothwell Park Road. Water runs along the west side of Rothwell Park Road.
- Tank is anticipated to the downhill to the west (behind) of the amphitheater.
- The project is tax exempt and a tax exemption form (Form 5060) can be provided to the successful bidder.

CITY OF MOBERLY
 Hawthell Park Amphitheater 2pm
"BID OPENING"

Date: 12-10-2021

Byrne + Jones Construction

\$ Base Bid \$578,100.00
 Alternate 1 \$55,000.00
 \$ Alternate 2 \$165,500.00

Integra, Inc.

\$ Base Bid \$ ^{Timber frame} 640,000.00
 1 2 \$ 345,000.00 stick frame w/ modula
 \$ 3 \$ 375,000.00 -metal frame
 Alternate 1 \$30,000.00
 \$ Alternate 2 \$148,000.00

L & J Development

\$ Base Bid \$ 649,016.49
 Alternate 1 \$ 38,502.00
 \$ Alternate 2 \$ 69,552.00

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

City of Moberly Parks and Recreation Request For Proposals

2022 Rothwell Park Amphitheater

1. Introduction

The City of Moberly Parks and Recreation Department is seeking design-build proposals from qualified firms interested in providing architectural, engineering, and construction services for the development of an amphitheater in Rothwell Park.

Written proposals must be submitted to the City Clerk's Office (101 W Reed St, Moberly, MO 65270) no later than **2:00 p.m. Friday December 10, 2021.**

2. General Provisions

Objectives and Intent: The City proposes to build an amphitheater in Rothwell Park near the bottom of the slope to the west of the two pavilions. See attached site plan and conceptual amphitheater. The intent of the RFP is to find a firm for a design-build project that will produce architectural and engineered plans, all associated drawings, specifications, and necessary contract documents and carry out the construction.

Submittals: Responses to the RFP are due back no later than 2:00 p.m. Friday December 10, 2021. Please provide three (3) copies of the proposal and send to the address listed below and clearly marked "Rothwell Park Amphitheater."

Moberly City Clerk
101 W Reed St
Moberly, MO 65270

Reservation of Rights: The City reserves the right to accept or reject any or all bids, to waive any technicalities in the Proposal process, to award any Proposal or portion of a Proposal which is deemed to be the best and/or most advantageous to the City of Moberly, and to make any investigations as are deemed necessary to determine the ability of a bidder to perform the Work. The City reserves the right to reject any or all materials if, in its judgment, the item reflects unsatisfactory workmanship, manufacturing, or shipping damages.

Prevailing Wage: As of August 28, 2018, Missouri's Prevailing Wage Law establishes a minimum wage rate that must be paid to workers on Missouri public works construction projects valued at

more than \$75,000, such as bridges, roads, and government buildings. The prevailing wage rate differs by county and for different types of work. Entities submitting Proposals are responsible for compliance with prevailing wage laws and all other local, state, and federal laws. Current prevailing wage information: <https://labor.mo.gov/DLS/PrevailingWage/pwContractors>

City Business License: Those conducting work related to the Request for Proposal must have or obtain a valid City of Moberly Business License.

Errors and Omissions by the City: No bidder shall be permitted to use to his or her advantage any error or omission in this Request for Proposals or related specifications. Interpretation of

Questions regarding the RFP: If any person contemplating submission of a Proposal is in doubt regarding the true meaning of any part of the Request for Proposals documents, he or she may submit to Troy Bock, an e-mail at tbock@cityofmoberly.com requesting an interpretation or correction of the Request for Proposals documents not later than Friday December 3, 2021. Any interpretation or correction to the Request for Proposals documents will be made by the City by addendum and will be mailed, e-mailed, faxed, or delivered to each bidder of record not less than three (3) days prior to Proposal opening. It shall be the responsibility of each bidder, prior to submitting their Proposal, to contact the person noted in this section to determine if addenda were issued and to make such addenda a part of their Proposal.

Corrections: No erasures permitted. If a correction is necessary, draw a line through the entered figure and enter the corrected figure above it. Corrections must be initialed by the person signing the Proposal.

Modifications: A modification for a Proposal already received will be considered only if the modification is received prior to the time announced for opening of Proposals. All modifications shall be made in writing, executed, and submitted on the same form and manner as the original Proposal. Modifications submitted by telephone, fax, or email will not be considered.

Collusion: By offering a submission to this Request for Proposal, the bidder certifies the bidder has not divulged, discussed, or compared the Proposal with other bidders and has not colluded with any other bidder or parties to this RFQ whatsoever. Also, the bidder certifies that in connection with this RFQ:

- Any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor.
- Any prices and/or cost data for this Proposal have not knowingly been disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the scheduled opening directly or indirectly to any other bidder or to any competitor.

- No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a Proposal for the purpose of restricting competition.

Payment and Performance Bonds

Bidders shall consider the City's requirements for payment and performance bonds when pricing the Work for purposes of bid submittal.

If the anticipated cost of the materials, labor, and associated costs of the Work is estimated to exceed \$50,000, the successful bidder shall furnish to the City a payment bond with good and sufficient sureties to cover the cost for payment of the following:

- Any and all materials incorporated, consumed, or used in connection with the construction of the Work; and
- All insurance premiums, both for compensation, and for all other kinds of insurance, for the Work; and
- For all labor performed in the Work, whether by subcontractor or otherwise.

Additionally, the successful bidder shall provide the City a performance bond (guaranteeing that the contract for the Work will be completed according to its terms, including price and time) with good and sufficient sureties to cover the 100% of the cost of the entire construction contract, including, if authorized increases to cover change orders to such contract.

Insurance Requirements: Bidders are informed that the successful bidder will be required to obtain insurance coverage, which shall contain an endorsement, addendum, or rider amending the general liability policy to include the city as an additional insured, for the following types of insurance and in the following minimum amounts:

- Workmen's Compensation Insurance \$1 million/occurrence, \$2 million aggregate
- Comprehensive General Liability
 - o Bodily injury, including death \$1 million/occurrence, \$2 million aggregate
 - o Property Damage \$1 million/occurrence, \$2 million aggregate
- Comprehensive Automobile Liability
 - o Bodily injury, including death \$1 million/occurrence, \$2 million aggregate
 - o Property Damage \$1 million/occurrence, \$2 million aggregate

Federal Work Authorization Program and Proof of Lawful Presence

- Bidders are informed that pursuant to Section 285.530, RSMo, as a condition of the award of any contract in excess of five thousand dollars (\$5,000.00), the successful bidder shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection to the contracted services.
 - o E-Verify is a qualified federal work authorization program. Additional information about E-Verify can be found at www.uscis.gov/everify.
- Bidders shall also sign and submit with the bid an affidavit affirming that it does not and will not knowingly employ any person who is an unauthorized alien in connection to the

contracted services.

Each submittal shall include the following minimum information: Name, address, telephone numbers (voice and fax), and email of the architectural/engineering firm. A description of the firm's previous experience with park development projects. Examples of any completed projects of similar nature. A detailed schedule showing completion of the required Scope of Services. Estimated fee anticipated to accomplish the proposed scope of services for budgeting only.

Selection: Selection will be based a range of factors including, but not limited to the following criterion:

- Best bid in terms of responsiveness, value, and other considerations in the interest of the City relative to the submitted cost.
- Compliance with ADA, prevailing wage, and other local, state, and federal law.
- Proposal follows guidelines and specifications.
- References, quality, workmanship, lifespan, and maintenance requirements of materials and structure. Warrantee coverage.
- Quality of design. Ensure the pavilion and restroom fit a park setting, a downtown setting, and matching other existing buildings in Depot Park.
- Timeline / schedule stating when the project will commence and be completed.

The City will select the proposal deemed most advantageous considering all factors involved. A consultant will be recommended by City Staff for approval by the Moberly Park Board and City Council, following a recommendation by staff. The City of Moberly is not committed to entering an agreement or contract regarding the scope of services included in this proposal request. The City of Moberly reserves the right to reject any and/or all proposals and to discontinue contract negotiations at any time without bias. The City of Moberly is not financially responsible for any costs incurred in the preparation of a proposal.

3. Scope of Work

The Scope of Services may not include all services required to complete the project. The consultant shall be responsible for determining the extent of information needed to reach an appropriate project completion.

The City of Moberly plans to construct an amphitheater as described in this section and attached conceptual site plan and rendering, that require the following professional services including architecture, engineering, and construction administration.

▪ Base Bid - Amphitheater

The design should take into account the following:

- A half hexagon, bandshell-shaped amphitheater with an opening at the front of 30-35

feet wide and a depth of approximately 20 feet from opening at front to the back wall.

- Located in Rothwell Park, on the slope to the west of the halfway point between the Riley Pavilion and the proposed solar pavilion.
- Amphitheater should have a back wall (3 sides of half hexagon), limited storage area behind the center back wall with door access to stage, and two restrooms (either side of the storage behind back wall with door access to stage) for artist/actor use.
- 10 foot tall side amphitheater walls. Center height a minimum of 15 feet tall at center front of stage with slope to each side (north and south).
- Aesthetically fit a park setting.
- Stage should be one foot above grade at front.
- ADA access to sides of stage.
- A treated wood structure is preferred for appearance and acoustics.
- Incorporate electrical supply (two 220 legs), LED lighting under amphitheater and on each exterior side (north, west, and south) sufficient to illuminate access and for security, and outlets for the amphitheater, restroom, and power supply on stage for future musical and other performances.
- Restrooms should include hotel style PTAC heating and cooling units to allow for artist/actor comfort.
- Stainless hardware.
- Tie into existing water and electrical utilities nearby. For sewer, a buried tank may be used in compliance with local regulations which will be pumped as-needed.
- Project should be built according to building codes as required by Moberly City Code and industry best practices.
- Following completion, grade the project site as necessary, reseed with grass, and cover with straw.
- Structure mounted from roof structure running north to south across the stage on which to mount lighting equipment.

▪ **Alternate 1**

- Provide a cost for creating a consistent grade down to the amphitheater to ensure good line of sight from the entire viewing area eastward to the edge of the parking lot. See attached site plan. Build two retaining walls made of ledge rock or similar stone accepted by the City to create three tiers of seating and a gentle slope. (Site plan shows more tiers than necessary so disregard placement on site plan).

▪ **Alternate 2**

- Provide a cost to construct a 12' wide concrete service road around the pavilion for equipment loading/unloading. Concrete should have sufficient base and thickness for truck/trailer use and allow for drainage at NW and SW corners for stormwater.

Scope of Services

The Scope of Services shall be comprehensive, including schematic design, design development, construction document, bidding and negotiations, and construction administration. Selected firm will coordinate with City staff to gain insight to park needs prior to and during the design process.

Site Design: Service shall include all aspects of site design including but not limited to:

- Erosion and sediment control
- Utility connections and coordination
- Grading elevations

The City intends the successful to act as General Contractor and Project Manager to handle all contract administration. Administration services shall include all aspects of building design including but not limited to:

- Signed and sealed Architectural and Engineering drawings and specification for all aspects of the construction, including but not limited to lighting and electrical system, plumbing, and structural system. All systems specifications shall be based on engineering calculations so as to properly size the systems for the building involved. All drawings and specifications shall be in sufficient detail to obtain fixed construction bids and apply for permits.
- Coordinate pre-construction meeting(s) and construction meetings as needed to help coordinate and answer questions from the City and sub-contractors.
- Review submittals
- Submit for progress payments
- Designs shall meet all building code standards and industry best practices
- Provide a lump sum fee for Base, Alternate 1, and Alternate 2

4. Project Schedule

The tentative project schedule is as follows:

- Project may Commence anytime after February 1, 2022
- Project Completion by June 30, 2022 for base bid and July 31, 2022 for Alternates if approved.

5. Elements of Proposal

Include the following in your proposal:

- Cover letter.
- Project approach. Any deviations from the scope herein shall be clearly designated in the proposal. Include and describe all sub-consultant and sub-contracted services.
- Project team description (with resumes), emphasizing experience and capabilities of key

personnel.

- Description of the project team's past project performance for which your firm has provided services. Include a minimum of five client references that may be contacted by the City including the projects your firm has completed for these clients.
- Projected company workload for service period and ability to perform work for this project given the schedule listed above.
- Additional Information the respondent believes to be relevant to the selection efforts.

6. Special Conditions

Reservations: The RFP does not commit the City to award a contract or defray any costs incurred in the preparation of a proposal.

Public Record: All submitted proposals in response to the RFP become the property of the City and are public record and as such may be subject to public review.

Right to Cancel: The City reserves the right to cancel, for any or no reason, in part or in its entirety, this RFP including, but not limited to: selection schedule, submittal date, and submittal requirements. If the City cancels or revises the RFP, the City will notify all proposers in writing.

Additional Information: The City Reserves the right to request additional information and/or clarifications from any or all entities submitting proposals.

Professional Service Agreement: The selected company will be required to sign a Professional Services Agreement, provide insurance certificates and all other required documentation within 14 days of notice of award.

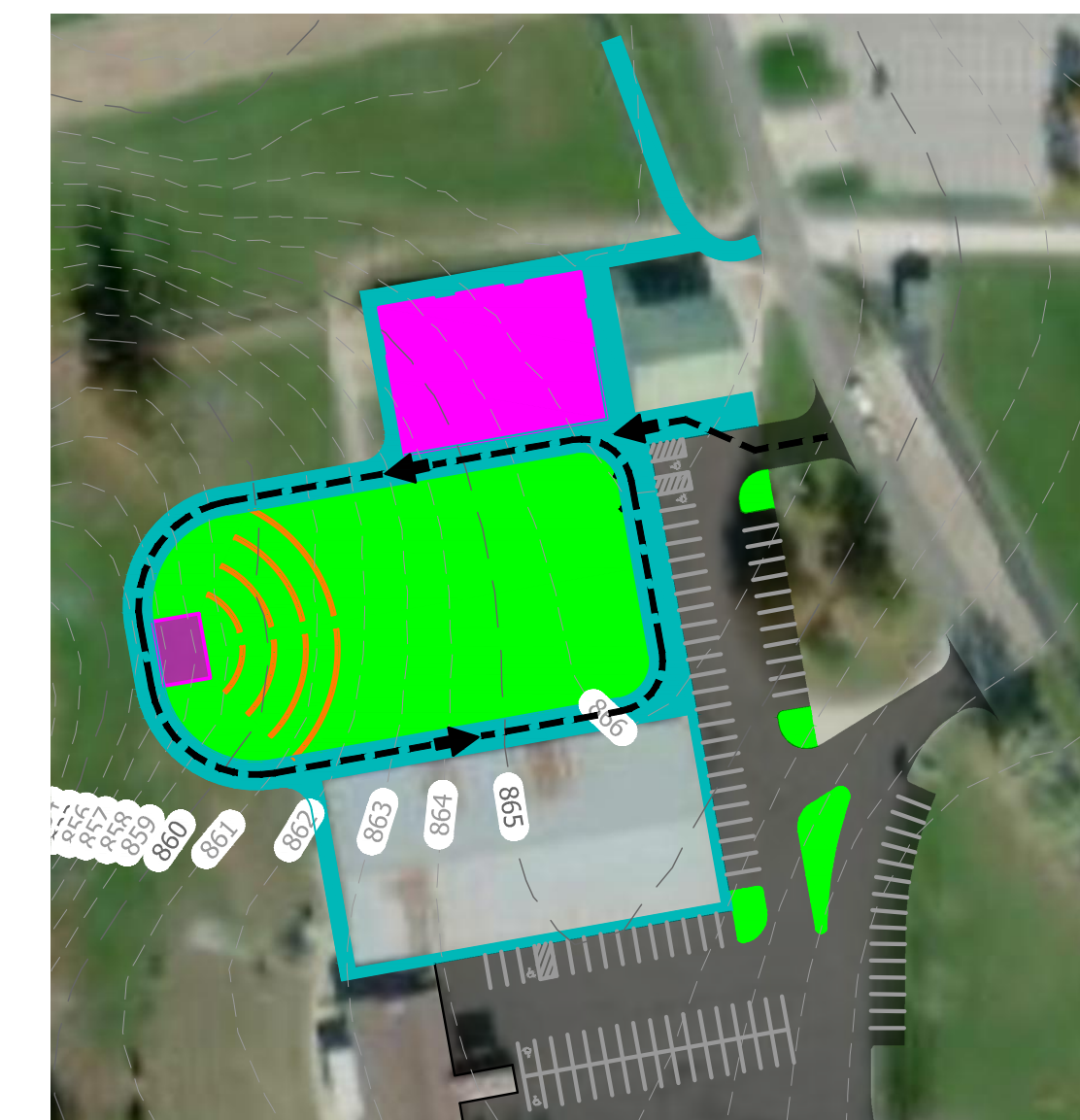
Contact Information:

If you have any questions regarding this request for proposal, or would like to schedule a pre-submittal meeting, please direct calls or emails to:

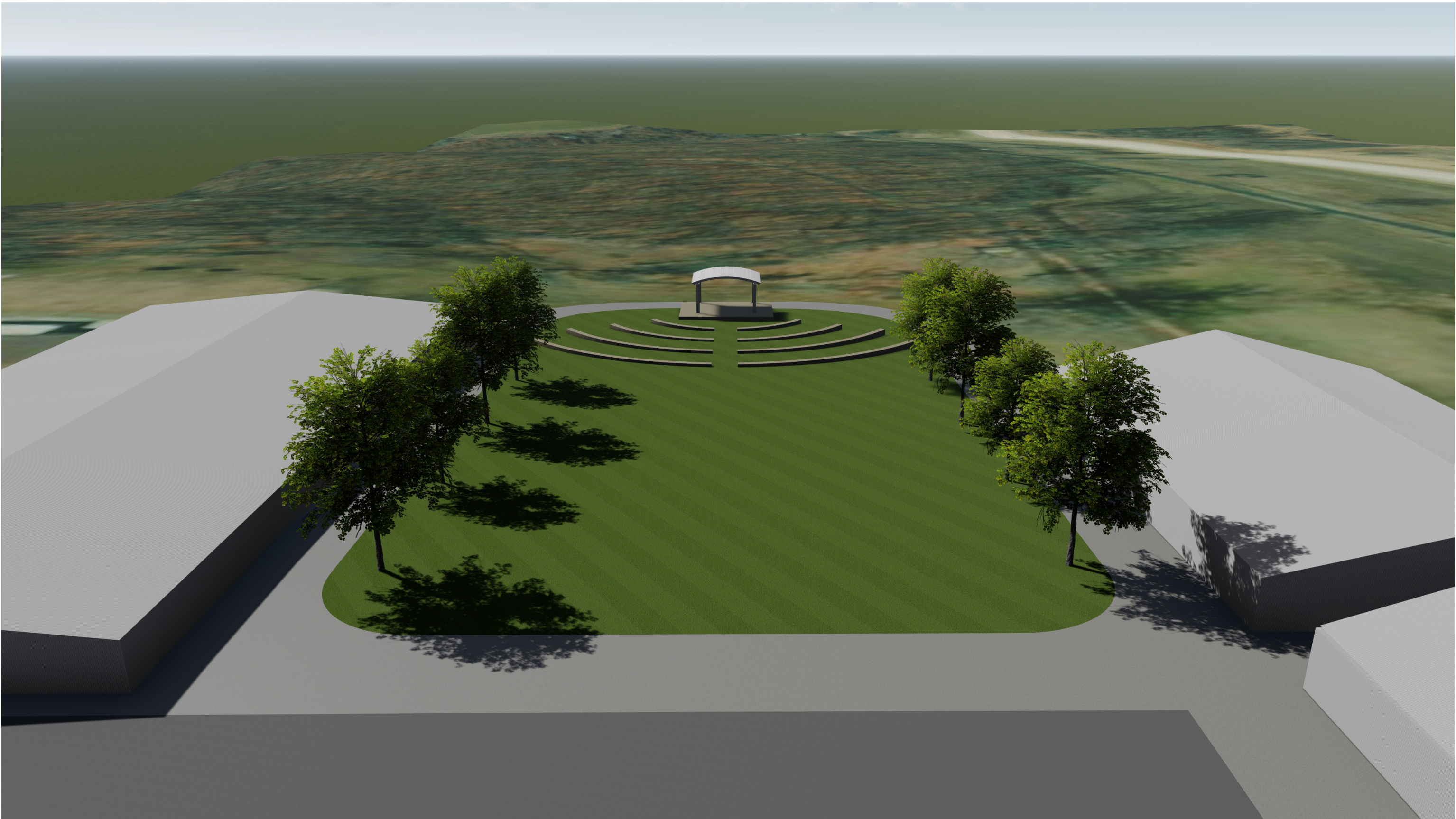
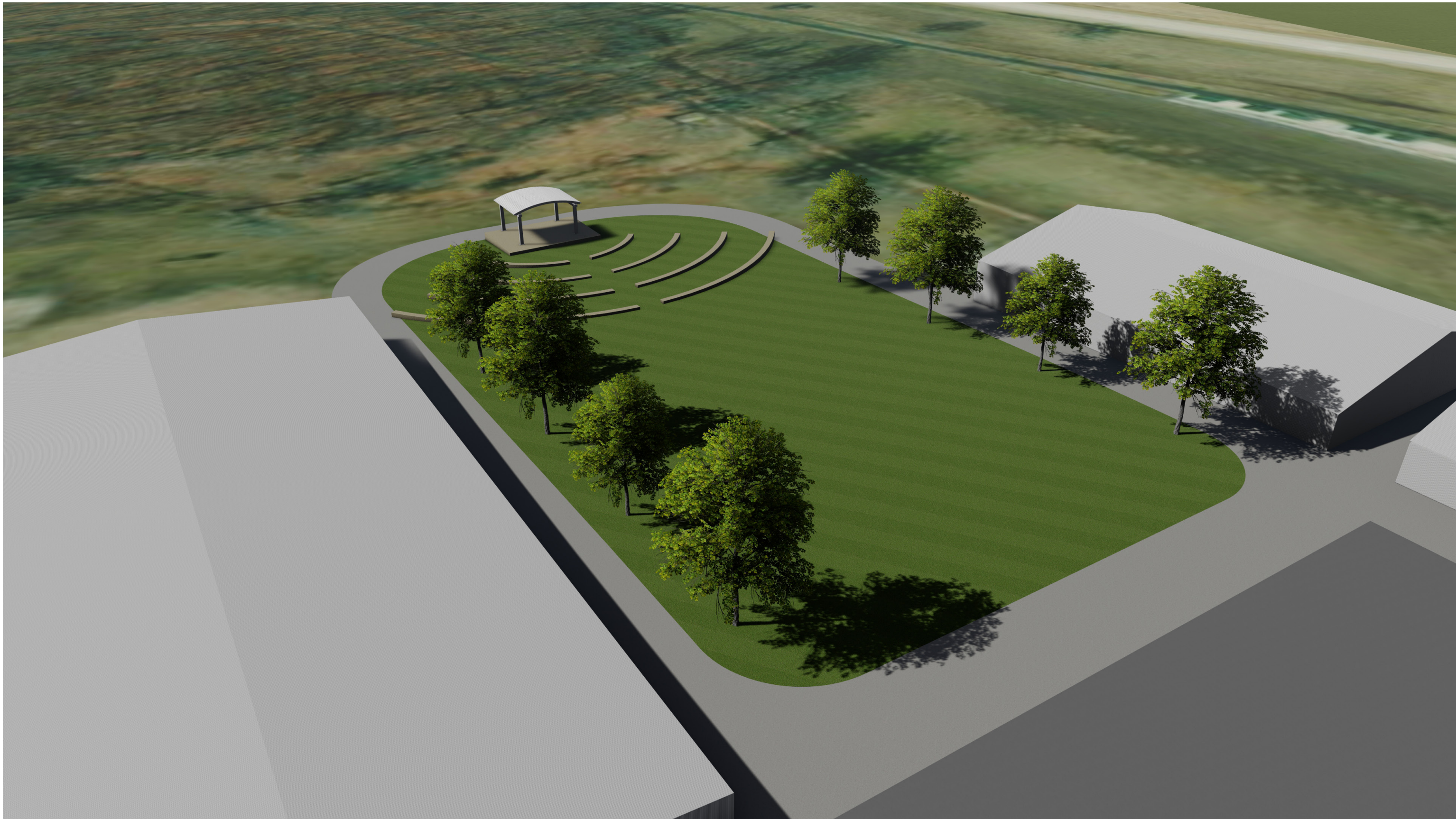
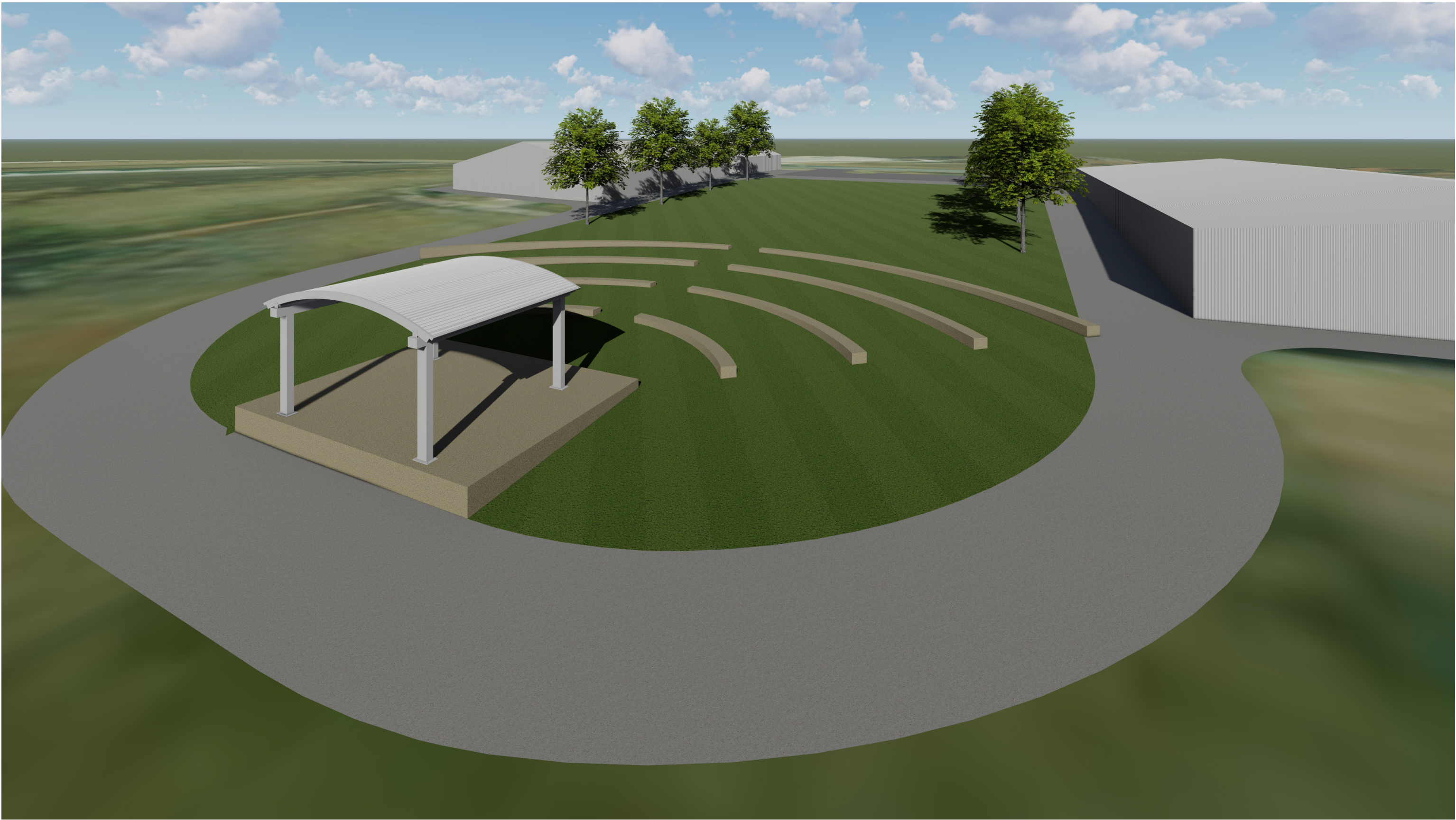
Troy Bock, Parks and Recreation Director, at 660-269-7613 or tbock@cityofmoberly.com.

Authorized Product Representation, Legal Name, and Signature:

Proposals shall clearly indicate the legal name and signature, address, and telephone number of the bidder (company, firm, corporation, partnership, or individual). The signer shall have the authority to bind the company to the submitted Proposal. The successful bidder(s) by virtue of submitting the name and specifications of a manufacturer's product will be required to furnish the named manufacturer's product. By virtue of submission of the stated documents, it will be presumed by the City that the bidder(s) is legally authorized to submit and the successful bidder(s) will be legally bound to perform according to the documents.

[illegible]

Bartlett & West



AMPHITHEATER EXHIBIT
MOBERLY, MISSOURI

Bartlett & West