STORMWATER MANAGEMENT PLAN

.....

CITY OF
CARTERVILLE, MISSOURI
MOR04C002

OCTOBER 2026- SEPTEMBER 2031
PERMIT CYCLE

PREPARED BY:
ALLGEIER, MARTIN AND ASSOCIATES, INC.

Stormwater Management Plan

City of Carterville, Missouri

Permitting Period: Oct. 2026-Sept. 2031

Table of Contents

Part 1 - Facility Information

1.A. GENERAL INFORMATION:

NPDES #:	**MOR04C002**
Facility Name:	Carterville Phase II MS4
Facility Mailing Address:	1200 East First Street, Carterville, MO 64835
Owner's Name:	**City of Carterville, Missouri**
Owner's Physical Address:	1200 East First Street, Carterville, MO 64835
Owner's Mailing Address:	1200 East First Street, Carterville, MO 64835
Primary Contact:	**Jonathan Cook, City Administrator** *
Phone Number:	(417) 673-1341
Email:	admin@cartervillemo.com
Facility Region:	Southwest Region (Main Office in Springfield, Satellite Office in Neosho)
Facility County:	Jasper County, MO
Facility Type:	Small MS4
Facility SIC Code:	9511
Facility NAICS Code:	924110
Facility Description:	Discharges from Regulated Small MS4
Total MS4 Area (acres):	2.06 sq. miles

* If name of Primary 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.

1.B. ADJACENT WATERWAYS:

The permittee discharges to a tributary of one permanently flowing stream (Class P), Center Creek, but not within the City limits, or within 100 feet.

The permittee is not within 100 feet of waters classified as public drinking water supply lakes (L1) or major reservoirs (L2).

The permittee does not discharge to any Wild and Scenic Riverways, Outstanding State Resource Waters, or streams designated for cold-water habitat. Therefore, the permittee is implementing no additional specific provisions for their continued integrity.

The permittee does not discharge within two stream miles upstream of any biocriteria reference locations as defined in 10 CSR 20-7.031.

Some of the Permittee's areas are defined as wetlands in the National Wetlands Inventory.

The permittee discharges directly to Ben's Branch (Section MO_3980), which was delisted for cadmium, lead, and zinc in 2022. The permittee also discharges to an unnamed tributary to Center Creek. Center Creek (Section MO_3203) is listed as Impaired on the 2022 303(d) List for E. coli, but was delisted for cadmium, lead, and zinc in 2022. Both streams are included in the 2022 TMDL for Center Creek and Ben's Branch, in which the MS4 has been assigned a Wasteload Allocation. The ARAP requirements have been waived for the 2022 Center Creek TMDL. See Section 6 of this SWMP for details.

Table 1.B. 303(d) Listed Waterbodies in (or near) Carterville (from 2022 Approved List)

WBID	Waterbody	Year Listed	WB Class	Pollutant	Pollutant Source	TMDL Approved/ WLA Assigned
3980	Bens Branch	Delisted in 2022, due to TMDL	C	Cadmium (S)	Oronogo/Duenweg Mining Belt	2022. WLA shared by all MS4s in Watershed. ARAP waived. (See SWMP Section 6.)
			C	Cadmium (W)	Mill Tailings	
			C	Lead (S)	Oronogo/Duenweg Mining Belt	
			C	Zinc (S)	Oronogo/Duenweg Mining Belt	
			C	Zinc (W)	Oronogo/Duenweg Mining Belt	
3203	Center Cr.		P	Cadmium (S)	Tri-State Mining District	
			P	Lead (S)	Tri-State Mining District	
3203	Center Cr.	2012	P	Escherichia coli (W)	Nonpoint Source	No/No

Waterbody Classification: P = Perennial Stream; C = Intermittently Flowing Stream
Pollutant: (W) = Pollutant is in water; (S) Pollutant is in sediment

1.C. CRITICAL AREAS:

There are threatened or endangered species in the area. (See table below.) The Permittee has met eligibility criteria for protection of threatened or endangered species.
There are critical habitats in the area. (See table below.) The Permittee has met eligibility criteria for protection of critical habitats.
There are no historic properties in the area.

Table 1.C Endangered Species/Critical Habitats

County	Species	Status	Habitat
Jasper	Gray Bat (Myotis grisescens)	Endangered	Caves
Jasper	Arkansas Darter (Eteostoma cragini)	Candidate	Rivers
Jasper	Neosho Madtom (Noturus placidus)	Threatened	Rivers
Jasper	Ozark Cavefish	Threatened	Caves in the Boone & Burlington limestone formations of the Ozark Mountains

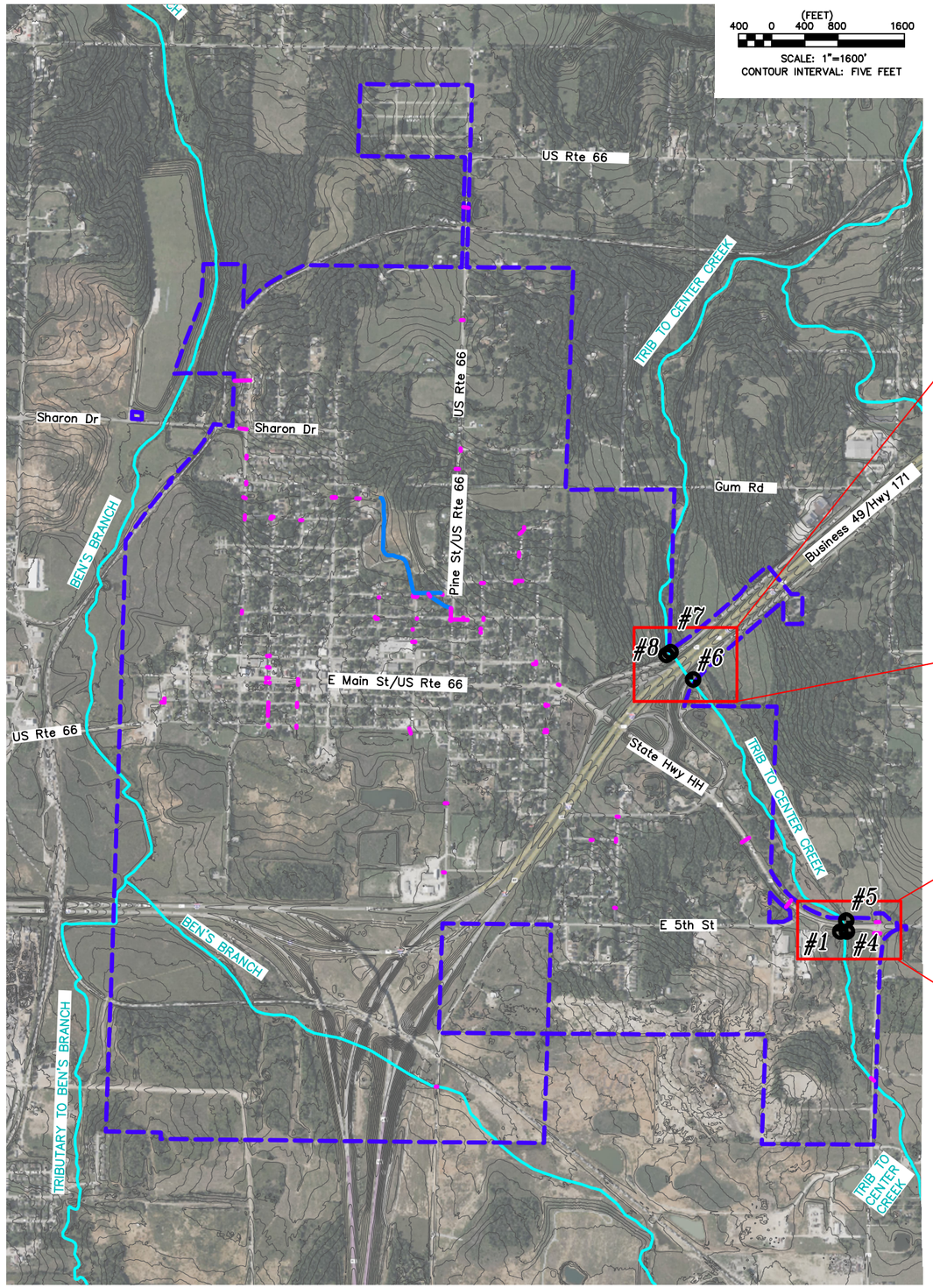
Part 2 – Outfalls

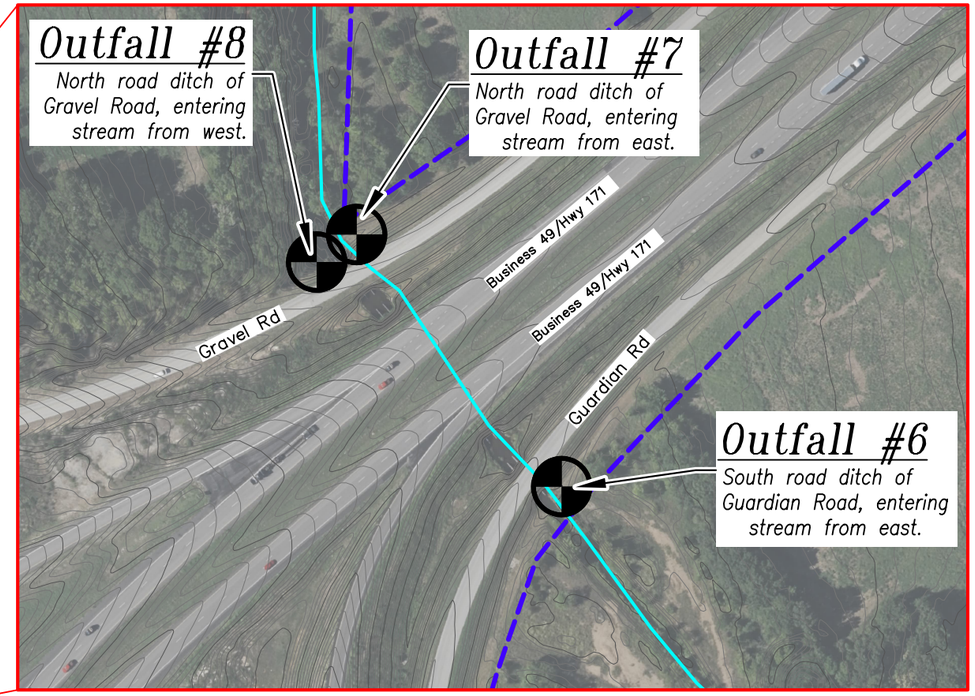
A map and descriptions of Stormwater Outfalls are required under Minimum Control Measure 3. Outfalls locations and descriptions can be found in the following table and Outfall map.

Carterville Stormwater Outfalls

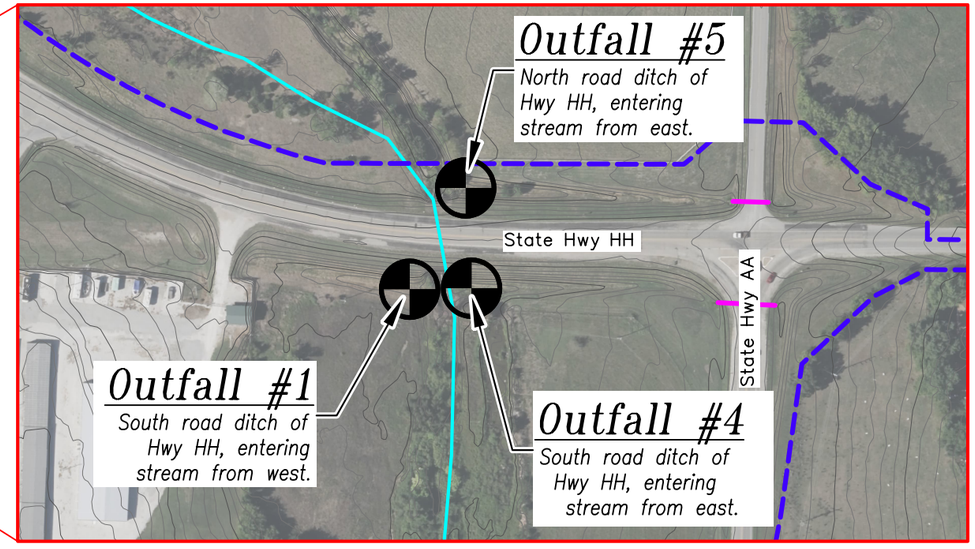
Last updated May 2026

Outfall No.	UTM Coordinates (m) Zone 15 Easting	Northing	Latitude (NAD83)	Longitude (NAD83)	Receiving Stream Name	Receiving Stream Classification	HUC-8	Sub-Water-shed	Date Added	Date Last Verified	Outfall Type and Notes
1	373731.62 E	4111453.36 N	37.140939 °N	94.421716 °W	Trib to Center Creek	C	11070207	_0607	Jan. 2023		Open Conveyance. South road ditch (Hwy HH) entering stream from west.
4	373745.81 E	4111452.04 N	37.140929 °N	94.421556 °W	Trib to Center Creek	C	11070207	_0607	May 2026		Open Conveyance. South road ditch (Hwy HH) entering stream from east.
5	373749.33 E	4111491.05 N	37.141281 °N	94.421523 °W	Trib to Center Creek	C	11070207	_0607	May 2026		Open Conveyance. North road ditch (Hwy HH) entering stream from east.
6	373201.05 E	4112384.60 N	37.149259 °N	94.427846 °W	Trib to Center Creek	C	11070207	_0607	May 2026		Open Conveyance. South road ditch (Guardian Rd) entering stream from east.
7	373118.97 E	4112484.49 N	37.150148 °N	94.428787 °W	Trib to Center Creek	C	11070207	_0607	May 2026		Open Conveyance. North road ditch (Gravel Rd) entering stream from east.
8	373105.19 E	4112477.93 N	37.150087 °N	94.428941 °W	Trib to Center Creek	C	11070207	_0607	May 2026		Open Conveyance. North road ditch (Gravel Rd) entering stream from west.





(FEET)
50 0 50 100 200
SCALE: 1"=200'
CONTOUR INTERVAL: ONE FOOT



LEGEND

- #6 MS4 STORMWATER OUTFALL
- CORPORATE BOUNDARIES
- STREAM (WATERS OF THE STATE)
- STORMWATER SYSTEM–PIPE
- STORMWATER SYSTEM–OPEN CHANNEL
- STORMWATER BMP

Note on Outfall Numbering:
Previous Outfalls #2 & 3 were determined to be outside the corporate boundaries of Carterville and were removed from the Outfall list.

Information Sources:
Outfall locations determined using Google Earth Imagery and .
Stormwater system locations estimated using Google Earth aerial photography (May 2026). Locations to be verified and updated during MS4 permit cycle.
Aerial Photography from 2022.
Contours created from 2021 1m LIDAR Data available on The National Map website.

ALLGEIER, MARTIN and ASSOCIATES, INC.
CONSULTING ENGINEERS · HYDROLOGISTS · SURVEYORS
7231 EAST 24th STREET JOPLIN, MISSOURI 64804 (417) 680 - 7200

CERTIFICATE OF AUTHORITY
MISSOURI NO. 000427
OKLAHOMA NO. 675

DATE	REVISION

Carterville MS4_rev 2026.dwg

DWN. BY:	sms
CKD. BY:	sms
APPD. BY:	sms
DATE :	May 2026

STORMWATER SYSTEM & MS4 OUTFALL MAPPING
MS4 Stormwater Management Program
City of Carterville, Missouri

DWG. NO.
SW-1

Part 3 – Stormwater Management Program and Plan

Background

The Municipal Separate Storm Sewer System (MS4) Permit requires each permittee to develop and implement a Stormwater Management Program. Each permittee creates and maintains a written Stormwater Management Plan (SWMP) for the permit cycle. The SWMP is a document describing the Program and is created to ensure consistency and continuity in the implementation of the Program.

The City of Carterville has chosen to participate in the "Comprehensive" version of the MS4 permit (MO-RO4C000) for the October 2026-September 2031 permit cycle. Carterville is a traditional MS4 with a population of less than 10,000. According to the table below, Carterville fits Group A. All BMPs in this SWMP have been chosen to correspond with the requirements for Group A.

NOTE: Throughout this SWMP document, permit language is denoted in *italics*.

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; **Carterville fits this category.**	*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*

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.*

The MS4 Operator may replace or modify ineffective BMPs with effective BMPs

Part 4 – Minimum Control Measures

4.0 Entities under coverage of the MOR04C general permit shall develop and implement a Stormwater Program that includes the following six (6) Minimum Control Measures (MCMs).

4.1 MCM#1: Public Education and Outreach on Stormwater Impacts

4.2 MCM#2: Public Participation

4.3 MCM#3: Illicit Discharge Detection and Elimination

4.4 MCM#4: Construction Site Stormwater Runoff Control

4.5 MCM#5: Post-Construction Stormwater Management in New Development & Redevelopment

4.6 MCM#6: Pollution Prevention/Good Housekeeping for Municipal Operations

NOTE: BMP = Best Management Practice

4.1 MCM 1. Public Education and Outreach (PEO) on Stormwater Impacts

Carterville has implemented a public education and outreach program to distribute educational materials to the community and conduct 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 Target Audience

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

The City of Carterville is a considered a traditional MS4 and is primarily a residential community. The primary audience for the City's Public Education program will be residents. With a population under 10,000, Carterville is in in Group A, so no additional target audiences are required.

4.1.B Target Pollutants

The MS4 Operator shall target specific pollutant(s) in the permittee's education program. Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit.

Carterville has chosen target pollutants for the residential audience that will vary seasonally to coincide with the yard waste collection program. These target pollutants will include, but are not limited to, grass clippings & leaf litter.

4.1.C Best Management Practices (BMPs) for Outreach and Education

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 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.

The City of Carterville, as part of Group A, must choose a minimum of two Outreach and Education BMPs from Table III of the MS4 General.

Carterville has chosen the following Outreach and Education BMPs:

- **Stormwater Information on the City Website** (Table III, #1)
  - Maintain a Stormwater Information page on the City website to provide educational material and links to further stormwater information.
  - Measurable Goals: Maintain the webpage with up-to-date information and working links. All links will be checked, and the page will be updated as necessary, at minimum annually. Website will be maintained for the entire permit cycle.
  - Tracking and Adaptive Management: The number of hits will be tracked. The City will use this to see which messages get reactions, and if certain messages may need more education.
  - Target Audience: Residents
  - Target Pollutants: Include, but are not limited to, grass clippings & leaf litter.
  - Website Address: https://cartervillemo.com/storm-water

- **Targeted Email Education Campaign** (Table III, #11)
  - Send Stormwater Information to resident subscriber's email.
  - Measurable Goals: Send a minimum of one (1) time per year. The messages will address ways residents can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. Messages will be seasonally appropriate (such as leaf litter email during street sweeping season.)
  - Tracking and Adaptive Management: The number of emails will be tracked. The City will track subscriber counts.
  - Target Audience: Residents
  - Target Pollutants: Include, but are not limited to, grass clippings & leaf litter.

4.1.D Best Management Practices (BMPs) for Involvement

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.

The City of Carterville, as part of Group A, must choose a minimum of one Involvement BMP from Table IV of the MS4 General Permit.

Carterville has chosen the following Involvement BMP:

- **Storm Debris Pickup** (Table IV, #7)
  - The City provides a program for collection of storm debris. Collection service is provided after major storms. Residents call for pickup. Storm debris is taken to a collection point in Webb City, at the Center Creek Wastewater Facility.
  - Measurable Goals: The pickup service will be provided after major storms, at least once per year.
  - Tracking and Adaptive Management: Track the amount collected (approximate by weight or volume).
  - Target Audience: Residents
  - Target Pollutants: Storm debris, grass clippings & leaf litter.

4.1.E *The MS4 Operator shall create or support the involvement BMP(s) in Section 4.1.D.*

The City of Carterville provides the street sweeping BMP in Section 4.1.D.

4.1.F Adaptive Management

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 annual MS4 Stormwater Management Program Report for submittal to the Department.

Annual Review of MCM 1			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM1. Public Education and Outreach Program BMPs

Stormwater BMP	Target* Audience	Target Pollutant	Implemen-tation Date	Update Frequency	Responsible Party	Measurable Goal	Tracking
Outreach and Education BMPs (min. 2)							
Maintain Stormwater Information page on City website, see above for details (must have hit counter)	R	Include, but not limited to, grass clippings & leaf litter.	Ongoing throughout permit cycle	Annual. Check links. Update info.	City Administrator	Create & maintain the webpage with up-to-date information and working links. All links will be checked. Once created, website will be maintained for the rest of the permit cycle.	Number of hits will be tracked.
Targeted Education Campaign. Send stormwater information to resident subscriber's email.	R	Include, but not limited to, grass clippings & leaf litter.	Ongoing	Annual, at minimum.	City Administrator	Email at least once per year. The messages will address ways residents can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. Messages will be seasonally appropriate. Posting will be continued for at least one full year.	The number of emails sent (number of subscribers) will be tracked.
Involvement BMPs (min. 1)							
Storm Debris Collection Service	R	Storm Debris, Grass Clippings & Leaf Litter	Ongoing	As needed	City Administrator	Collection and disposal of debris after major storms. Service provided at request of residents.	Track amount collected (by volume or weight)
Other Items of Note							
Post link to 2026-2031 SWMP document on Stormwater page of City website	R	All pollutants addressed by SWMP	May 2026	As needed	City Administrator	Post one link to SWMP	1 link posted
Annual Review of MCM 1	n/a	n/a	Each January	Each January	City Administrator	Perform annual review of MCM 1 BMPs.	Note review date and any changes in section 4.1.F of SWMP document.

R = Residents

4.2 MCM 2. Public Participation

Carterville has implemented a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the City's Stormwater Program. This program provides opportunities for public participation in the permittee renewal process and complies with state and local public notice requirements. Additionally, the program provides 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 Public Notice Period

At the time of renewal, or issuance of a new permit, the MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the 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 Items to be Posted on Website

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.*

The 2026-2031 Stormwater Management is posted on the City's stormwater website (https://cartervillemo.com/storm-water) as the required description of the Stormwater Management Program. Comments may be submitted on the same website using the button labeled, "Report a storm water concern or violation."

4.2.C Public Meeting

At the time of renewal, or issuance of a new permit, 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 shall include the date, time and location.*
2. *The meeting must be held within the service area of the MS4. Co-permittees may hold one joint meeting to cover all co-permittee service areas.*

Dates of public notice:	May 9, 2026 – June 9, 2026
Dates of notice of meeting:	May 9, 2026 – June 9, 2026
Date of meeting:	June 9, 2026
Location (or virtual):	City Hall

4.2.D Public Comments

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.

Written comments can be submitted in person or by mail, or email to the City Administrator, at City Hall (admin@cartervillemo.com). Comments are to be tracked electronically or on paper by the City Administrator.

Stormwater concerns or violations can also be submitted through an online service request. There is a button labeled, "Report a storm water concern or violation" on the City's stormwater website, https://cartervillemo.com/storm-water.

4.2.E Stormwater Management Panel or Committee

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.

The City of Carterville does not utilize a stormwater management panel or committee.

4.2.F Annual Updates to Governing Board

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. Co-permittees shall hold a meeting for each co-permittee's governing body.

An update will be given annually to the City Council, around the time of completion of the annual Stormwater Report.

Annual Updates to Board of Aldermen			
Year to be Reported Upon	Date of update	Method used to update the Board of Aldermen	Name of MS4 representative(s)
2026:	6-9-2026	Council Meeting (monthly)	Jonathan Cook Sarah Simon (AMCE)
2022:			
2023:			
2024:			
2025:			

4.2.I Adaptive Management

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.

Annual Review of MCM 2			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM2. Public Involvement and Participation Program BMPs

Stormwater BMP	Target* Audience	Implementation Date	Responsible Party	Measurable Goal	Tracking
Permit Renewal Process					
Provide Public Notice for Draft Permit Renewal Application and Associated Mapping	R	May-9-2026 to June-9-2026	City Administrator	30 days minimum Public Notice provided so public could view and comment on the draft Permit Renewal Application	Complete
Above noted items posted on City Website	R	May-8-2026	City Administrator	Items Posted for public viewing and comment	Complete
Provide Public Notice for Public Meeting about Stormwater Management Program	R	May-9-2026 to June-9-2026	City Administrator	30 days minimum Public Notice provided	Complete
Host Public Meeting about the Stormwater Management Program	R	June-9-2026	City Administrator	Host minimum of one public meeting to inform the public about the Stormwater Management Program and provide opportunities for community input.	Finished. One meeting hosted at City Hall.
Provide Method for Public Comment. Record and address comments.	R	May-9-2026 to June-9-2026	City Administrator	Provide Method for Public Comment. Record and address comments.	Complete for the Permit Renewal If other comments come in about the Stormwater Program, address them when received.
Ongoing BMPs					
Annual MS4 Program Update to City Council	City Council	Each Feb. or Mar., after completion of Stormwater Annual Report	City Administrator	Annual update to CIty Council. Include status and progress of MS4 Stormwater Management Program.	One update per year. Record when update was given each year in section 4.2.F of SWMP
Annual Review of MCM 2	n/a	Each January	City Administrator	Perform annual review of MCM 2 BMPs.	Note review date and any changes in section 4.2.I of SWMP document.

R = Residents

4.3 MCM 3. Illicit Discharge Detection and Elimination (IDDE)

The City of Carterville has implemented, and enforces, 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 Stormwater & Outfall Mapping

IDDE program will include 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.

Carterville has a map that contains the location of MS4 outfalls and boundary of the regulated MS4 area (City Limits). This map contains:

- Stormwater Outfalls,
- the existing storm drain system, and
- the names and locations of all Waters of the State receiving discharges from the City's MS4 Outfalls.

A copy of the existing map and Outfall list is included in section 2.0 of this SWMP.

4.3.B Outfall Information Tracking

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

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

The City's Outfall Mapping utilizes a numbering system for all Outfalls. If additional Outfalls are added during this permit period, the dates will be noted on the mapping. Outfall locations will be verified during IDDE inspections, and the dates will be recorded on the inspection forms.

4.3.C Regulatory Mechanism for Illicit Discharge Prevention

The MS4 shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions.

The City of Carterville uses Chapter 250 of City Code to effectively prohibit illicit discharges to the MS4. This "Illicit Discharge Ordinance" gives the City authority to inspect for illicit discharges and includes enforcement measures. This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link.

4.3.D Dry Weather Field Screening

IDDE program will include 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.

   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.

2. *Dry weather 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. When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:*
   a. Date and time;
   b. Weather conditions and temperature (air & water);
   c. Color of discharge;
   d. Estimate of flow rate (this may be noted qualitatively);
   e. Odor;
   f. Surface scum, algal bloom, floatables or oil sheen present;
   g. Deposits or stains (note the color);
   h. Turbidity (may be noted qualitatively);
   i. Stream impact including vegetation, fish, wildlife;
   j. Length of impacted stream; and
   k. Notes of an obvious source of flow (such as lawn irrigation, etc.)

Carterville has implemented an IDDE Inspection program that utilizes dry-weather field screening to detect and address non-stormwater discharges, including discharges from illegal dumping and spills.

Procedures for inspection are contained within the City's "Illicit Discharge Detection & Elimination Field Investigation Guide," dated 2022. During field inspections, the City uses an inspection checklist, called the "Illicit Discharge Inspection Field Sheet," that includes the above-listed minimum observations and physical characteristics.

A digital copy of the IDDE Field Guide is available on the City's Stormwater website (https://cartervillemo.com/storm-water). A copy of the Inspection Field Sheet is included under Appendix MCM3. Physical copies of the IDDE Field Guide and Inspection Field Sheet are used in the field by inspection staff.

Each outfall is inspected a minimum of once per permit cycle. Additional inspections may occur if there is a complaint or if a priority area is designated.

Number of IDDE inspections for each year are recorded in the table below.

IDDE Inspections for the Year		
	Amount (% or #) per year of permit cycle	Any specific priority areas included: (See also 4.3.H)
2026:		
2027:		
2028:		
2029:		
2030:		

4.3.E Diagnostic Monitoring Procedures

The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program.

Procedures for Illicit Discharge Inspection are contained within the City's "Illicit Discharge Detection & Elimination Field Investigation Guide," dated 2022. During field inspections, the City uses an inspection checklist, called the "Illicit Discharge Inspection Field Sheet."

A digital copy of the IDDE Field Guide is available on the City's Stormwater website (https://cartervillemo.com/storm-water). A copy of the Inspection Field Sheet is included under Appendix MCM3. Physical copies of the IDDE Field Guide and Inspection Field Sheet are used in the field by inspection staff.

4.3.F Tracing the Source

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.

Procedures for tracing the source of an Illicit Discharge are contained within the City's "Illicit Discharge Detection & Elimination Field Investigation Guide," dated 2022. A digital copy of the IDDE Field Guide is available on the City's Stormwater website (https://cartervillemo.com/storm-water). Physical copies of the IDDE Field Guide are used in the field by inspection staff.

4.3.G Removing the Source

The MS4 Operator shall maintain procedures for removing the source of the discharge. After locating the source, the pollutant and source must be removed. The exact procedure will depend on the source and the circumstances.

Procedures for removing the source may vary widely, depending on the source and circumstances. Removal procedures may be as simple as a friendly conversation with a property owner. Or a public education campaign may be indicated, if the source is determined to be more widespread. Chapter 250 of City Code authorizes additional, specific enforcement measures for illicit discharge issues. Enforcement procedures in the ordinance include: Notice of Violation, fines, abatement of the problem by the City (or its agent), cost of abatement to be paid by violator, and possible civil action and/or criminal charges, as the situation requires. Appeal procedures are also included in the ordinance. (This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link.)

4.3.H Priority Areas

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.

Record IDDE Inspection Priority Areas on the following table.

	IDDE Inspection Priority Area(s)
2026	
2027	
2028	
2029	
2030	

4.3.I Written Procedures for IDDE Program Implementation

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.

Procedures for implementation of the IDDE Program are contained within the City's "Illicit Discharge Detection & Elimination Field Investigation Guide," dated 2022. A digital copy of the IDDE Field Guide is available on the City's Stormwater website (https://cartervillemo.com/storm-water).

A standard operating procedure (SOP) has also been developed specifically for field response when a possible spill or illicit discharge has been reported. A copy has also been included in Appendix MCM3.

4.3.J Investigation Timeline

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.

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 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.

The City of Carterville will:
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 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. Notify adjacent MS4 Operators if illicit connections or illicit discharges are observed related to, discharging to, or discharging from, that Operator's municipal storm sewer system. Notification will take place within 24 hours of discovery or as soon as practicable.

Adjacent MS4	Contact person(s)	Phone number/ email
City of Webb City	Public Works	417.673.4651
Jasper County	Debbie Darby @ the Health Department	417.358.3111

4.3.K Enforcement Procedures

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.

Enforcement procedures for illicit discharge issues are laid out in Chapter 250 of City Code. Procedures in the ordinance include: Notice of Violation, fines, abatement of the problem by the City (or its agent), cost of abatement to be paid by violator, and possible civil action and/or criminal charges, as the situation requires. Appeal procedures are also included in the ordinance. (This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc,, under the "City Code Book" link.)

A standard operating procedure (SOP) has been developed for IDDE enforcement procedures. A copy has been included in Appendix MCM3.

4.3.L Database for Tracking IDDE Actions

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

The City of Carterville tracks all field screenings, spill, incidents, and investigations. Paper and digital copies of all tracking documents will be kept at the City Hall offices for the entire MS4 permit cycle. Records may be kept longer if deemed necessary.

4.3.M IDDE Education

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).

Public education, for residents and businesses, is covered under part 4.1 of this SWMP. For education of City staff, see section 4.3.Q and 4.6 of this SWMP.

4.3.N Review/Update of IDDE Program

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

4.3.O Review/Update of IDDE Program for Existing Permittees

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.

No additional revisions needed. Outfall map will be updated as necessary.

4.3.P The City of Carterville is not a new permittee, so 4.3P is not applicable.

4.3.Q IDDE Training Program for Field Staff

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.

Reviews of the training effectiveness shall be considered after municipal site inspections or after an illicit discharge 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

The City of Carterville will provide Illicit Discharge training to all inspection staff and staff who may handle materials which may become an illicit discharge. Training may be conducted in person or using online resources.

1. Each applicable staff member will be trained at minimum within one year of being hired.
2. Applicable staff include:
    a. IDDE inspection staff;
    b. Building inspection staff;
    c. Fleet maintenance staff;
    d. Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
    e. Road maintenance staff;

f. Road salt/de-icing staff; and
g. Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.

Reviews of the training effectiveness will 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 City will consider if the training is enough or is ineffective.

Records of IDDE Training will be kept with other staff training records under section 4.6 of this SWMP. Reviews of training effectiveness will also be kept under section 4.6.

4.3.R Adaptive Management

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.

List any additional programmatic BMPs and when they were added to the Stormwater Management Program. (Examples of programmatic BMPs include: mapping of entire stormsewer system, adopting a standard operating procedure for dry weather screening, etc.)

Annual Review of MCM 3			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM3. Illicit Discharge Detection and Elimination Program BMPs

Stormwater Goal (BMP)	Permit Section	Implemen-tation Date	Update Frequency	Responsible Party	Measurable Goal	Tracking
Mapping						
Stormwater System & Outfall Mapping	4.3.A	Completed, other than updates	As needed	City Adminstrator	Maintain map with storm sewer system & outfalls. Update as needed.	Map completion, then track updates as needed.
Outfall Information Tracking	4.3.B	Completed, other than updates	As needed	City Adminstrator	Maintain outfall information (4.3.B) and update as needed, including dates when any outfall locations are surveyed.	Are any updates needed? If so, have they been added?
Regulatory Mechanism and Enforcement						
Regulatory Mechanism - Illicit Discharge Ordinance	4.3.C 4.3.J 4.3.K	Completed	As needed	City Adminstrator	Maintain and Enforce Illicit Discharge Ordinance. Maintain enforcement procedures (included in ordinance).	Completed
Inspection						
Dry-weather Inspection of Each Outfall	4.3.D	Ongoing	As needed	City Adminstrator	Inspect all Outfalls (and any new ones) once per permit cycle.	Inspections tracked by keeping Inspection Sheets on file.
Fill Out Inspection Field Sheet for Each Outfall Inspected	4.3.D	On day of inspection	As needed	City Adminstrator	Use the Inspection Field Sheet as a checklist to ensure complete inspection of each outfall.	Use Inspection Field Sheet for each inspection. Keep on File.
Identify Priortiy Areas for Inspection	4.3.H	Annual	Annual	City Administrator	Identify priority areas for IDDE Inspection, according to Permit section 4.3.H.	Record any priority areas in section 4.3.H of the SWMP
Maintain Written Procedures for Inspection and Tracing the Source	4.3.D-4.3.F	Completed	As needed	City Administrator	Maintain the IDDE Field Guide, which contains the required written procedures for Permit sections 4.3.D-4.3.F	Completed
Education/Training/Review						
IDDE Information to Public	4.3.M	See MCM#1	See MCM#1	See MCM#1	See MCM#1	See MCM#1
IDDE Training for Field Staff	4.3.Q	2026	Annual	City Administrator	IDDE Training forInspectors and all staff who handle materials that may become an illicit discharge. Initial training for all, then within 1 year of hire for new employees	Track names/number of employees/departments trained in section 4.6.A & 4.6.B of the SWMP
Annual Review of MCM 3	4.3.R	Each January	Each January	City Administrator	Perform annual review of MCM 3 BMPs.	Note review date and any changes in section 4.3.R of SWMP document.

4.4 MCM 4. Construction Site Stormwater Runoff Control

Carterville is in the process of implementing and enforcing a program to reduce pollutants in any stormwater runoff to the 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 are to 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 Regulatory Mechanism

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.

The City of Carterville uses Chapter 250 City Code as the regulatory mechanism requiring appropriate erosion and sediment controls on construction sites. The City regulates sites that disturb one or more acres of land, as well as those sites that disturb less than one acre if the disturbance is part of a larger common plan of development or sale that would disturb one acre or more. Chapter 250.000 accomplishes the following:

- References the Carterville Stormwater Management Criteria manual;
- Regulates pollutants in stormwater runoff from construction activities;
- Lay out procedures for acquiring a Grading Permit;
- Establishes legal authority for the City to inspect permitted construction sites;
- Establishes legal authority for the City to enforce the regulations through denial of permit, stop-work orders, revocation of permit, and criminal charges, with associated fines and other penalties.

This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link. A copy of the Stormwater Management Criteria manual is available upon request.

4.4.B Pre-Construction Plan Review

The MS4 Operator shall review pre-construction plans.

The City of Carterville performs pre-construction plan review for developments covered under Chapter 250 of City Code. During review, the City, or its agent:

1. Evaluates threats to water quality, taking into account:
   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. Utilizes a checklist to ensure consistency and completeness. (A copy of this checklist is included under Appendix MCM 4.)
3. Requires construction site operators to select, install, implement, and maintain appropriate stormwater control measures. 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. Considers ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
5. Requires construction site operators to control construction-site waste that may cause adverse impacts to water quality. (Trash, concrete wash-out, etc.)

4.4.C Authority to Inspect and Enforce

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.

Chapter 250 of Carterville City Code establishes authority for site inspection and enforcement of control measures. The City has implemented procedures for inspecting construction/land disturbance projects.

The construction site runoff control program includes the following.

1. Identification of 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 will include assessment of compliance with the City's Stormwater Regulations and other applicable ordinances.
3. The inspections will evaluate any structure that functions to prevent pollution of, or remove pollutants from, stormwater. Inspectors will use enforcement polices to require BMPs to be implemented and effective. (Targeted pollutants will include sediment and construction wastes, such as paints, solvents, equipment fluids, and construction debris/litter.)
4. Final inspections (upon completion of the land disturbance and prior to final approval of construction project) will ensure all disturbed areas have been stabilized and all temporary erosion and sediment control measures are removed.
5. The inspections conducted by the City's inspector are documented with a checklist. The checklist includes structural and non-structural BMPs. (A copy of the inspection checklist is included under Appendix MCM 4.)

The City has developed a Standard Operating Procedure for Stormwater Construction Inspection & Enforcement. A copy of the SOP is included in Appendix MCM4.

4.4.D Enforcement Procedures

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. The MS4 Operator must have a minimum of two (2) enforcement actions.

Enforcement procedures for construction site runoff problems are laid out in Chapter 250 of City Code. Procedures in the ordinance include: Stop-Work Orders, revocation of permit, fines, abatement of the problem by the City (or its agent), cost of abatement to be paid by violator, and possible civil action and/or criminal charges, as the situation requires. Appeal procedures are also included in the ordinance. (This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link..)

The City has developed a Standard Operating Procedure for Stormwater Construction Inspection & Enforcement. A copy of the SOP is included in Appendix MCM4.

4.4.E Construction Site Self-Inspection Procedures

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.

Each construction site covered under the Chapter 250 of City Code is also covered under the Missouri Land Disturbance Permit MO-RA00000. The state permit requires construction site operators to conduct inspections as listed above. When the City performs an inspection on a construction site, the City's inspectors will check these self-inspection records. Construction site operator shall keep self-inspection records onsite for City review.

Note: The 2-year, 24-hour storm event for Carterville has a rainfall depth of 3.86 inches, according to NOAA's Atlas 14, Volume 8, Version 2.

4.4.F Inventory of Active Construction Sites

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 City of Carterville maintains an inventory of active public and private land disturbance sites covered under this permit. The inventory is kept on a paper map posted at City Hall.

Inventory information for each active site contains the following:

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 Tracking of Oversight Inspections

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 City of Carterville tracks oversight inspections (from 4.4.E) by retaining copies of records of inspection checklists and email correspondence. These inventories are available to the Department upon request.

Tracking contains:
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 Review/Update of Construction Site Runoff Control Program for 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

No additional revisions needed.

4.4.I The City of Carterville is not a new permittee, so 4.4.I is not applicable.

4.4.J Public Comment About Land Disturbance Sites

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.

Construction plans are available at Carterville's City Hall for review by the public. Any citizen of Carterville may submit written comments relating to the plans. Written comments can be submitted in person or by mail, or email to the City Administrator, at City Hall (admin@cartervillemo.com). Comments are to be tracked electronically or on paper by the City Administrator. Comments are to be addressed by the City within 30 days of receipt.

4.4.K Training for Inspection Staff

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.

The City of Carterville provides construction site runoff control (including erosion and sediment control) training to all construction inspection staff and plan reviewers at least once during the permit cycle. Records of this training are kept with other staff training records under section 4.6 of this SWMP. Reviews of training effectiveness will also be kept under section 4.6.

4.4.L Inspection Procedures

The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.

An erosion control inspection is provided during each inspection requested by the owner, contractor, or subcontractor. A checklist is used for these stormwater inspections. The completed inspection checklists are kept at City Hall. A copy of the stormwater inspection sheet/checklist is included Appendix MCM 4. The City has developed a Standard Operating Procedure for Stormwater Construction Inspection & Enforcement. Copies of the checklist and SOP are included in Appendix MCM4.

Enforcement procedures for construction site runoff problems are laid out in Chapter 250 of City Code. Procedures in the ordinance include: Stop-Work Orders, revocation of permit, fines, abatement of the problem by the City (or its agent), cost of abatement to be paid by violator, and possible civil action and/or criminal charges, as the situation requires. Appeal procedures are also included in the ordinance. (This City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link..)

4.4.M Adaptive Management

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 the follow.

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 are thorough and consistent across different sites.*

Record annual review in the table on the next page.

Annual Review of MCM 4			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM4. Construction Site Stormwater Runoff Control Program BMPs

Stormwater Goal (BMP)	Permit Section	Implementation Date	Update Frequency	Responsible Party	Measurable Goal	Tracking
Regulatory Mechanism and Enforcement						
Regulatory Mechanism - Erosion & Sediment Control Ordinance & Stormwater Management Criteria Manual	4.4.A 4.4.D	Completed	As needed	City Adminstrator	Maintain & enforce existing Stormwater Regulations. Maintain enforcement procedures included in Ordinance & Manual.	Have the appropriate ordinances and manual been adopted?
Pre-Construction Plan Review						
Pre-Construction Plan Reviews	4.3.A	Ongoing	As needed	City Adminstrator	Review all qualifying site plans for compliance with Stormwater Regulations.	Track # of plans reviewed and # approved.
Use Plan Review Checklist for Construction Projects	4.4.B	Ongoing	As needed	City Administrator	Use the checklist to ensure consistency and completeness during Plan Review process.	Keep copies of checklists used for each plan review.
Public Comments	4.4.J	Ongoing	As needed	City Administrator	Make all active plans available at City Hall for review by public. Accept written comments submitted and address within 30 days.	Keep records of comments submitted and addressed.
Inspection						
Construction Site Inspection by City	4.4.C	Ongoing	As needed	City Adminstrator	Inspect all permitted, active construction sites for compliance with Stormwater Regulations and site's SWPPP (including self-inspections).	Inspections tracked by keeping Inspection Sheets on file.
Use Stormwater Inspection Checklist during Construction Site Inspections	4.4.C	On day of inspection	As needed	City Adminstrator	Use Stormwater Inspection Sheet to ensure complete, consistent inspection of each permitted construction site.	Use Inspection Sheet for each inspection. Keep on file.
City Oversight of Self-Inspection by Construction Site Operators	4.4.E	Ongoing	As needed	City Adminstrator	Provide oversight to check that self-inspections are properly completed by the construction site operators for all permitted sites. (See 4.4.E above for details.)	Keep copies of oversight records, whether submitted by operator or verified by City inspection.
Maintain Inventory of Active Construction Sites	4.4.F	Ongoing	As needed	City Administrator	Maintain Inventory of all Active Construction Sites. (Include Contact Info, Size of disturbance area, priority level.)	Are all regulated active construction sites included in inventory?
Education/Training/Review						
Erosion & Sediment Control Training for Inspection Staff & Plan Reviewers	4.4.K	2027	As needed	City Administrator	Provide Erosion & Sediment Control Training for Inspection Staff & Plan Reviewers at least once per permit cycle.	Track names/number of staff trained in section 4.6.A & 4.6.B of the SWMP.
Annual Review of MCM 4	4.3.R	Each January	Each January	City Administrator	Perform annual review of MCM 4 BMPs.	Note review date and any changes in section 4.4.M of SWMP document.

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

Carterville is in the process of implementing and enforcing a program to address the water quality of long-term stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan or sale. The City will accomplish this goal through a stormwater management ordinance requiring any such development project to obtain a Grading Permit, discussed below, before construction may begin.

The City's stormwater program ensures that permanent controls have been designed and implemented to prevent or minimize water quality impacts.

4.5.A Regulatory Mechanism

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 City of Carterville uses Chapter 250 of City Code and Ordinance #3013 (passed March 12, 2024) as the regulatory mechanism requiring appropriate permanent controls to prevent or minimize long-term water quality impacts. The City regulates sites that disturb one or more acres of land, as well as those sites that disturb less than one acre if the disturbance is part of a larger common plan of development or sale that would disturb one acre or more. Chapter 250 of City Code accomplishes the following:

- References the Carterville Stormwater Management Criteria Manual;
- Lay out procedures for acquiring a Grading Permit;
- Establishes legal authority for the City to inspect permitted construction sites;
- Establishes legal authority for the City to enforce construction stormwater regulations through denial of permit, stop-work orders, revocation of permit, and criminal charges, with associated fines and other penalties.

Ordinance #3013 accomplishes the following:

- Requires long-term maintenance of permanent BMPs.
- Establishes legal authority for the City to inspect long-term, permanent BMPs;
- Establishes legal authority for the City to enforce the regulations through notices of violation, criminal charges, with associated fines and other penalties;
- Authorizes the City to perform maintenance work at the owner's expense, if necessary;
- Establishes appeal procedures.

A copy of Ordinance #3013 is included in Appendix MCM5 of this document. Chapter 250 of City Code can be found online at: https://cartervillemo.com/code-book%2C-rfqs%2C-etc, under the "City Code Book" link. A copy of the Stormwater Management Criteria manual is available upon request.

4.5.B Minimization of Water Quality Impacts

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:

   The Stormwater Management Criteria Manual contains provisions for structural stormwater controls. These structural controls will include extended detention basins, grass swales, permeable surfaces, sand filter basins, and other structural BMPs. The Manual includes design standards and guidance for designing, installing, implementing, and maintaining stormwater control measures that are designed to infiltrate, evapotranspire, harvest, detain, retain, and/or reuse stormwater. Design standards in the Manual include regulation of site discharge volumes, rates, durations, 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:

   The Stormwater Management Criteria Manual contains guidelines and rules for non-structural stormwater controls. Through this mechanism, the City has adopted preventative actions that involve management and source controls. Specific measures/policies/ include:
   - 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);
   - Encourage buffer zones along water bodies;
   - Minimization of disturbance of soils and vegetation;
   - Use of green infrastructure; and
   - Minimization of directly connected impervious areas.

4.5.C Pre-Construction Plan Review

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.

The City of Carterville performs pre-construction plan review for developments covered under Chapter 250 of City Code. This review is performed in conjunction with the review required under MCM 4. During review, the City, or its agent, utilizes a checklist to ensure consistency and completeness. Non-structural BMPs (such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space) are evaluated first. (Copy of checklist included Appendix MCM 4.)

4.5.D Long-Term Maintenance of Permanent Stormwater BMPs

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.

The City of Carterville has adopted Ordinance #3013 as the regulatory mechanism requiring appropriate long-term operation and maintenance of permanent BMPs. A copy of Ordinance #3013 is included in Appendix MCM5 of this document.

Long-term O&M for BMPs is addressed during the plan review and approval process. Copies of O&M information are to be retained by the party responsible for the post-construction BMP and by the City.

4.5.E Long-Term BMP Inspections

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. (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.*

The City of Carterville does not currently have any permanent BMPs within the MS4. Development is expected within this permit cycle that will activate the requirements of this section and the creation of a BMP inventory.

Item 1 above is generally covered under MCM 4, specifically the final construction inspection. (See 4.4.L above.)

For item 3 above, annual inspections will primarily be completed by the owner of the BMP. The owner will submit an Annual Inspection & Maintenance Report, accompanied by any pertinent inspection checklists, maintenance logs, and photographs. Completed reports will be kept as records of inspection by both the owner and the City.

For items 2 and 4 above, the City will perform oversight inspections for a minimum of 60% of the permanent BMPs within the permit cycle, with the first inspection of a new project occurring within 3 years of completion of construction. Inspection checklists for each type of BMP have been developed. Completed checklists will be kept as records of the oversight inspections. If an inspection results in any warnings given or other corrective actions, records of those actions will

also be kept by the City. Copies of the BMP inspection checklists are included in Appendix MCM5.

4.5.F Enforcement Procedures

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

Enforcement procedures for Long-Term O&M problems are laid out in Ordinance #3013. (See copy in Appendix MCM5.) This ordinance establishes legal authority for the City to enforce the regulations through notices of violation, criminal charges, with associated fines and other penalties. If necessary, the City may perform maintenance work at the owner's expense. Appeal procedures are also included in the ordinance.

Specific procedures for enforcement are laid out in the ordinance. (See excerpt below.) The range of enforcement actions available to the City allow it to address the variability and severity of the noncompliance. Any enforcement response by the City takes into account the:

1. Degree and duration of the violation;
2. Effect the violation has on the receiving water;
3. Compliance history of the post-construction BMP owner or operator; and
4. Cooperation of the owner or operator with compliance efforts.

The enforcement procedures may start with verbal notice, and education regarding the BMP, before continuing to the Notice of Violation. Enforcement actions will begin within 30 days of discovery of the violation.

EXCERPT FROM CHAPTER 425, ARTICLE IV.

NOTIFICATION OF VIOLATION. [Ord. No. 3013, 03-12-2024]

Whenever the City of Carterville finds that a person has violated a prohibition or failed to meet a requirement of this Article, the City of Carterville may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

1. The performance of maintenance work;
2. The violating practices or operations shall cease and desist;
3. Payment of a fine to cover administrative costs; and
4. implementation of source control or treatment BMPs.

If maintenance work is required, the notice shall set forth a deadline within which such work must be completed. Said notice shall further advise that, should the violator fail to perform the work within the established deadline, the work will be done by the City, a designated agency or a contractor, and the expense thereof shall be charged to the violator.

APPEAL OF NOTICE OF VIOLATION. [Ord. No. 3013, 03-12-2024]

Any person receiving a Notice of Violation may appeal the determination of the City of Carterville. The notice of appeal must be received within ten (10) days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her

designee shall take place within fifteen (15) days from the date of receipt of the notice of appeal. The decision of the municipal authority or its designee shall be final.

ENFORCEMENT MEASURES AFTER APPEAL. [Ord. No. 3013, 03-12-2024]

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 ten (10) 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 any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, or agent of the person in possession of any premises to refuse to allow the City of Carterville or designated agent or contractor to enter upon the premises for the purposes set forth above.

COST OF ABATEMENT OF THE VIOLATION. [Ord. No. 3013, 03-12-2024]

Within thirty (30) 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 assessment within ten (10) days. If the amount due is not paid within a timely manner, 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 twelve (12) equal payments. Interest at a rate of percent per annum shall be assessed on the balance beginning on the first day following the discovery of the violation.

INJUNCTIVE RELIEF. [Ord. No. 3013, 03-12-2024]

It shall be 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 City of Carterville 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.

VIOLATIONS DEEMED A PUBLIC NUISANCE[Ord. No. 3013, 03-12-2024]

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, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

CRIMINAL PROSECUTION. [Ord. No. 3013, 03-12-2024]

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 five hundred dollars ($500.00) per violation per day and/or imprisonment for a period of time not to exceed thirty (30) days.

The City of Carterville may recover all attorneys' fees, court costs and other expenses associated with enforcement of this Article, including sampling and monitoring expenses.

REMEDIES NOT EXCLUSIVE. [Ord. No. 3013, 03-12-2024]

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 City of Carterville to seek cumulative remedies.

4.5.G Enforcement Timeline

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.

Specific procedures for enforcement, including timelines, are laid out in Ordinance # 3013. (See excerpt in section 4.5.F above.) The enforcement procedures may start with verbal notice, and education regarding the BMP, before continuing to the Notice of Violation stage, but the actions will begin within 30 days of discovery of the violation.

4.5.H Inventory of BMPs

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.

The City of Carterville does not currently have any permanent BMPs within the MS4. Development is expected within this permit cycle that will activate the requirements of this section and the creation of a BMP inventory. The inventory will be updated as new facilities are added and projects are completed.

4.5.I Tracking Post-Construction BMP Inspections

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 tracking must contain at a minimum:

1. *Inspection dates and time;*
2. *Inspector name;*
3. *Inspection findings; and F*
4. *Follow up actions and dates, including corrective actions and enforcement actions.*

The City of Carterville does not currently have any permanent BMPs within the MS4. Development is expected within this permit cycle that will activate the requirements of this section and the creation of a BMP inventory.

Once there are BMPs to inspect, the City plans track inspections by keeping completed inspection checklists on file at City Hall.

4.5.J Review/Update of Post-Construction BMP Program for 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.

The City of Carterville does not currently have any permanent BMPs within the MS4. Development is expected within this permit cycle that will require permanent stormwater BMPs. At that time, the City will implement the items and procedures described above in sections 4.5.E, 4.5.H, and 4.5.I.

4.5.K The City of Carterville is not a new permittee, so 4.5.K is not applicable.

4.5.L Training for Inspection Staff

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.

The City of Carterville provides post-construction BMP inspection training to all relevant inspection staff at least once during the permit cycle. Records of this training will be kept with other staff training records under section 4.6 of this SWMP. Reviews of training effectiveness will also be kept under section 4.6.

4.5.M Adaptive Management

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 the following.
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. *Evaluating how education could improve the effectiveness of the program.*

Any additional programmatic BMPs shall be acknowledged in the Stormwater Management Program Report. (Examples of programmatic BMPs include; educational meetings with HOAs, onsite educational visits, adopting a standard operating procedure for enforcement measures.)

Record annual review in the table on the next page.

Annual Review of MCM 5			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM5. Post-Construction Stormwater Management Program BMPs

Stormwater Goal (BMP)	Permit Section	Implementation Date	Update Frequency	Responsible Party	Measurable Goal	Tracking
Regulatory Mechanism and Enforcement						
Regulatory Mechanism - Stormwater Ordinance & Stormwater Management Criteria Manual	4.5.A 4.5.B 4.5.D 4.5.F 4.5.G	Completed	As needed	City Adminstrator	Maintain & enforce existing Stormwater Regulations. Maintain enforcement procedures included in Ordinance & Manual. Regs include minimization of Water Quality Impacts and Long-Term Maintenance of Permanent BMPs.	Have the appropriate ordinances and manual been adopted?
Pre-Construction Plan Review						
Pre-Construction Plan Reviews	4.5.C	Ongoing	As needed	City Adminstrator	Review all qualifying site plans for compliance with Stormwater Regulations.	Track # of plans reviewed and # approved.
Use Plan Review Checklist for Land Disturbance Projects	4.5.C	Ongoing	As needed	City Administrator	Use a checklist to ensure consistency and completeness during Plan Review process.	Keep copies of checklists used for each plan review.
Construction Phase						
Construction Site Inspection by City	4.5.E	Ongoing	As needed	City Adminstrator	Inspect all permitted, active construction sites for compliance with Stormwater Regulations and approved plans.	Inspections tracked by keeping Inspection Sheets on file.
Long-Term Maintenance of Permanent Stormwater BMPs						
Develop and Maintain Inventory of Permanent Stormwater BMPs	4.5.H	Once the City has permanent BMPs to inspect	At close of Con-struction	City Administrator	Develop & maintain Inventory of all Permanent Stormwater BMPs. (Include Contact Info, Size of disturbance area, priority level.)	Are all regulated active construction sites included in inventory?
During O&M Inspections, Use the BMP O&M Checklists	4.5.C 4.5.I		As needed	City Administrator	Utilize the checklists (Appendix MCM6) when inspecting Permanent Stormwater BMP.	Inspections sheets developed. Add to SWMP.
Initial Post-Construction Inspection by City	4.5.E 4.5.I		As needed	City Adminstrator	Inspection by City of all Permanent Stormwater BMPs within first 3 years after construction is complete. (After checklists are developed.)	Inspections tracked by keeping Inspection Sheets on file.
Annual Inspections of Permanent Stormwater BMPs, by City or Owner	4.5.E 4.5.I		Repeat Annually	City Adminstrator	Annual Inspections of each Permanent BMP by Owner or City (depending on agreement). City to provide Inspections checklists to Owner.	Inspections tracked by keeping Inspection Sheets on file. Owner to submit completed Inspection Sheets to City.
Education/Training/Review						
Post-Construction BMP Inspection Training for Inspection Staff	4.5.L	2027	As needed	City Administrator	Provide Post-Construction BMP Inspection Training for relevant Inspection Staff at least once per permit cycle.	Track names/number of staff trained in section 4.6.A & 4.6.B of the SWMP.
Annual Review of MCM 5	4.5.M	Each January	Each January	City Administrator	Perform annual review of MCM 5 BMPs.	Note review date and any changes in section 4.5.M of SWMP document.

4.6. MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

The City of Carterville is in the process of developing a municipal Operation and Maintenance (O&M) Program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

4.6.A Employee Training Program

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.

The City of Carterville has updated its training program and schedule to meet the requirements of the new MS4 permit and is in the process of implementing those updates. See updated Training Program Schedule below.

Training Program Record			
Staff & Department	Date	Topic(s)	Training Provider/Method

Training Program Record (cont.)			
Staff & Department	Date	Topic(s)	Training Provider/Method

Stormwater Program Training Schedule

1. In-Depth Training for Pollution Prevention/Good Housekeeping (PPGH) – MCM6
    a. Frequency: ANNUAL
    b. Topics: See table in section 4.6.B.
    c. Applicable Staff :
        i. Building maintenance/custodial staff
        ii. Fleet maintenance staff;
        iii. Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
        iv. Road maintenance staff;
        v. Road salt/de-icing staff; and
        vi. Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.

2. General Training for Pollution Prevention/Good Housekeeping – MCM6
    a. Frequency:
        i. Existing Employees: Initial training
        ii. New Employees: Within one year of being hired
        iii. Additional training as needed.
    b. Applicable Staff: All employees not listed in number 1 above.

3. Illicit Discharge Detention and Elimination (IDDE) Training – MCM3
    a. Frequency:
        i. Existing Employees: Initial training
        ii. New Employees: Within one year of being hired
    b. Applicable staff include:
        i. IDDE inspection staff;
        ii. Building inspection staff;
        iii. Construction inspection staff;
        iv. Fleet maintenance staff;
        v. Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
        vi. Road maintenance staff;
        vii. Road salt/de-icing staff; and
        viii. Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.
        ix. Police

4. Training for Construction Site Runoff Control & Post-Construction Stormwater Management – MCM4 & MCM5
    a. Frequency: Once per permit cycle (Oct 2026-Sept 2031)
    b. Applicable staff include:
        i. Construction Inspection staff;
        ii. Inspection staff for Long-Term BMP inspections

4.6.B Minimum Topics Covered

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):

The table below provides a breakdown of topics to be covered in the In-Depth Training for PPGH and the IDDE Training (#1 & #3 of the updated Training Program Schedule). As training is provided, records will be kept in the table.

Training Program – Minimum Topic Breakdown			
Topic	Years covered in training	Departments trained	Number of staff trained
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			
11. Illicit Discharges			

4.6.C Training Materials & Procedures

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.*

The City of Carterville has modified its current training program and schedule to meet the requirements of the new MS4 permit. Training is provided either in-person or by electronic methods. Training materials have been identified and are included in the Staff Training Resources table in Appendix MCM 6. Coordination with other MCMs is shown in the updated Training Program Schedule above. Additional, seasonally-appropriate topics for employees might be covered through email or in-person training, if deemed necessary.

4.6.D List of Municipal Operations/Facilities

The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program.

The following is a list of all municipal operations and facilities that are impacted by the O&M program.

- City Operations Compound - 310 S Tennessee
- Comet Park - 400 W Main
- Garrett Park - 500 N Pine
- City Hall Park - 1200 E 1st street

4.6.E List of Industrial Facilities Owned and/or Operated by the City

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.

The following are industrial facilities owned and/or operated by City of Carterville.

- Carterville Water Well & Tower – MDNR MO-5010141

4.6.F Controls for Reducing or Eliminating Floatables and Pollutant Discharge

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.

The City of Carterville has developed an Operation and Maintenance Manual for municipal operations as a guide for the prevention and reduction of pollution in stormwater runoff from municipal facilities and operations. The Municipal O&M Manual includes the following:

1. A list of potential pollutant sources at each facility, such as materials used and stored on site.
2. All municipally owned or operated facilities are inspected, at minimum annually.
    a. Records are kept for inspections and follow-up. This is mostly be checklists.
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 are maintained for each facility.
4. All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the City are stored so these materials are not exposed to stormwater.
5. Sufficient practices of spill prevention, control, and/or management are provided to prevent any spill of these pollutants from entering waters of the state;
    a. This includes spill kits when liquid product is stored at a facility; and
    b. Any containment system used to implement this requirement is constructed of materials compatible with the substances contained and also prevents 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.

A copy of the O&M Manual is included in Appendix MCM6.

4.6.G Procedures for Proper Disposal of Waste

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.

The above topics are included in the municipal O&M Manual.

4.6.H Washing of Municipal Vehicles and Equipment

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.*

Vehicle and equipment washing is covered in the Municipal O&M Manual

4.6.I Written Controls, Procedures, Inspection Schedules, Tracking, Annual Review

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 (SWPPP) or one overarching Operations and Maintenance Manual (O&M Manual) for all applicable MS4 facilities may be used to comply with this requirement.

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.

Written explanations of controls, procedures are included in the municipal O&M Manual. (A copy of the O&M Manual is available upon request.). A Facility Inspection Checklist is included in the municipal O&M Manual. Inspections are made at minimum annually. Copies of the inspection checklists are kept as records of inspection.

The City performs an annual review of the Pollution Prevention/Good Housekeeping Program to ensure MS4 compliance and determine if changes are needed. This review generally takes place during the preparation of the annual MS4 Stormwater Report. Annual reviews will be recorded in the table on the following page.

Annual Reviews of Facility Inspections				
Date(s) of review	Location(s) inspected	Were issues found?	Were changes made?	Is follow-up needed?

4.6.J Flood Management Projects

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.

Any new flood management projects will be subject to the water quality standards in the Stormwater Management Criteria Manual discussed in 4.5.A. All projects will undergo the pre-construction review for water quality impacts.

Flood management projects in the Plan Area can include:

- Regional storm water control (retention basins, detention basins);
- Flood control levees and associated pump stations;
- Storm water drainage conveyance capacity improvements;
- Projects involving land buyouts; and
- Designated uses of floodplain land.

Have there been any such flood management projects to review?		
Year	Yes/no	If yes, the location(s)
2026		
2027		
2028		
2029		
2030		

4.6.K Review/Update of Pollution Prevention/Good Housekeeping Program for Existing Permittees

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 The City of Carterville is not a new permittee, so 4.6.L is not applicable.

4.6.M Adaptive Management

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 programmatic BMPs shall be acknowledged in the Stormwater Management

Program Report. (Examples of programmatic BMPs include: new training program, adopting a standard operating procedure for equipment cleaning, etc.)

Additional programmatic BMPs for the PPGH Program	
Date Added	Programmatic BMP Added – with Brief Description

Annual Review of MCM 6			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2026			
2027			
2028			
2029			
2030			

Table MCM6. Pollution Prevention/Good Housekeeping Program BMPs

Stormwater Goal (BMP)	Permit Section	Implementation Date	Update Frequency	Responsible Party	Measurable Goal	Tracking
O&M Manual						
Maintain the Carterville Operation & Maintenance Manual for Municipal Operations. Update as necessary.	4.6.D 4.6.E 4.6.F 4.6.G 4.6.H 4.6.I 4.6.J	Completed.	As needed.	City Adminstrator	Maintain the Operation & Maintenance Manual for Municipal Operations as a guide for the prevention and reduction of pollution in stormwater runoff from municipal facilities and operations. Update as necessary.	Completed, except for any needed updates.
Facility Inspections						
PPGH Inspections for Each Municipal Facility	4.6.1	Ongoing	As needed	City Adminstrator	Use PPGH Inspection Checklists & maps to perform inspections of each municipal facility, at minimum annually	Inspections tracked by keeping Checklists on file.
Maintain PPGH Inspection Checklists and BMP Maps for Each Municipal Facility. Update as needed.	4.6.I	Completed.	As needed	City Administrator	Develop PPGH Inspection Checklists for each municipal facility. Develop map of each facility's BMPs.	Add Inspection Checklists and Maps to O&M Manual.
Education/Training/Review						
Maintain Staff Training Material for MCMs 3, 4, 5, & 6. Keep records of material used for later reuse.	4.6.A 4.6.B 4.6.C 4.3.Q 4.4.K 4.5.L	Complete	As needed	City Administrator	Maintain Appropriate Staff Training Material for MCMs 3, 4, & 5. (See listed SWMP sections.) Keep records of material used for later reuse.	Has training material changed? (To be recorded in Appendix MCM6 of this SWMP document.)
PPGH Staff Training Program	4.6.A 4.6.B 4.3.Q 4.4.K 4.5.L	Ongoing	As needed	City Administrator	Provide stormwater training for City staff according to the Stormwater Program Training Schedule (Part 4.6-MCM 6-page 3 of this SWMP). Training frequency and topics are listed on the Schedule.	Track names/number of staff trained in section 4.6.A & 4.6.B of the SWMP.
Annual Review of MCM 6	4.6.M	Each January	Each January	City Administrator	Perform annual review of MCM 6 BMPs.	Note review date and any changes in section 4.6.M of SWMP document.

Part 5 – Monitoring, Recordkeeping, and Reporting

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.

5.3 MS4 Stormwater Management Program Report

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.*

B. *The annual reports must be submitted through the eDMR system. This is accessible through the Missouri Gateway for Environmental Management (MoGEM): https://dnr.mo.gov/mogem/*

Which City Staff have access to the eDMR system?	
NAME	Role in the eDMR system
Jonathan Cook	Community Official
	Certifier
Sarah Simon (Allgeier, Martin & Associates, Inc.)	Preparer

Part 6 – Special Conditions for Total Maximum Daily Loads

6.1 MS4s Subject to Total Maximum Daily Loads (TMDL)

6.1.A MS4s Subject to Wasteload Allocation (WLA)

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).

6.2.B TMDL Assumptions and Requirement Attainment Plan (ARAP)

The MS4 Operator shall develop a TMDL ARAP to address the TMDL's assumptions and requirements where applicable.

The City of Carterville is subject to the 2022 TMDL for Center Creek and Ben's Branch, with a single, aggregated Wasteload Allocation number assigned collectively to all MS4s in the watershed. However, the Missouri Department of Natural Resources has determined that this TMDL **does not** trigger the MS4 ARAP requirement. In an email sent on February 6, 2025, Aaron Nickolotsky (Stormwater Coordinator for the Water Protection Program/Water Pollution Control Branch) stated:

> *"… the Center Creek, Bens Branch, and Center Creek Tributary TMDL does not trigger the ARAP requirement found in MS4 permits due to the following language that is included in the Approved TMDL: "The permit conditions of the MS4 contain BMPs that are designed to reduce pollutant loads to the maximum extent practicable. The WLA for the MS4 is therefore set at current conditions plus inclusion of the BMPs."*

So, the City of Carterville does not need to prepare an ARAP or submit annual ARAP reports.

APPENDIX **MCM 1**

PUBLIC EDUCATION & OUTREACH

SUPPORTING DOCUMENTS

This space reserved, as needed, for documentation of Public Education activities listed in Table MCM 1.

APPENDIX **MCM 2**

PUBLIC PARTICIPATION

SUPPORTING DOCUMENTS

This space reserved, as needed, for documentation of Public Participation activities.

- Proof of public notice for meeting and renewal documentation.
- Proof (dated screenshot) of posting of renewal documentation.
- Proof of annual updates to the Council (Agenda or meeting minutes)

APPENDIX **MCM 3**

ILLICIT DISCHARGE DETECTION & ELIMINATION

CHECKLISTS AND SUPPORTING DOCUMENTS

Illicit Discharge Inspection Field Sheet

Section 1: Background Data

Outfall ID:		
Today's date:		Time:
Investigators:		Form completed by:
Temperature (°F):	Rainfall (in.): Last 24 hours:	Last 48 hours:
Camera:		Photo #s:
Notes (e.g., origin of outfall, if known):		

Section 2: Outfall Description

LOCATION	MATERIAL	CROSS-SECTION (SHAPE)		DIMENSIONS (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ Concrete ☐ Corrugated Metal ☐ Plastic ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ **Open channel**	☐ Concrete ☐ Earthen ☐ Rip-Rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
Flow Present?	☐ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	Stop watch
☐Flow #2	Flow depth		In	Tape measure
	Flow width	_____' (Top) _____" (Bottom)	Ft	Tape measure
	Measured length	_____' _____"	Ft	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Illicit Discharge Inspection Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables - Does Not include trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; origin not obvious	☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1. Sample for the lab?	☐ Yes	☐ No
2. If yes, collected from:	☐ Flow	☐ Pool

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Illicit Discharge Hotline Incident Tracking Sheet

Incident ID:

Responder Information	
Call taken by:	Call date:
Call time:	Precipitation (inches) in past 24-48 hrs:
Reporter Information	
Incident time:	Incident date:

Caller contact information (*optional*):

Incident Location *(complete one or more below)*

Latitude and longitude:

Stream address or outfall #:

Closest street address:

Nearby landmark:

Primary Location Description	**Secondary Location Description:**		
☐ Stream corridor *(In or adjacent to stream)*	☐ Outfall	☐ In-stream flow	☐ Along banks
☐ Upland area *(Land not adjacent to stream)*	☐ Near storm drain	☐ Near other water source (storm water pond, wetland, etc.):	

Narrative description of location:

Upland Problem Indicator Description

☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage
☐ Wash water, suds, etc.	☐ Other: _____	

Stream Corridor Problem Indicator Description

Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ "Normal"	☐ Oil sheen	☐ Cloudy	☐ Suds
	☐ Other: Describe in "Narrative" section			
Floatables	☐ None:	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead fish
	☐ Other: Describe in "Narrative" section			

Narrative description of problem indicators:

Suspected Violator (name, personal or vehicle description, license plate #, etc.):

Investigation Notes	
Initial investigation date:	Investigators:
☐ No investigation made	Reason:
☐ Referred to different department/agency:	Department/Agency:
☐ Investigated: No action necessary	
☐ Investigated: Requires action	Description of actions:
Hours between call and investigation:	Hours to close incident:
Date case closed:	
Notes:	

Standard Operating Procedures
for
Field Response
to Spills &
Reports of Illicit Discharge

December 2023

Standard Operating Procedures
For
Field Response
to Spills & Reports of Illicit Discharge

In-Office Activities:

1) Gather pertinent information:
- Responsible Party - name, title, Phone #, location.
- Complainant - name, title, Phone #, location.
- Water body, incident location, suspected source.
- Details of what happened & when.
- Contact info for Environmental Response
    - Carterville City Hall – 417-673-1341
    - Police Department – 417-673-2616 (non-emergency dispatch #)
    - MDNR Environmental Emergency Response 573-638-2436 (Must report if there is contamination of Waters of the State, a fish kill, or a fuel spill of more than 50 gallons.)

2) Gather Equipment:
- Spill response kit (sampling equipment-bottles, equipment, gloves, chain of custody, SOP etc…)
- Phone,
- Camera,
- GPS,
- Boots/ waders / field gear,
- Copy of name/numbers of people that you may need to contact.

On-Site Activities:

NOTE: Do not touch the discharge unless you know it is safe.

1) Determine leading edge of discharge in order to evaluate extent of damage.

2) Locate source and work to get discharge stopped (if applicable). Use "Tracing the Source" procedures found on page 17 of the Field Investigation Guide for Illicit Discharge Detection & Elimination.

3) Require mitigation activities as needed such as dams, diversions, booms, etc. When possible (considering terrain and amount of discharge), require vacuum trucks, or other physical removal of the discharge.

4) Collect samples if possible. Sample locations:
- Area where discharge entered stream,
- Upstream of discharge,
- Any storm system where contaminants were discharged,
- Area where discharge is at time of investigation,
- Area downstream of discharge.

5) Take notes of other life in stream, such as macroinvertebrates, algae, and fish. Note their size and behavior.

6) Isolate source with samples, photos, and other evidence. Eliminate other possible sources through sampling and photos.

7) If rainfall is a factor, determine duration, amount, and intensity.

8) Interview neighbors/employees as necessary to determine any other pertinent information on incident.

9) Request that the responsible party post public notice signs if there is possible impact for human health and is in a public access area.

10) Collect Field Notes:
- Arrival time,
- Sample collection times,
- Departure time,
- Contacts,
- Others involved,
- Document any actions by responsible party, and
- Time spent on investigation.

Additional Resources:

Water, Wastewater, and Sewer Spills
- Carthage Utility 417-237-7300 (vacuum truck)
- Webb City Public Works 417-673-6297 (vacuum truck)

Grease or Sewer Clean-up
- C&L Grease 471-717-0587

Gas and Petroleum Spills
- Carterville Fire Dept. 417-673-3070
- Jasper County Dispatch / Jasper County Emergency Management 417-673-5303

Standard Operating Procedures
for
Illicit Discharge Enforcement

December 2023

Summary of Enforcement Procedures

Upon discovery of an illicit discharge and determination of its source, the City and/or designee shall follow the procedures below. City Code references are from Chapter 250.

NOTE: If the violation constitutes an immediate danger to public health or public safety, the City and/or designee is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. (Skip to Item 8 below.)

1) NOTICE OF VIOLATION: (City Code, Section 250.140)

Upon discovery of an illicit discharge and determination of its source, the City and/or designee may order compliance by written notice of violation to the responsible person. The notice of violation shall contain:

a. The name and address of the alleged violator;
b. The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;
c. A statement specifying the nature of the violation;
d. A description of the remedial measures necessary to restore compliance with Chapter 250 of City Code and a time schedule for the completion of such remedial action;
e. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
f. A statement that the determination of violation may be appealed to the City by filing a written notice of appeal within ten (15) days of service of notice of violation;
g. A statement specifying that, should the violator fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator. Such notice may require without limitation:
    i. The performance of monitoring, analyses, and reporting
    ii. The elimination of illicit connections or discharges;
    iii. That violating discharges, practices, or operations shall cease and desist;
    iv. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
    v. Payment of a fine to cover administrative and remediation costs; and
    vi. The implementation of source control or treatment BMPs.

Compensatory Action: In lieu of enforcement proceedings, penalties, and remedies authorized by Chapter 250 of City Code, the City and/or designee may impose upon violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc. (City Code, Section 250.190)

2) PERMITTEE'S RESPONSE TO WRITTEN NOTICE: (City Code, Section 250.140)

a. The permittee should investigate immediately and take any action required to cease the illicit discharge. Such actions are to be taken within seventy-two (72) hours, or within a reasonable time after receipt of notice. All actions taken are to be reported to the City within the designated time period.
b. Time may be extended if weather conditions or other factors beyond the control of the permittee prevent immediate remedial action.

3) NOTICE OF COMPLIANCE:

Upon satisfactory cessation of discharge and any required remedial work the City shall issue a Notice of Compliance.

4) FAILURE TO COMPLY WITH NOTICE OF VIOLATION: (City Code, Section 250.160, 170, & 210)

If the violation has not been corrected pursuant to the requirements set forth in the notice of violation:

a. *Remedial Action by City:* The City and/or designee shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property.
b. *Denial of Entrance to Property*: It shall be 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.
c. *Cost of Abatement:*
    i. Within thirty (30) days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs.
    ii. The property owner may file a written protest objecting to the amount of the assessment within ten (10) 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.
    iii. The City and/or designee may recover all attorneys' fees court costs and other expenses associated with enforcement of Chapter 250 of City Code , including sampling and monitoring expenses.

5) APPEALS: (City Code, Section 250.150)

Any person receiving a notice of violation may appeal the determination of the City and/or designee.

a. The notice of appeal must be received within ten (10) days from the date of the notice of violation.
b. Hearing on the appeal before the appropriate authority, or their designee, shall take place within fifteen (15) days from the date of receipt of the notice of appeal.
c. The decision of the municipal authority, or their designee, shall be final.

6) ENFORCEMENT MEASURES AFTER APPEAL: (City Code, Section 250.160)

In the event of an appeal, if the violation has not been corrected within thirty (30) days of the decision of the municipal authority upholding the decision of the City and/or designee, then Item 4 above will apply.

7) CRIMINAL PROSECUTION: (City Code, Section 250.210 & 250.200)

a. *Criminal Prosecution:* Any person that has violated, or continues to violate, Chapter 250 of City Code shall be liable to criminal prosecution to the fullest extent of the law. The City and/or designee may recover all attorneys' fees court costs and other expenses associated with enforcement of Chapter 250 of City Code, including sampling and monitoring expenses.
b. *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 Chapter 250 of City Code 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, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

FOR EMERGENCY SITUATIONS AND/OR CONTINUING VIOLATIONS:

8) SUSPENSION OF MS4 ACCESS: (City Code, Section 250.080)

a. *Suspension due to Illicit Discharges in Emergency Situations.* The City and/or designee 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 City and/or designee 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 Chapter 250 of City Code may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The City and/or designee will notify a violator of the proposed termination of its MS4 access. The violator may petition the City for a reconsideration and hearing. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to Chapter 250, without the prior approval of the City and/or designee.

APPENDIX **MCM 4**

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

CHECKLISTS AND SUPPORTING DOCUMENTS

STORMWATER CONSTRUCTION INSPECTION CHECKLIST

City of Carterville

1200 East First Street · Carterville, MO 64855 · (417) 673-1341

This form is to be used for stormwater inspections by City of Carterville inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible. *Form updated Dec. 2023*

Date of Inspection:_____ **Grading Permit #:**_____ **Building Permit # (if applicable):** _____

Project Name/Location:_____ **Contractor/Owner:**_____

Inspection Type: ☐ Regular ☐ Rain Event (Amt._____) ☐ Complaint ☐ Drive-By ☐ Final

Inspected by:_____

	SWPPP Review	Adequate	Needs Maintenance	Comply By	Comments
1	SWPPP is on site and updated with records attached?	☐	☐		
2	Permit sign/notice is posted at construction site?	☐	☐		
3	Inspections performed every 14 days and after rain events?	☐	☐		

	Best Management Practices (BMPs)	Adequate	Needs Maintenance	Comply By	Comments
4	Streets & other property free of sediment & trash?	☐	☐		
5	Construction debris & trash properly covered/disposed?	☐	☐		
6	Perimeter controls properly installed & maintained?	☐	☐		
7	Inlet protection properly installed & maintained?	☐	☐		
8	Washout facilities available, marked, & maintained?	☐	☐		
9	Construction entrance properly constructed/maintained/ utilized?	☐	☐		
10	Disturbed areas stabilized after activity has ceased for 14 days?	☐	☐		
11	Discharge points & receiving waters free of sediment?	☐	☐		
12	Other erosion & sediment controls properly installed/constructed/maintained according to SWPPP?	☐	☐		
13	Stockpiles stabilized or contained by a BMP?	☐	☐		
14	Are permanent stormwater controls being implemented?	☐	☐		
15	Temporary BMPs no longer needed are removed?	☐	☐		
16	Fuel storage areas have secondary containment?	☐	☐		
17	Solvents, paints, fertilizers, etc. stored in a manner prohibiting exposure to rain or runoff?	☐	☐		
18	Dewatering operations filtering sediment/pollutants?	☐	☐		
19	Dust control practices utilized?	☐	☐		
20	Are natural resource areas (streams, wetlands, mature trees, stream buffers, etc.) protected with barriers or similar BMPs?	☐	☐		

Action Taken: ☐ Verbal Warning ☐ Written Warning ☐ Stop Work Notice

Additional Comments:

☐ See photos.

Additional Comments:

"I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Inspector's Signature:_____ **Date:**_____

Standard Operating Procedures
for
Stormwater Construction Inspection
And Enforcement

May 2026

Inspection Procedures Overview

An on-site construction site inspection will usually consist of the following components, followed by the development of an inspection report:

- Pre-Inspection Preparation
- Entry
- Records Review
- Site Inspection
- Exit Interview

Pre-Inspection Preparation

Prioritize your sites

- With stream buffers or environmentally sensitive areas
- Contractors with a history of non-compliance or frequent violations
- Projects on steep slopes or with major grading plans
- Commercial/Industrial or high density subdivisions

Review available files

- Permits
- Stormwater Pollution Prevention Plan (SWPPP) or Erosion and Sediment Control (ESC) plans
- Past inspection reports
- Monitoring/assessment reports
- Maintenance records

Identify significant pollutant sources and Best Management Practices (BMPs) you want to inspect

- Silt fence, sediment basins/silt traps, slope stabilization, etc.

Gather any items needed to perform the inspection

- Personal protective equipment
- Inspection checklists (copies will be needed for both the City and for the permittee)

Entry

Before entering the site

- Observe surroundings and various stages of construction
- Look at the construction exit locations and perimeter controls
- Enter date/time and weather conditions on the inspection form

When entering the site

- Review all postings
- Public Notification Sign in place and visible from construction entrance?
- Announce yourself to the person in charge

Records Review

Ask to see a copy of the SWPPP, permit, and inspection reports

- Specific items to review:
  - SWPPP
    - Date and preparer
    - Primary ESC BMPs used on-site
      - Are all BMPs required by the SWPPP in place?
      - Have BMPs been installed correctly and maintained?
        - Amendments to design, construction, or maintenance

          * If a SWPPP is not available for review, note the lack of an on-site SWPPP on the inspection form.
  - Inspection and maintenance records
    - Operator is required to inspect the site:
      - Once every fourteen days,
      - Within 72 hours of any rain event, and
      - Within 48 hours of any storm event of 3.89" or more in 24 hours.
    - Permanent stormwater management practices
    - Pollution prevention practices
    - Discharge points
    - Amendments to design, construction, maintenance, weather or seasonal conditions
- Site Map
  - Should be up to date with construction activities
  - Should be red-lined and dated

Site Inspection

Inspect discharge points and downstream, off-site areas for signs of impact

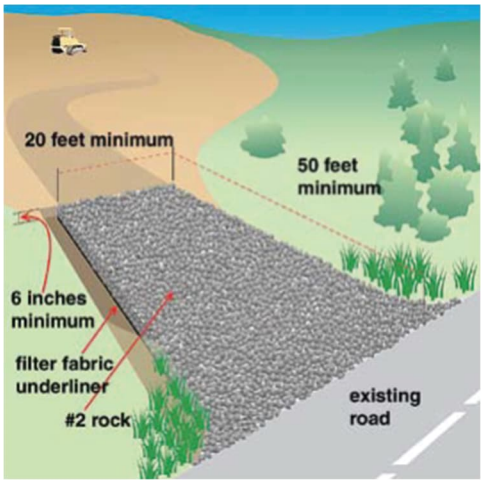
- If sediment is leaving the site, walk downstream and document the extent of travel and impact on receiving
- waters or storm drains.
- Inspect down-slope inlets

Inspect Perimeter Controls

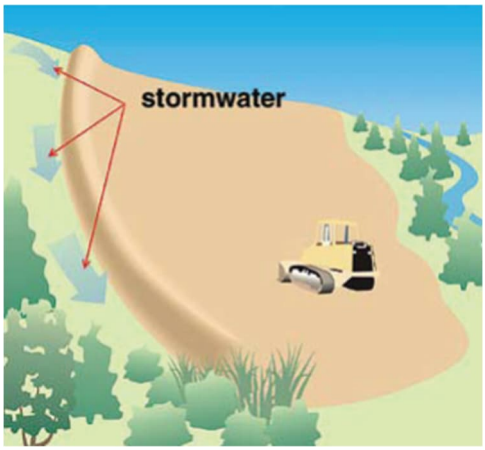
- Note what controls are being used and if they're installed correctly and being maintained
- Inspect the construction entrance to determine of there is excessive tracking
- Check sediment controls and make sure inlets are protected.

Stabilized Construction Entrance

- If there is track-off from the entrance, the operator has 12 hours to clean it up.
- Are vehicles leaving the site from other locations and not using the designated entrance/exit?
- Does the rock need to be replaced, replenished, or raked?
- Is the entrance/exit long enough to remove mud from tires?
- Is the site graded away from the entrance/exit to prevent runoff from leaving the site?

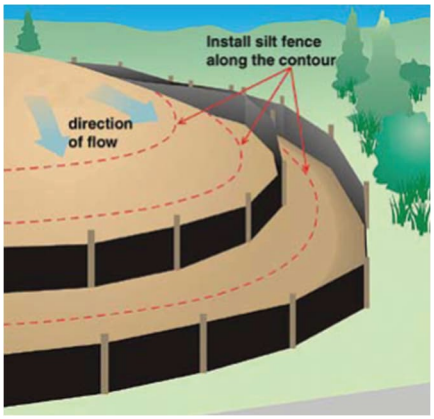


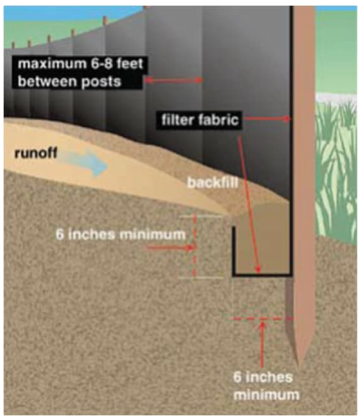
Diversion Berms



- Make sure the diversion discharges to a stable outlet or channel.
- Make sure diversion ditches and berms have been seeded.
- Is the diversion eroding? (channel grades should be relatively flat)
- Check dams may be necessary if high velocity flows are present.

Silt Fence





- Is the silt fence installed along the contour (on a level horizontal plane)?
- Are the ends turned up to help pond the water behind the filter? – J-hooks
- Is the filter trenched in with the stakes on the downhill side (6” deep by 6”wide)? • Has the sediment been removed when it reached 1/3 the height of the barrier?
- Filters should not be installed where concentrated flow is expected
  - Inadequate installation
    - Soil should be compacted after trenching
    - Stakes should be on the downhill side
  - Improper placement
    - Should not be used for steep, long slopes
    - Drainage area should be no greater than ¼ acre per 100 ft. of fence
      - Should be spaced 60-110 ft. apart on long slopes
  - Maintenance
    - Torn or degraded silt fence fabric should be replaced immediately
    - Sediment should be removed after reaching 1/3 the height of the fence

Temporary Silt Traps

- Check the location of the silt trap to make sure if it fails that it doesn’t pose a risk to life or property • Silt should be removed after it reaches 1/3 the design volume
- The trap should not be installed in a mainstream or near culvert outlets
- Check the outlet for needed maintenance

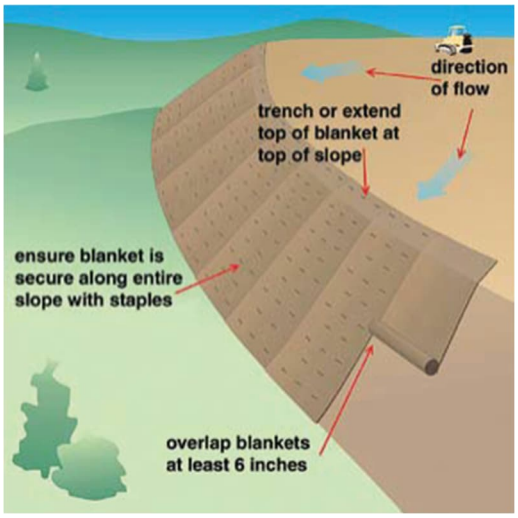
Vegetative Stabilization

- Are all exposed soil areas stabilized?
- Check for signs of erosion in vegetated areas
- Concentrated flows should not be allowed across newly seeded slopes
- If late in the year, the slope may need to be mulched versus seeded

Compare BMPs in the SWPPP with construction site conditions

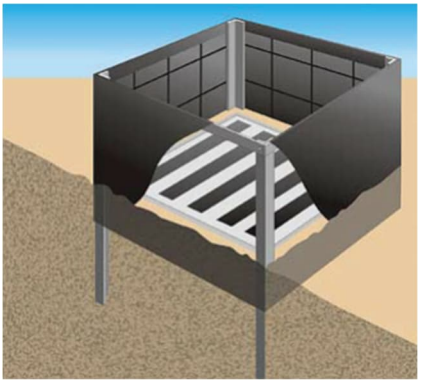
- Are additional BMPs needed? Look for areas where BMPs are needed, but are missing
- Describe potential violations and their locations.

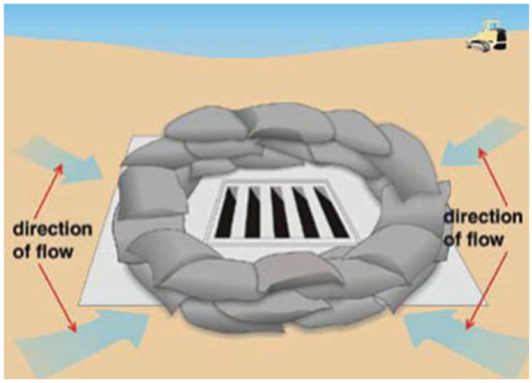
Mats, mulches, and blankets

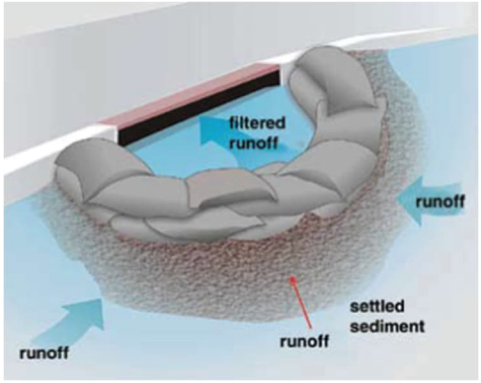


- Should come into complete contact with the soil.
- The top of the blanket should be trenched in – water shouldn't flow underneath it.
- Mulch should not be placed in concentrated flow areas.
- If erosion is occurring in mulched areas, more mulch may need to be applied.
- Check blankets and mats to see if sections are overlapped 4-6 inches and staples are 12 inches apart on tops and 24 inches apart down the sides and in the middle.

Storm drain inlet protection







- Inlet protection is a secondary BMP. Additional controls are also needed.
- Should not block the storm drain or cause flooding
- Should be in place immediately following storm drain installation, or prior to any land disturbance for existing inlets
- Sediment should be removed after each storm event
- Make sure unfiltered stormwater cannot enter the inlet
- If there's a specific safety concern, the BMP can be removed temporarily.

Inspect disturbed areas not currently being worked.

- All exposed soil areas must be stabilized no later than 14 days after the construction activity in that area has temporarily or permanently ceased.
- Temporary seed or straw, permanent seed or straw.

Inspect areas with final stabilization.

- Inspect stabilized areas to ensure that excessive erosion isn't occurring.
- If an area has uniform perennial vegetative cover (100%) with 70% density of the entire area, temporary BMPs need to be removed.

Taking Photographs

Take photos of

- Public notification sign
- All potential violations
- General views of the site
- Impacts to receiving waters.

Exit Interview

- Ask to speak to the responsible party for the ESC. If they're not on site, ask to speak to whomever is in charge.
- Let them know what findings you have (deficiencies, areas of concern, SWPPP not updated, inspections not being done, etc.).
- Leave a completed copy of the inspection checklist/report. (Keep one for City records.)
- Don't tell them what BMPs to use! You can tell them what typically works/doesn't work and refer them to the Best Management Practices (BMP) Manual for Land Disturbance Activity located on the City's stormwater website.

Summary of Enforcement Procedures

1) VERBAL NOTICE:
   If there is no immediate threat of contaminants being released into the stormwater system (streams, ditches, pipes, inlets, street gutters, etc.), then enforcement often can start with verbal communication during the inspection and exit interview.
   a. Discuss any deficiencies or areas of concern (as listed above, under Exit Interview).
   b. Education as to rules, regulations, and proper procedures may be appropriate here.
   c. City Staff shall make a record of verbal notice given, most likely on the inspection sheet.

2) WRITTEN NOTICE: (City Code, Section 250)
   If there is immediate threat of contaminants being released into the stormwater system, or if deficiencies are not, or cannot, be immediately remedied, the City, or designated agent, will immediately issue written notice (Notice of Violation) to the permittee:
   a. Include the nature and location of the alleged non-compliance.
   b. Include documentary evidence demonstrating non-compliance.
   c. Specify what remedial work is necessary to bring the project into compliance.
   d. Specify date by which remedial work must be completed.

3) PERMITTEE'S RESPONSE TO WRITTEN NOTICE: (City Code, Section 250)
    a. The permittee shall take the required remedial action within seventy-two (72) hours, or within a reasonable time after receipt of notice.
    b. Time may be extended if weather conditions or other factors beyond the control of the permittee prevent immediate remedial action.

4) NOTICE OF COMPLIANCE: (City Code, Section 250)
    Upon satisfactory completion of the remedial work the City Inspector shall issue a Notice of Compliance and the development may proceed.

5) REVOCATION OF PERMIT & STOP WORK ORDERS: (City Code, Section 250)
    a. The City Inspector may revoke the drainage permit if:
        i. The permittee has not agreed to perform the required remedial action, or
        ii. The permittee has not completed the required remedial action within the allotted time.
    b. Upon revocation of a drainage permit the City shall issue a Stop Work Order.
        i. Stop Work Order shall be directed to the permittee, and he/she shall immediately notify persons owning the land, the developer, and those persons or firms actually performing the physical work of clearing, grading, and developing the land.
        ii. The Stop Work Order shall direct the parties involved to cease and desist all or any portion of the work on the development or a portion thereof which is not in compliance, except such remedial work necessary to bring the project into compliance.
    c. If, after revocation of permit and issuance of the Stop Work Order, the permittee satisfactorily completes the remedial work, the City shall issue a Notice of Compliance and the development may proceed.

6) APPEALS: (City Code, Section 250)
    The permittee may appeal any order, requirement, decision, or determination made by the City: in accordance with the procedures set forth below:
    a. The Notice of Appeal must be received by the City within ten (10) days from the date of the Notice of Violation.
    b. A hearing on the appeal before the appropriate authority (City Council), or their designee, shall take place within fifteen (15) days from the date of receipt of the Notice of Appeal.
    c. The authority shall consider any information offered by the aggrieved person bearing on the dispute and may recommend an appropriate course of action: Either reversal, modification, or confirmation.
    d. The decision of the municipal authority or their designee shall be final.

7) ENFORCEMENT AFTER APPEAL: (City Code, Section 250)
    If the violation has not been corrected within thirty (30) days of the decision of the municipal authority upholding the decision of the City, then representatives of the City shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be 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.

CITY OF CARTERVILLE, MISSOURI

Pre-Construction Plan Stormwater Submittal Checklist

DATE: _____

A.Name of Project: _____

B. Location of Project: _____

C. Name of Owner: _____

D. Name and Company of Engineer: _____

_____

E. Checklist

- ☐ Applicant information including name, legal address, and telephone number
- ☐ Common address and legal description of site
- ☐ Signature and seal of registered engineer/surveyor
- ☐ Design/owner certification
- ☐ Vicinity map
- ☐ Project narrative (in the Drainage Report, usually)

E.1 Existing and proposed mapping and plans (recommended scale of 1@ = 50 = or greater detail), which illustrate at a minimum:

- ☐ Existing and proposed topography (minimum of 2-foot contours recommended)
- ☐ Drainage area map showing watershed and subbasin boundaries, labeled with unique identifiers and areas, for both pre-project and post-project conditions.
- ☐ Perennial and intermittent streams.
- ☐ Mapping of predominant soils from USDA soil surveys as well as location of any site-specific borehole investigations that may have been performed.
- ☐ Boundaries of existing predominant vegetation and proposed limits of clearing
- ☐ Location and boundaries of resource protection areas such as wetlands, lakes, ponds, and other setbacks (e.g., stream buffers, drinking water well setbacks, septic setbacks)
- ☐ Location of existing and proposed roads, buildings, and other structures
- ☐ Minimum finished floor elevations for structures adjacent to drainage features
- ☐ Location of existing and proposed utilities (e.g., water, sewer, gas, electric) and easements
- ☐ Location of existing and proposed conveyance systems such as grass channels, swales, and storm drains
- ☐ Flow paths
- ☐ Location of floodplain/floodway limits and relationship of site to upstream and downstream properties and drainages
- ☐ Location and dimensions of proposed channel modifications, such as bridge or culvert crossings
- ☐ Location, size, maintenance access, and limits of disturbance of proposed structural stormwater management practices

E.2 Representative cross-section and profile drawings and details of structural stormwater.

E.3 Management practices and conveyances (i.e., storm drains, open channels, swales, etc.) which include:

- ☐ Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.)
- ☐ Design water surface elevations
- ☐ Structural details of outlet structures, embankments, spillways, stilling basins, grade control structures, conveyance channels, etc.
- ☐ Logs of borehole investigations that may have been performed along with supporting geotechnical report.

E.4 Hydrologic and hydraulic analysis for all structural components of stormwater system (e.g., storm drains, open channels, swales, management practices, etc.) for applicable design storms including:

- ☐ If detention is required, then calculations must be based on undeveloped conditions (Section 10.2 of the Stormwater Management Criteria Manual). [If detention is *not* required, then the Engineer is to perform a pre-project condition analysis for time of concentrations, runoff rates, volumes, velocities, and water surface elevations showing methodologies used and supporting calculations.]
- ☐ Huff's Quartile Rainfall Distributions are to be used for developing the necessary set of hydrographs for consideration (10.4.B).
- ☐ Summary table of subbasins including area, curve numbers/runoff coefficient, percent impervious, times of concentration.
- ☐ Post-project condition analysis for time of concentrations, peak runoff rates, times to peak, volumes, velocities, water surface elevations, and routing showing the methodologies used and supporting calculations.
- ☐ Summary table of results including peak discharges for all durations and annual probabilities analyzed, maximum stages, with controlling events highlighted.
- ☐ Final sizing calculations for structural stormwater management practices including, contributing drainage area, storage, and outlet configuration.
- ☐ Stage-discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities (e.g., stormwater ponds and wetlands)
- ☐ DRY BASIN: Additional storage volume provided for accumulated sediment below spillway (10.3.B). Either directly calculated and demonstrated to be provided in the design; OR, if 125% of the WQCV is incorporated into the design, that will suffice (Paragraph 13.4.e).
- ☐ WET BASIN: Min. of 3.0 feet of depth must be provided (10.3.B).
- ☐ Analysis of potential downstream impact/effects of project, where necessary.

E.5 Erosion and sediment control plan that at a minimum meets the requirements of Section 14 of the Stormwater Management Criteria Manual.

- ☐ Sequence of construction
- ☐ Construction entrances
- ☐ BMP locations and details
- ☐ Identify permanent and temporary BMPs

E.6 Water Quality (Section 13 of the Stormwater Management Criteria Manual).

- ☐ Does the Grading Plan indicate the designer has minimized the amount of direct runoff into the drainage systems? Are the directly connected impervious areas minimized? (See Figure 33.)

- ☐ Is extended detention or other water quality BMP required? (Paragraph 13.3.a requires it if the total impervious area > 10% of the total land area of the development.)
- ☐ Is runoff directed to a sand filter, etc. for runoff from areas having high concentrations of pollutants (fueling areas, etc.)? (13.3.b)
- ☐ Are calculations shown to determine water quality control volume (WQCV)? (13.4)
- ☐ Is the flow from the 2-year (50% AEP) storm detained to pre-project levels? (13.2.c)

E.7 Maintenance Plan for Permanent BMPs

The Maintenance Plan shall include the following:

- ☐ Name, address, and phone number of responsible parties for maintenance.
- ☐ Map of site with all Permanent BMPs labeled, structural (detention, grass swales, etc.) or non-structural (buffer zones for streams/wetlands, tree protection, etc.)
- ☐ Description of annual maintenance tasks.
- ☐ Description of applicable easements.
- ☐ Description of funding source.
- ☐ Minimum vegetative cover requirements.
- ☐ Access and safety issues.
- ☐ Testing and disposal of sediments that will likely be necessary.
- ☐ Evidence of acquisition of all applicable permits.
- ☐ Evidence of acquisition of all necessary legal agreements (e.g., easements, covenants, land trusts).
- ☐ Waiver requests

F. Signatures and Certifications

1. As the Owner (Applicant) and Engineer of Record, we understand that the review by the City is only for verification that the proposed improvements generally conform to the Stormwater Management Design Criteria Manual. The City is not approving the design or the suitability of the design for the application. The review does not relieve the applicant from complying with all rules, regulations, ordinances, laws or statutes that are in effect at the time of design or construction.

   The applicant shall retain full responsibility for any damages, which may result from any construction activity.

   It is understood that approval of the plan submitted with this application shall be valid only for the duration of the initial project approval granted by the City. In no case shall the approval extend beyond three and one half years at which time resubmission and certification will be required. It is further understood that all documents, site plans, design reports etc. submitted to the City shall be made available to the public (upon request) pursuant to The Sunshine Law.

_____	_____	_____
(Owner's Printed Name)	(Owner's Signature)	(Date)
_____	_____	_____
(Engineer's Printed Name)	(Engineer's Signature)	(Date)

2. One copy of the SWPPP, design plans, all specifications and supporting calculations, forms, and reports are herewith submitted and made a part of this application. I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of the city's Stormwater Management Criteria.

_____

(Engineer's Seal, Signature and Date)

3. 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. I hereby certify that all land-disturbing construction and associated activity pertaining to this site shall be accomplished pursuant to and in keeping with the terms and conditions of the approved plans. I also certify that a responsible person will be assigned to the project for day-to-day control. I hereby grant authorization to the local implementing agency the right of access to the site at all times for the purpose of on-site inspections during the course of construction and to perform maintenance inspections following the completion of the land-disturbing activity.

_____

(Signature of Project Owner/Operator)

APPENDIX **MCM 5**

POST-CONSTRUCTION STORMWATER MANAGEMENT

CHECKLISTS AND SUPPORTING DOCUMENTS

BMP Inspection Checklist for Long Term O&M of

Detention Basins

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** __/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N** **If Y, Amount Rain:**	

Type of detention basin: ☐Wet ☐Dry ☐Extended Dry

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	General					
1	Is there trash and/or debris present?					
2	Is there evidence of contamination and/or pollutants? (ex. Oil, gasoline, paint, etc.)					
3	Is there evidence of pests? (ex. mosquitos, wasp/hornet nests, rodent holes, beaver dams)					
4	Is there insufficient, or unhealthy, cover vegetation?					
5	Is there excessive growth of vegetation? (ex. brush, nuisance trees, other woody veg., etc.)					
6	If BMP has a planting plan, does the vegetation match the plan?					
	Side Slopes of Basin					
7	Is there evidence of erosion?					
8	Is there excessive growth of vegetation? (ex. brush, nuisance trees, other woody veg., etc.)					
	Storage Area					
9	Is there an accumulation of sediment?					
10	Is the liner (if applicable) visible and have more than three 1/4 inch hole in it?					
	Embankment and Abutments					
11	Is there discernable water flow through the berm(s)?					
12	Has any part of the berm settled four (4) inches lower than the design elevation?					
13	Is there encroachment on the basin or easement by buildings or other structures?					
	Outlet					
14	Is there evidence of erosion around outlet or in receiving stream?					
15	Are there trash, debris, or other obstructions in the outlet structure, overflow, and/or channel?					
16	Is the outlet structure in good condition and operating properly?					

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

BMP Inspection Checklist for Long Term O&M of

Grass Swales

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** ___/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N** **If Y, Amount Rain:**	

Grass swales should annually be inspected in the Spring.

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	General, Contributing Drainage Area, Pre-Treatment, and Filter Media/Soil					
1	Is there adequate access to the pre-treatment facility?					
2	Is there trash, debris, and/or landscaping waste present?					
3	Is there evidence of contamination and/or pollutants? (ex. Oil, gasoline, paint etc.)					
4	Is there landscaping waste present?					
5	Is there evidence of erosion?					
6	Is there evidence of mosquito proliferation?					
7	Is there evidence of clogging such as standing water, foul odors, water stains, algae or floating aquatic vegetation?					
8	Is there evidence of chemicals or undesirable fertilizers present?					
	Inlets and Outlets					
9	Are inlets/outlets obstructed? Is erosion evident around or below the inlet/outlet?					
10	Does the inlet provide stable conveyance into the swale?					
	Underdrains					
11	Is there evidence of the underlying soil media being clogged? (i.e. soil crusting, standing water and lack of dewatering between storms)					
12	Is the perforated pipe conveying water as designed? Are pipes clogged with debris or roots that have					
13	Is there evidence of slumping, cracking, or ither indicators of surface deterioration?					
	Vegetation					
16	Is grass cover dense enough or dead/dying?					
17	Are invasive species or weeds contributing to more than 10% of the facilities vegetation?					
18	Do trees form an overhead canopy that may drop materials (leaves or fruit) that may cause clogging?					
	Check Dams					
14	Is there evidence of undercutting or side cutting on either the up stream or down stream side of check dam?					
15	Is there a large accumulation of sediment or trash/debris behind the check dam?					

BMP Inspection Checklist for Long Term O&M of

Grass Swales

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

BMP Inspection Checklist for Long Term O&M of

Rooftop Disconnection

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** ___/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N** **If Y, Amount Rain:**	

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	Piping, Gutters, Drains and Pre-Treatment Sumps					
1	Is fluid from another source being piped near pervious areas?					
2	Is there sediment and/or debris accumulation?					
3	Is there evidence of mosquitos proliferation?					
4	Is runoff entering the receiving pervious area?					
5	Is the downspout disconnected?					
	Manufactured Products					
6	Is the downspout broken or not functioning correctly?					
	Downstream Treatment					
7	Have the receiving treatment units been maintained?					
8	Is there ponding at the point of disconnect?					
9	Is there erosion evident at the disconnection, bioretention/rain gardens, filter paths, or foundation planter?					
10	Is the disconnection discharge being disturbed?					
11	Do the receiving pervious area(s) have original dimensions as shown on plans?					
12	Is there encroachment on the receiving pervious area(s) or easement by buildings or other structures?					
13	If planter is used, is the planter structurally sound? Is there evidence of rot or cracks?					

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

BMP Inspection Checklist for Long Term O&M of

Sheet Flow to Vegetated Filter Strip

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** ___/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N** **If Y, Amount Rain:**	

These facilities should be inspected and cleaned annually during the non-growing season when it is easier to observe the flow path. Filter strips require routine maintenance scheduled to address typical vegetation growth and degradation. (i.e. mowing, weeding, erosion repair, pruning etc.).

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	General					
1	Is there trash and/or debris present?					
2	Is there evidence of contamination and/or pollutants? (ex. Oil, gasoline, paint etc.)					
3	Is there evidence of erosion?					
4	Is there evidence of mosquito proliferation?					
5	Are there complaints from local residents?					
6	Is there encroachment on the receiving pervious area(s) or easement by buildings or other					
	Vegetation					
7	Are invasive plants or weeds present?					
8	Are there indications of diseased or infested trees and/or shrubs?					
9	Are there signs of erosion or preferential flow paths present?					
10	Has drainage time significantly decreased? Soil aeration may be needed					
11	Is there vegetation damage due to foot or vehicle traffic?					

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

BMP Inspection Checklist for Long Term O&M of

Bioretention and Rain Gardens

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** ___/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N If Y, Amount Rain:**	
Underdrain? Y / N	**Hydraulic Configuration: On-line facility / Off-line facility**	
Filtration Media:	**Type of Pre-Treatment Facility:**	

Bioretention facilities should be inspected and cleaned annually during the Spring. In the initial 6 months after installation, the site should be inspected at least twice after storm events that exceed 1/2-inch of rainfall. During the first two months following installation weekly watering is necessary. After the first two months, watering should be done as needed during the first growing season (April-October). If vegetation needs to be replaced, one-time spot fertilization may be needed. If possible, use an organic fertilizer rather than a chemical fertilizer. Each bioretention facility should have a customized routine maintenance schedule to address typical vegetation growth and degradation. (i.e. mowing, weeding, erosion repair, pruning etc.)

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	General					
1	Is there trash and/or debris present?					
2	Is there evidence of contamination and/or pollutants? (ex. Oil, gasoline, paint etc.)					
3	Is there evidence of erosion?					
4	Is there evidence of mosquito proliferation?					
5	Are there complaints from local residents?					
6	Is there encroachment on the receiving pervious area(s) or easement by buildings or other structures?					
	Contributing Drainage Area and Pre-Treatment					
7	Is ponding present? Is there evidence of clogging of the inlets/outlets/ bypass?					
8	Is there dead vegetation or exposed soil?					
9	Is there dead vegetation or exposed soil?					
	Inlets					
10	Is there sediment build-up near inlets that prevent flow from getting into the bed?					
11	Is there trash or debris entering inlet?					
	Vegetation					
12	Are invasive plants or weeds present?					
13	Are there indications of diseased or infested trees and/or shrubs?					
	Underdrains and Outflow					
14	Are outlet structures clogged or obstructed?					
15	Are cleanouts capped and properly connected to underdrain?					

BMP Inspection Checklist for Long Term O&M of

Bioretention and Rain Gardens

	Filter Media					
16	Are there signs of erosion, settlement (depressions in media), or compaction?					
17	Bioretention soil media can become clogged when runoff carries high quantities of sediment. Is there evidence of crusting, standing water or the facility not dewatering between storms or longer than 48 hour after a storm?					
18	Is there dead vegetation or exposed soil?					
19	Evaluate the topsoil condition. Is the pH level appropriate (6-7) and composition (loamy sand or sandy loam) appropriate?					

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

BMP Inspection Checklist for Long Term O&M of

Permeable Pavement

This form is to be used for long term BMP inspections by inspection staff. A copy of this form is to be left with the development's responsible party, on-site if feasible.

Project:	**Inspection Date:** ____/____/_____	**Plan/Permit Number:**
Inspector:		**Date Placed in Service:** ___/___/_____
Location:		
Date of Last Inspection: / /	**Owner/ Representative:**	
As-built Plans Available: Y / N	**Rain in last 48 hrs.? Y / N** **If Y, Amount Rain:**	

Permeable pavement should annually be inspected in the Spring at a minimum.

	Best Management Practice (BMPs)	Needs Maintenance? Y/N	Investigated Previously? Y/N	Repaired? Y/N	Date Maintenance Must Be Completed By:	Corrective Action Needed
	General, Contributing Drainage Area, Treatment Cells, and Flow Diversion Structures					
1	Is there trash, debris, and/or landscaping waste present?					
2	Is there evidence of contamination and/or pollutants? (ex. Oil, gasoline, paint etc.)					
3	Is there landscaping waste present?					
4	Is there evidence of erosion?					
5	Is there evidence of mosquito proliferation?					
6	Is there encroachment on the receiving pervious area(s) or easement by buildings or other structures?					
	Adjacent Vegetation					
7	Are roots of adjacent (within 5 ft) trees and shurbs penetrating and clogging the pavement?					
	Pavement Surface and Structural Integrity					
8	Is loose material (e.g., bark, soil/sand, gravel, etc.) stored on the pavement surface?					
9	Is pavement stained, clogged, and/or ponding					
10	Is there evidence of slumping, cracking, or other indicators of surface deterioration?					
	Underdrains and Outflow					
11	Are outlet structures clogged or obstructed?					
12	Is there erosion and soil exposure evident below the outlet?					
13	Is each observation well or cleanout still capped?					

Additional Comments: ☐ See photos #_____

Overall conditions of Facility: ☐Acceptable ☐Unacceptable

Action Taken: ☐Verbal Warning ☐Written Warning ☐Notice of Violation

"I certify that the information submitted is, to the best of my knowledge and belief, true, and complete."

Signature: Date:

COUNCIL BILL# 24-02 ORDINANCE# 3013

AN ORDINANCE APPROVING AMENDMENTS TO THE CITY CODE.
BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CARTERVILLE, MISSOURI, AS FOLLOWS:

SECTION1. THAT THE CITY ADOPT THE FOLLOWING POST-CONSTRUCTION STORMWATER CODES TO BE INCORPERATED INTO CHAPTER 250 OF THE CITY CODE.

INTRODUCTION AND PURPOSE

Increased impervious area and compacted soils due to development can endanger water resources by increasing flow volumes in streams, causing stream degradation and downstream flooding, and by reducing water quality. The function of permanent stormwater controls is to reduce the negative effects of development. Permanent stormwater controls must be maintained to remain effective. The purpose of this ordinance is to safeguard persons, protect property, and prevent damage to the environment in Carterville by establishing legal authority to carry out all inspection and work necessary to ensure compliance with this Article.

DEFINITIONS

For the purposes of this Article, the following shall mean:

Best Management Practice (BMP): A structural or non-structural measure, facility or activity that helps to achieve stormwater management control objectives at a designated site.

Erosion and Sediment Control Plan: A set of plans prepared by or under the direction of a licensed professional engineer. Indicating the specific measures and sequencing to be used to control sediment and erosion on a land disturbance site during and after construction.

Grading Permit: A permit issued by the City of Carterville for the construction or alteration of ground, improvements and structures for the control of erosion, runoff, and grading.

Site: A parcel of land or a contiguous combination thereof, where grading work is performed as a single unified operation.

APPLICABILITY

This Article shall apply to all entities requiring a Grading Permit from the City of Carterville whose approved plans contain permanent stormwater BMPs, unless

explicitly exempted by the City of Carterville. Refer to Section 425.050 for Grading Permit applicability.

RESPONSIBILITY OF ADMINSTRATION.

The City of Carterville 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 administrator of the authorized enforcement agency to persons or entities acting in the beneficial interest of or in the employ of the agency.

SEVERABILITY

The provisions of this Article are hereby declared to be severable. If any provisions, clause, sentence, or paragraph of this Article or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Article.

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 increase in flow volumes in streams, stream degradation, downstream flooding, or reduction in water quality.

MAINTENANCE OF BMPS

A. For any site requiring a Grading Permit, all stormwater BMPs (structural and non-structural) shall be maintained according to the measures outlined in the most recent version of the City of Carterville Stormwater Management Criteria, and as per approved plans, maintenance agreement, and maintenance plan.

B. The person(s) or organization(s) responsible for maintenance shall be designated in the plans and any maintenance plans and/or covenants.

C. Any maintenance agreement or maintenance plan shall specify responsibilities for financing maintenance.

D. Any maintenance agreement or maintenance plan shall be binding upon subsequent owners of the permanent stormwater BMPs.

E. If maintenance activities are not completed in a timely manner, or as specified in the plans, any maintenance plan and/or maintenance agreement or covenant, the City of Carterville may complete the necessary maintenance at the owner's/operator's expense.

INSPECTION.

A. Applicability. This section applies to all entities requiring a Grading Permit from the City of Carterville whose approved plans contain permanent stormwater BMPs, unless explicitly exempted by the City of Carterville.

B. Access to Facilities.

1. The City of Carterville 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 site has security measures in force which require proper identification and clearance before entry into its premises, the site owner shall make the necessary arrangements to allow access to representatives of the City of Carterville.

2. Facility operators shall allow the City of Carterville ready access to all parts of the premises for the purposes of inspection, examination and copying of records, performance of maintenance work, and the performance of any additional duties as defined by state and federal law.

3. Any temporary or permanent obstruction to safe and easy access to the facility for purposes of inspection or performing maintenance work shall be promptly removed by the operator at the written or oral request of the City of Carterville and shall not be replaced. The costs of clearing such access shall be borne by the operator.

4. Unreasonable delays in allowing the City of Carterville access to facility are a violation of this Article.

5. If the City of Carterville has been refused access to any part of the premises containing permanent stormwater BMPs, and he/she 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 and/or perform maintenance work as part of a routine inspection 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 City of Carterville may seek issuance of a search warrant from any court of competent jurisdiction.

NOTIFICATION OF VIOLATION.

Whenever the City of Carterville finds that a person has violated a prohibition or failed to meet a requirement of this Article, the City of Carterville 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 performance maintenance work;
3. The violating practices, or operations shall cease and desist;

4. Payment of a fine to cover administrative and remediation costs; and
5. Implementation of source control or treatment BMPs.

If maintenance work is required, the notice shall set forth a deadline within which such work must be completed. Said notice shall further advise that, should the violator fail to perform the work with the established deadline, the work will be done by the City, a designated agency or a contractor and the expense thereof shall be charged to the violator.

APPEAL OF NOTICE OF VIOLATION.

Any person receiving a Notice of Violation may appeal the determination of the City of Carterville. The notice of appeal must be received within ten (10) days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or his/her designee shall take place within fifteen (15) days from the date of receipt of the notice of appeal. The decision of the municipal authority or their designee shall be final.

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 ten (10) 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 any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent of person in possession of any premises to refuse to allow the City of Carterville or designated agent or contractor to enter upon the premises for the purposes set forth above.

COST OF ABATEMENT OF THE VIOLATION.

Within 30 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 assessment within 10 days. If the amount due is not paid within a timely manner, 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 1st day following the discovery of the violation.

INJUNCTIVE RELIEF.

It shall be 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 City of Carterville 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.

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, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

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 criminal penalty of $500.00 dollars per violation per day and/or imprisonment for a period of time not to exceed 30 days.

The City of Carterville may recover all attorneys' fees court costs and other expenses associated with enforcement of this Article, including sampling and monitoring expenses.

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 City of Carterville to seek cumulative remedies.

ADOPTION OF ARTICLE.

This Article shall be in full force and effect immediately after its final passage and adoption. All prior ordinances and parts of ordinances in conflict with this Article are hereby repealed.

Section 2. That the Mayor is hereby authorized and directed to execute said Ordinance by and on behalf of the City of Carterville.

Passed by the City Council of the City of Carterville, Missouri this 12th **day of** March **, 2024**

Attest:

Debora S. Cornell
City Clerk

City of Carterville

By: Allan Duffin
Mayor

APPENDIX **MCM 6**

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

SUPPORTING DOCUMENTS

Staff Training Resources

 Last updated May 2026 City of Carterville, MO

Subject	Type	Source	Resource Title	Link	Est. Time	Training Category (from SW Program Training Schedule p 4.6.7 of SWMP): In-Depth PPGH Training	General PPGH Training	IDDE Inspector Training	Constr. Site SW Inpector Training	Post-Const. SW Mgmt	Specific In-Depth Topics (from Table 4.6.B): 1	2	3	4	5	6	7	8	9	10	11
In-Depth PPGH - for all City staff listed as needing In-Depth PPGH training (under number 1 of the SW Program Training Schedule (p 4.6.3 of SWMP))																					
In-Depth PPGH Playlist	YouTube Video	Wyoming Valley Sanitary Authority	Stormwater Training for Municipal Employees" (Playlist, includes the following 7 videos)	https://www.youtube.com/playlist?list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI	70 min total	x															
PPGH Training Introduction			Stormwater Training for Municipal Emplolyees - Part 6	https://www.youtube.com/watch?v=9dw7YLgK8d0&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=6	10 min		x														
Fleet Mainenance & Materials Handling			Stormwater Training for Municipal Emplolyees - Part 1	https://www.youtube.com/watch?v=TQXOK0b5MZc&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=1	9 min	x					x	x	x					x			
Construction Activities and Land Disturbance			Stormwater Training for Municipal Emplolyees - Part 2	https://www.youtube.com/watch?v=rnTg_Jlz98&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=2	9 min	x									x						
Parks and Grounds Maintenance			Stormwater Training for Municipal Emplolyees - Part 3	https://www.youtube.com/watch?v=dVGrLaPxZ7Y&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=3	9.5 min	x			x			x		x	x	x			x		x
Solid Waste Management (Floatables, Trash Collection, Transfer Stations, Mulching Operations, Landfill and Composting Operations)			Stormwater Training for Municipal Emplolyees - Part 4	https://www.youtube.com/watch?v=rNhhI9RcFxQ&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=4	9.5 min	x					x	x	x						x		x
Streets and Drainage Maintenance			Stormwater Training for Municipal Emplolyees - Part 5	https://www.youtube.com/watch?v=kWqgQb6pVr8&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=5	9.5 min	x					x	x	x		x	x					x
General IDDE			Illicit Discharge Detection and Elimination (IDDE) Training	https://www.youtube.com/watch?v=5bUIeWbL1XI	7 min	x		x													x
General PPGH - for all City staff not listed as needing In-Depth PPGH training under number 1 of the SW Program Training Schedule (p 4.6.3 of SWMP)																					
PPGH Training Introduction	YouTube Video	Wyoming Valley Sanitary Authority	Stormwater Training for Municipal Emplolyees - Part 6	https://www.youtube.com/watch?v=9dw7YLgK8d0&list=PLPSDayYOwbrdhFazirsTjuX7YMu3B1gsI&index=6	10 min		x														
Illicit Discharge Inspection Staff - MANDATORY ADDITIONAL TRAINING - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
General IDDE	YouTube Video	Wyoming Valley Sanitary Authority	Illicit Discharge Detection and Elimination (IDDE) Training	https://www.youtube.com/watch?v=5bUIeWbL1XI	7 min			x													x
IDDE Field Guide	Document	Carterville	Illicit Discharge Field Guide	https://cartervillemo.com/storm-water	n/a			x													x

Staff Training Resources

City of Carterville, MO

Subject	Type	Source	Resource Title	Link	Time	Training Category (from SW Program Training Schedule p 4.6.7 of SWMP): In-Depth PPGH Training	General PPGH Training	IDDE Inspector Training	Constr. Site SW Inpector Training	Post-Const. SW Mgmt	Specific In-Depth Topics (from Table 4.6.B): 1	2	3	4	5	6	7	8	9	10	11
Construction Site Inspection Staff - MANDATORY ADDITIONAL TRAINING - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
SOP for Construction Site Inspection	Document	Carterville	Standard Operating Procedure for Construction Inspection and Enforcement	Located in Appendix MCM4 of County's Stormwater Management Plan at: https://cartervillemo.com/storm-water	12 min				x												
Land Disturbance BMP Types, Installation, and Maintenance	Document	Neosho	BMP Manual for Land Disturbance Activity	https://neoshomo.gov/DocumentCenter/View/186/Best-Management-Practices-PDF	n/a				x												
Construction Site Inspection - Quick Overview	Youtube Video	Tippecanoe County Partnership for Water Quality	Stormwater Quality: Inspection	https://www.youtube.com/watch?v=HOgtUyWUzRE	8 min				x												
Online Construction Inspection Course	Videos and Exam	Environmental Protection Agency	EPA's Construction Inspection Course (5 Modules, plus Final Exam, with certification available upon completion)	https://www.epa.gov/npdes/construction-inspection-training-course	6.5 hours				x												
Parks Staff - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
Fueling Operations - Vehicles and Portable Gas Cans	Youtube Video	Tippecanoe County Partnership for Water Quality	Proper Refueling - Keeping our Waterways Clean	https://www.youtube.com/watch?v=IGpuWxNVCLM	6 min	x												x			
Parks and Grounds Maintenance	YouTube Video	MN Stormwater	Parks Maintenance and Stormwater Protection Employee Training	https://www.youtube.com/watch?v=6eD29UBINgE	12 min	x								x	x						x
Roads & Maintenance Staff - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
Maintenance & Storage Facilities	Youtube Video	countysandiego	Stormwater Strategies: Housekeeping	https://www.youtube.com/watch?v=UxOam2GEVgQ	14 min	x	x				x	x	x					x			
Fueling Operations - Vehicles and Portable Gas Cans	Youtube Video	Tippecanoe County Partnership for Water Quality	Proper Refueling - Keeping our Waterways Clean	https://www.youtube.com/watch?v=IGpuWxNVCLM	6 min	x												x			
Post-Construction BMP Inspection Staff (Long-Term O&M Inspections) - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
Bioretention Maintenance	Youtube Video	CenterforWatershed	Stormwater BMP & LID Maintenance	https://www.youtube.com/watch?v=coFbdMB-q0U	15 min					x											
Rain Garden Maintenance	Youtube Video	MN Stormwater	Rain Garden Maintenance Employee Training	https://www.youtube.com/watch?v=SM9sI9wQgz0	8.5 min					x						x					
PPGH Inspections of City Facilities - Subject-specific resources, to be used in addition to In-Depth PPGH videos above.																					
PPFH Facility Inspections	YouTube Video	West Valley Clean Water Authority	Module 3 - Performing Stormwater Inspections: Facility Inspection	https://www.youtube.com/watch?v=2klhSLPxe0o	13 min	x								x	x						x

Staff Training Resources

City of Carterville, MO

Subject	Type	Source	Resource Title	Link	Time	Training Category (from SW Program Training Schedule p 4.6.7 of SWMP): In-Depth PPGH Training	General PPGH Training	IDDE Inspector Training	Constr. Site SW Inpector Training	Post-Const. SW Mgmt	Specific In-Depth Topics (from Table 4.6.B): 1	2	3	4	5	6	7	8	9	10	11
Extra Resources - Use as needed, in addition to In-Depth PPGH videos above.																					
General IDDE	Youtube Video	Washington Conservation District	Illicit Discharge Detection and Elimination (IDDE) - *For General Staff Education*	https://www.youtube.com/watch?v=5bUIeWbL1XI	3.5 min	x		x													x
Salt & De-icing Operations	Youtube Video	IowaDOT	Anti-Icing and Deicing - Winter Operations Training Series 12 of 15	https://www.youtube.com/watch?v=HZI_ZbWybIU	7.5 min	x											x				
Salt & De-icing Operations	Various	Minnesota	Smart Salt Training	https://www.pca.state.mn.us/business-with-us/smart-salting-training	n/a	x											x				
Additional Resources - Add as needed																					

PPGH = Pollution Prevention/Good Housekeeping for municipal operations
IDDE = Illicit Discharge Detection and Elimination
SW = Stormwater
Const. = Construction

In-Depth Topics from SWMP Table 4.6.B

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
11 = Illicit Discharges

Stormwater Program Training Schedule

1. In-Depth Training for Pollution Prevention/Good Housekeeping (PPGH) – MCM6
    a. Frequency: ANNUAL
    b. Topics: See table in section 4.6.B.
    c. Applicable Staff :
        i. Building maintenance/custodial staff
        ii. Fleet maintenance staff;
        iii. Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
        iv. Road maintenance staff;
        v. Road salt/de-icing staff; and
        vi. Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.

2. General Training for Pollution Prevention/Good Housekeeping – MCM6
    a. Frequency:
        i. Existing Employees: Initial training
        ii. New Employees: Within one year of being hired
        iii. Additional training as needed.
    b. Applicable Staff: All employees not listed in number 1 above.

3. Illicit Discharge Detention and Elimination (IDDE) Training – MCM3
    a. Frequency:
        i. Existing Employees: Initial training
        ii. New Employees: Within one year of being hired
    b. Applicable staff include:
        i. IDDE inspection staff;
        ii. Building inspection staff;
        iii. Construction inspection staff;
        iv. Fleet maintenance staff;
        v. Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
        vi. Road maintenance staff;
        vii. Road salt/de-icing staff; and
        viii. Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.
        ix. Police

4. Training for Construction Site Runoff Control & Post-Construction Stormwater Management – MCM4 & MCM5
    a. Frequency: Once per permit cycle (Oct 2026-Sept 2031)
    b. Applicable staff include:
        i. Construction Inspection staff;
        ii. Inspection staff for Long-Term BMP inspections

Operation and Maintenance (O&M) Manual

for:

Carterville City Buildings and Grounds Department

Buildings and Grounds Department
Operation and Maintenance (O&M) Manual

Table of Contents

Buildings and Grounds Department
Operation and Maintenance (O&M) Manual

I. Introduction

This manual is designed to assist Carterville City personnel on how to properly implement Best Management Practices (BMP's) on City owned facilities and field activities as part of the municipal stormwater management program.
This manual will identify the potential pollutants and activities that can contribute to the pollution of storm waters as well as the BMP's used to ensure that the potential for these pollutants affecting storm water is diminished to the maximum extent practicable.

II. Potential Pollutant Sources

A variety of pollutants are associated with stormwater pollution due to municipal activities including: sediment, nutrients, bacteria and viruses, oxygen demanding substances, oil and grease, metals, toxic pollutants and floatables (Table 1). The impacts of these pollutants on water quality along with a discussion on municipal activities which can potentially contribute to their introduction into stormwater runoff are presented in the following subsections.

A) Sediment. Sediment is a common component of stormwater, and is considered to be one of the most damaging pollutants in Missouri. Sediment fills in streams, lakes, rivers, wetlands and road drainage ditches, and can affect aquatic life by smothering fish larvae and eggs. Suspended soil particles can cause water to look cloudy or turbid. Excessive turbidity reduces light penetration in the water, impairing the sight of feeding fish; clogs fish fills, and increases drinking water treatment costs. Fine sediment also acts as a vehicle to transport other pollutants including nutrients, trace metals and hydrocarbons to nearby surface waters. Significant sediment-borne pollutants are associated with highway runoff; originating from pavement wear, vehicles and other road maintenance. Other sources of sediment include erosion from new development and construction sites.
B) Nutrients- nutrients, especially nitrogen and phosphorus, can cause algae blooms and excessive aquatic plant growth in water bodies. These conditions can impair many important uses of these waters, including recreation, fish habitat, and water supply. Nitrogen and phosphorus associated with stormwater runoff come mostly from fertilizer application. Phosphorus has also been associated with application of sand and salt of roads. Nutrients are a result of yard debris, garbage, as well as fertilizer and pesticide use.
C) Metals- Trace metals are a water quality concern because the toxic effects they can have on aquatic life. Metals can also be a health hazard to humans through direct ingestion of contaminated water or through eating contaminated fish. The most common trace metals found in

stormwater runoff in urban areas are lead, zinc, copper, cadmium, nickel and other metal sources originating from body rust, brake lining wear steel highway structures, tire wear, steel fabrication and vehicle maintenance.

D) Oxygen-demanding substances- oxygen-demanding substances tend to deplete the dissolved oxygen levels in streams and lakes. The depleted oxygen supply can result in the reduction of aquatic life. Oxygen-demanding substances are found in yard waste (such as leaves and lawn clippings), animal wastes, street litter and organic matter.

E) Bacteria and Viruses- bacteria and viruses are the most common microorganisms found in surface water runoff. Bacteria and viruses often carry diseases which can be transferred to animal life and to humans. The main sources of these contaminants are animal excrement and sanitary sewer overflows.

F) Oil, Grease and Hydrocarbons- oil grease and hydrocarbons contain a wide array of compounds, some of which are toxic to aquatic organisms at low concentrations. The main sources of oil and grease are leakage from engines and waste oil disposal. Hydrocarbons typically come from spills, leaks, lubricants and asphalt surface leachate. Hydrocarbon levels are highest from parking lots, roads and service stations.

G) Floatables- floatables (garbage) are pollutants that may be contaminated with heavy metals, pesticides and bacteria. Typically resulting from street refuse or industrial yard waste, floatables also create an eye sore in water ways and detention basins.

Pollutant	Source	Impacts
Sediment	Construction sites, vehicle/boat washing, agricultural sites	Destruction of aquatic habitat for fish and plants, transportation of attached oils, nutrients and other chemical contamination, increased flooding. Sediment can transport other pollutants that are attached to it including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of total suspended solids (TSS), a common water quality analytical parameter.
Nutrients (Phosphorus, Nitrogen Potassium, Ammonia)	Fertilizers from agricultural operations, lawns and gardens; livestock and pet waste, decaying grass and leaves, sewer overflows and leaks.	Harmful algal blooms, reduced oxygen in the water, changes in water chemistry and pH. Nutrients can result in excessive or accelerated growth of vegetation, resulting in impaired use of water in lakes and other receiving waters.
Hydrocarbons (Petroleum Products, Benzene, Toluene, Ethyl benzene, Xylene)	Vehicle and equipment fluid leaks, engine emissions, pesticides, equipment cleaning, leaking fuel storage containers, fuel spills, parking lot runoff	These pollutants are toxic to humans and wildlife at very low levels. Carcinogenic. Teratogenic.
Heavy Metals	Vehicle brake and equipment wear, engine emissions, parking lot runoff, batteries, paint and wood preservatives, fuels and fuel additives, pesticides, cleaning agents	Metals including lead, zinc, cadmium, copper, chromium and nickel are commonly found in stormwater. Metals are of concern because they are toxic to all life at very low levels. Carcinogenic. Teratogenic.
Toxic Chemicals (Chlorides)	Pesticides, herbicides, dioxins, PCBs, industrial chemical spills and leaks, deicers, solvents,	Chemicals are of concern because they are toxic to all life at very low levels. Carcinogenic. Teratogenic.
Debris/Litter/Trash	Improper solid waste storage and disposal, abandoned equipment, litter	Aesthetically unpleasant. Risk of decay product toxicity. Risk of aquatic animal entrapment or ingestion and death.
Pathogens (Bacteria)	Livestock, human, and pet waste, sewer overflows and leaks, septic systems	Human health risks due to disease and toxic contamination of aquatic life.

Table 1 Potential pollutants of concern associated with municipal activities.

Sources of Pollution	Primary Pollutant: Sediment	Nutrients	Heavy Metals	pH (acids and bases)	Pesticides & Herbicides	Oil & Grease	Bacteria & Viruses	Trash, Debris, Solids	Other toxic Chemicals
Clearing, grading, excavating, and un-stabilized areas	√							√	
Paving operations	√					√		√	
Concrete washout, stucco and cement waste			√	√				√	
Structure construction, painting, cleaning			√	√				√	√
Demolition and debris disposal	√							√	
Material Delivery and storage	√	√	√	√		√		√	√
Solid waste disposal								√	√
Hazardous Waste, contaminated spills			√	√	√	√			√
Sanitary waste		√		√			√		
Vehicle/equipment fueling, maintenance, use and storage						√		√	√
Landscaping operations	√	√			√			√	√
Vehicle washing (**Not allowed at this location**)									

III. Facilities Locations, Activities and Control Measures

1. City Operations Compound (High priority)

Location- Located at 310 outh ennessee is shared with the Water, Streets, ewer, and Fleet Departments.

Activities- The compound is used for employee and equipment parking, storage of equipment attachments, new park equipment (benches, pick nick tables, sign posts, etc), pipe and wood. The buildings are used for the mower, supplies storage and small engine service and repairs. The most common supplies stored in the building are:

paint thinner	fertilizer	propane
solvent	snow and ice melt	pipe glue
vehicle fluids	paint	spray paint
equipment spare parts	gasoline	grease
	oil	

Control Measures SOPs

Good House Keeping. Good housekeeping practices offer a practical and cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with storm water. Good housekeeping practices also help to enhance safety and improve the overall work environment.

- Indoor work areas will be kept clean and organized.
- Outdoor storage areas will be maintained clean and organized.
- Trash and litter are to be picked up from work areas daily. All trash is to be disposed of in approved dumpsters on site, make sure the dumpster lids are closed.
- The yard will be walked to pick up and dispose of litter weekly
- Fuel, oil, fertilizers, herbicides, paint, solvents and other chemicals will be stored indoors neatly organized; containers must be properly labeled, hazardous chemicals will be stored in a locked container.
- Concrete wash out activities are not allowed at this facility.

Vehicle and Equipment Parking Areas

- Vehicles and equipment will be parked on the approved designated areas
- If any leaks are discovered, a drip pan will be used to collect the fluids and vehicle will be scheduled for repairs.

- Any leaks or spills that do wind up on the pavement will be cleaned using dry methods (absorbent material, sweep when dry and dispose in the garbage can)

Vehicle and Equipment Cleaning Areas

- No washing is allowed outdoors.
- There are no wash facilities at this location. All major washing is done at:
    - City of Webb City commercial car wash locations

- Minor washing is done inside the shop were floor drains go to the sanitary sewer.

Vehicle and Equipment Maintenance Areas

- All major repairs and maintenance activities are conducted at the City Shop located at this facility.
- Activities such as adding oil to engines, transmissions and differentials are done indoors.
- Oils and other automotive fluids are neatly and cleanly stored. Secondary containment will be used under the used oil container and other bulk oil containers.
- Equipment that is stored outside will be inspected to make sure that all drips are contained and/or repaired.

Mower and Small Equipment Maintenance

- Equipment will be kept in good operating and clean conditions.
- Mowing, trimming, edging equipment will be cleaned using high pressure air or manual devices when possible. Debris from such cleaning will be swept and disposed of in proper waste container.
- Mowing, trimming, or edging equipment may be hosed of on grass areas as long as no detergents or solvents are used in the process. All debris from such cleaning must remain on grass or be deposited into a proper waste container.
- All other cleaning will take place in specified and approved equipment cleaning wash bay that drains to the sanitary sewer.
- Equipment should be kept free from leaks of any sort. All leaks will be caught in a catch pan or have absorbent materials applied. Caught items will be properly disposed of at a materials reclamation area. Absorbent materials will be disposed of in a proper waste container.
- Blade Sharpening, grinding activities- floors are swept after project has been completed.
- All used oil and other vehicle fluids are collected in 5 gallon containers labeled used oil and are taken to the Carterville Fleet Department to be recycled.
- Oil filters are drained into the used oil collection container and after 24 hours of draining time they are placed in the dumpster.

2. Parks

Locations.

Comet Park	400 West Main	12 acres
Garrett Park	600 North Pine 12	16 acres
City Hall Park	1200 East 1st	3 acres

Activities

- Mowing Grass
- Fertilizer application
- Herbicide treatment
- Facilities clean up and maintenance (bathrooms, parking lots, etc)
- Garbage collection
- Mulching

Control Measures SOPs

<u>Lawn Mowing and/or trimming</u>

- Mowing/trimming operations will occur weekly, twice weekly, or as necessary at each location.
- All mowing/trimming equipment will be properly fueled at a proper fueling location. Any spilled fuels will have absorbent materials applied to absorb them. Absorbent materials will be disposed of in a proper trash container.
- Mowers will have mulching type decks that are kept in good repair with all guards and deflectors in place.
- Trimmers will have all deflectors in place and in good repair.
- All materials resulting from mowing/trimming operations should remain on grass.
- Trimmings that are found on hard surfaces will be blown or swept back on to the grass.
- Trimmings that cannot be swept or blown back on to grass will be swept and deposited into appropriate waste container.

Fertilizer application

- City will order and consume fertilizer as needed. Generally fertilizer will not be stored.
- If fertilizer is stored, it will be inside of a building.
- Fertilizer will be applied once or twice annually as needed.
- All fertilizer applications will be supervised by a Certified Pesticide Applicator.
- Fertilizer will be applied in accordance to manufacturer's instructions.
- Fertilizer will be transported to site in bags.
- Fertilizer spreaders will be filled at the site where the use is intended.
- Bags will be opened individually and dumped into spreader.
- Any spilled fertilizer will be swept and returned to spreader or spread on grass.
- Fertilizer that lands on hard surfaces will be swept or blown back onto grass.
- Fertilizer bags will be disposed of in a proper waste container.
- Any errant fertilizer found in vehicle will be swept and spread on grass.

Herbicide/Pesticide Application

- Will be purchased and consumed as needed. Minimal pesticides will be stored.
- Stored product will be kept in a separate cabinet with locked doors.
- Product applications will be supervised by a Certified Applicator.
- Product will be mixed and applied according to manufacturer's directions.
- Product will be applied as needed when weather conditions allow.
- Appropriate PPE will be worn when mixing and applying products.
- Product will be mixed in an area and manner to avoid spillage.
- If a spill occurs, absorbent materials will be applied to spill. Absorbent materials will be disposed of in appropriate waste container.
- Empty product containers will be disposed of in appropriate waste containers.
- Product sprayers will be secured in vehicles when transported.
- All mixed products will be applied to plants or other appropriate locations. Surplus materials may not be deposited into storm drain or sanitary sewer.

Restroom Maintenance

- All restrooms will be cleaned in accordance to minimum acceptable standards.
- Restroom floors will be swept. Swept materials will be collected and disposed of in a proper waste container.
- Restroom floors and walls may be hosed. All water from such activities must drain into the sanitary sewer, or onto landscaped areas. No such water may enter the storm drain.

- Restroom floors will be mopped. All water from such activities will be put into the sanitary sewer or dumped onto landscaped areas. No such water shall be allowed to enter the storm drain.
- All cleaning chemicals shall be used in accordance to manufacturer's specifications.
- Cleaning chemicals shall be mixed in accordance to SOP for cleaning chemicals.
- Weekly visual inspections and repaired problems will be logged on the appropriate reports located on the appendices section of this manual.

Pavilion Cleaning and Maintenance

- Pavilions will be cleaned as necessary to accommodate reservations or to maintain minimum acceptable standards.
- Pavilions may be blown off. All trash and debris shall be collected and deposited into an appropriate waste container.
- Pavilions may also be hosed or pressure washed. All water resulting from such activities must go onto landscaped areas. No such water may enter the storm drain.
- Any debris resulting from hosing or pressure washing shall be collected and deposited into an acceptable trash container.
- Weekly visual inspections and repaired problems will be logged on the appropriate reports located on the appendices section of this manual.

Sidewalks, Parking Lots, and Trails in and around Parks and Public Facilities.

- Parking lots will be swept by Public Works annually or as needed.
- Trails and sidewalks will be kept free of debris as necessary.
- Trails and sidewalks will be blown off as needed. Debris will be blown onto grass or planted areas.
- Curbs and gutters around parking lots will be blown out or swept as needed. Debris will be blown onto grass or planted areas when possible. When not possible, debris will be collected and deposited into proper waste container.
- Garbage and other debris will be removed from catch basins.
- Weekly visual inspections and repaired problems will be logged on the appropriate reports located on the appendices section of this manual.

Snow Melt/ Road Salt storage and use

- All snow melt materials will be kept in bags and stored in a storage building until they are consumed.
- Road salts will be stored in a proper road salt storage location. Road salts will be stored in a manner to be protected from storms and to allow minimal dissolving of salts.
- Snow melt and road salt materials will be loaded into spreading devices as needed and as can be consumed. Materials will not remain in spreading devices if unused. Unused road salts will be returned to stockpile.
- Snow melt and road salts will be applied to parking lots and walkways as needed using minimal necessary materials. Materials may be reapplied only as needed for public safety.

- Any spillage of snow melt material or road salts will be returned to the spreading device and applied to appropriate areas. Spilled materials may also be swept and deposited in appropriate waste container.
- Snow melt or road salts that are not dissolved will be blown or swept of parking lots or walkways as needed. Removed materials will either be blown to landscaped areas or collected and deposited in an appropriate waste container.
- Snow removal equipment is washed at the waste water facility drying beds.

3. Field Activities and Control Measures

Activities and Control Measures

- Tree removal or pruning as needed- All tree removal materials are ground up and hauled to green waste facility, all debris from the work area are cleaned up by the end of each work day.
- Plant trees- trees are planted through out the year; a back hoe is used to excavate the holes, trees are brought in to the work area on a flat bed trailer or truck, street and gutters are swept by the end of each work day.
- Sprinkler repair- is an as needed activity, any dirt that is placed on the street, gutters or parking lot will be removed from these hard surfaces by the end of each work day.
- Snow removal of City facilities sidewalks and parking lots. Salt and de-icing chemicals are used in limited amounts any over application gets cleaned up.

Other Control Measures

Good house keeping. Pick up garbage from the work sites, sweep work areas after work is completed.
Material management; keep stock piled materials from entering the storm drain system.

4. Spill Prevention and Response Procedures

Hazardous Material	Location of Spill	Reportable Quantity
Gasoline, Diesel Fuel and Oils	Land/Water	25 gallons or visible sheen

Each facility, work area or service vehicle has a spill response kit. Most spills can be cleaned up following the product manufacturer recommendations or for liquid spills using absorbent/oil dry materials. Absorbent/oil dry, sealable containers, plastic bags, and shovels/brooms are suggested minimum spill response kit.

1st Priority: Protect all people
2nd Priority: Protect equipment and property
3rd Priority: Protect the environment

1. Make sure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
2. Stop the spill source
3. Check for hazards (flammable material, noxious fumes, cause of spill) – if flammable liquid, turn off engines and nearby electrical equipment. If serious hazards are present leave area and call 911. LARGE SPILLS ARE LIKELY TO PRESENT A HAZARD.
4. Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers
5. If possible, stop spill from entering drains (use absorbent or other material as necessary)
6. Stop spill from spreading (use absorbent or other material)
7. If spilled material has entered a storm sewer; contact the City Storm Water Department.
8. Clean up spilled material according to manufacturer specifications, for liquid spills use absorbent materials and do not flush area with water.
9. Properly dispose of cleaning materials and used absorbent material according to manufacturer specifications.

Emergency Numbers

Carterville City Fire Department	417 673 3070
Carterville City Police Department	417 673 2616
Carterville City Storm Water Collections	417 673 1341

5. Inspections

Personnel from the Public Works Department will conduct inspections of the assigned areas and document with the appropriate report. Inspection reports and logs are located on the appendices section of this manual.

- Weekly visual inspections for:
  - Parks (include buildings and parking lots).
  - Buildings and parking lots.

- nnual Comprehensive Inspections for:
  - City Operations Compound

Weekly visual inspections will be tracked in the log attached on appendix F, annual comprehensive inspections will be documented on appendix G; spills will be cleaned up immediately and documented on a spill report located on appendix D.

Deficiencies will have to be corrected with in one week of being reported. All inspections and follow up actions will be documented and kept within this O&M Manual. Corrective Action Log Appendix E

6. Employee Training

All employees will receive training regarding this O&M Manual at least annually.
The training will cover the following subjects:

- Impacts associated with illicit discharges;
- Proper disposal and management of wastes;
- Proper maintenance of indoor and outdoor working areas including parking lot surfaces;
- Spill response; and
- Inspections training.

Appendix A

Site Maps

Appendix B

BMPs Specifications and Detail Sheets

BMP: Area Control Procedures

ACP

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Description:

Area control procedures involve practicing good housekeeping measures such as maintaining indoor or covered material storage and industrial processing areas. If the area is kept clean, the risk of accumulating materials on footwear and clothing is reduced. In turn, the chance of left over pollutants making contact with stormwater polluting surface water is minimized.

Approach:

Area control procedures can be used at any facility where materials may be tracked into areas where they can come in contact with stormwater runoff. Areas can include material handling areas, storage areas, or process areas.

Effective practices include the following:

- Cover garments, foot mats, and other devices used to collect residual material near the area should be cleaned regularly.
- Brush off clothing before leaving the area.
- Stomp feet to remove material before leaving the area.
- Use floor mats at area exits.
- Use coveralls, smocks, and other overgarments in areas where exposure to material is of greatest concern (employees should remove the overgarments before leaving the area).
- Post signs to remind employees about these practices.

Limitations:

May be seen as tedious by employees and therefore may not be followed.

Maintenance:

Materials storage areas and industrial processing areas should be checked regularly to ensure that good housekeeping measures are implemented.

Targeted Pollutants

■ High Impact
• Medium Impact
• Low or Unknown Impact

■ Sediment
• Heavy Metals
• Toxic Materials
• Oxygen Demanding Substances
• Oil & Grease
• Floatable Materials
• Bacteria & Viruses

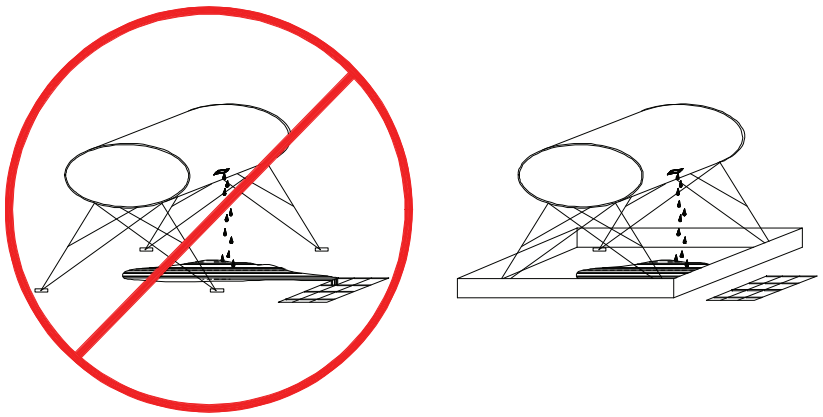
Implementation Requirements

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Aboveground Tank Leak And Spill Control

ATL



Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Description:

Prevent or reduce the discharge of pollutants to stormwater from aboveground storage tanks by installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

The most common causes of unintentional releases are:

- Installation problems,
- Failure of piping systems (pipes, pumps, couplings, hoses, and valves),
- External corrosion and structural failure,
- Spills and overfills due to operator error, and
- Leaks during pumping of liquids or gases from truck to a storage tank or vice versa.

Approach:

- Integrate efforts with existing aboveground petroleum storage tank programs through the local Fire Department and Health Department, and area and business emergency response plans through the City, County, or Fire District.
- Use engineering safeguards to reduce the chance for spills.
- Perform regular maintenance.

Limitations:

For larger spills, a private spill clean-up company or Hazmat team may be necessary.

Maintenance:

Maintenance is critical to preventing leaks and spills. Conduct routine weekly inspections and:

- Check for external corrosion and structural failure,
- Check for spills and overfills due to operator error,
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves),
- Check for leaks or spills during pumping of liquids or gases from truck to storage facility or vice versa.
- Periodically, integrity testing should be conducted by a qualified professional.

Targeted Pollutants

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Heavy Metals
■ Toxic Materials
- Oxygen Demanding Substances
■ Oil & Grease
- Floatable Materials
- Bacteria & Viruses

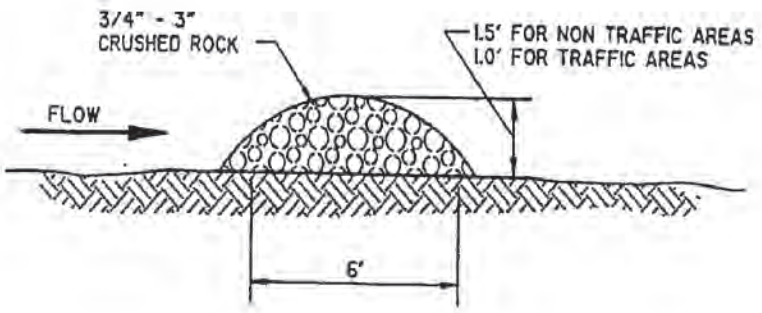
Implementation Requirements

- Capital Costs
- O&M Costs
- Maintenance
■ Training

■ High • Medium • Low

BMP: Brush or Rock Filter

BRF



Description:

A rock filter is made of rock 3/4 - 3" in diameter and placed along a level contour. A brush filter is composed of brush (usually obtained during the site clearing) wrapped in filter cloth and anchored to the toe of the slope. If properly anchored brush or rock filters may be used for sediment trapping and velocity reduction.

Application:

- As check dams across mildly sloped construction roads.
- Below the toe of slopes.
- Along the site perimeter.
- In areas where sheet or rill flow occurs.
- Around temporary spoil areas.
- At sediment traps or culvert/pipe outlets.

Installation/Application Criteria:

- For rock filter, use larger rock and place in a staked, woven wire sheathing if placed where concentrated flows occur.
- Install along a level contour.
- Leave area behind berm where runoff can pond and sediment can settle.
- Drainage areas should not exceed 5 acres.

Limitations:

- Rock berms may be difficult to remove.
- Removal problems limit their usefulness in landscaped areas.
- Runoff will pond upstream of the filter, possibly causing flooding if sufficient space does not exist.

Maintenance:

- Inspect monthly after each rainfall.
- If berm is damaged, reshape and replace lost/dislodged rock.
- Remove sediment when depth reaches 1/3 of berm height, or 1 ft.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

■ High Impact
• Medium Impact
• Low or Unknown Impact

■ **Sediment**
• Nutrients
• Toxic Materials
• Oil & Grease
• Floatable Materials
• Other Waste

Implementation Requirements

■ Capital Costs
• O&M Costs
• Maintenance
• Training

■ High • Medium • Low

BMP: Building And Grounds Maintenance

BGM

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Description:

Prevent or reduce the discharge of pollutants to stormwater from buildings and grounds maintenance by washing and cleaning up with as little water as possible, preventing and maintaining the stormwater collection system.

Buildings and grounds maintenance includes taking care of landscaped areas around the facility, cleaning of parking lots and pavement other than in the area of industrial activity, and the cleaning of the storm drainage system.

Approach:

- Preserve existing native vegetation to reduce water, fertilizer, and pesticide needs.
- Carefully use pesticides and fertilizers in landscaping.
- Integrate pest management where appropriate.
- Sweep paved surfaces.
- Clean the storm drainage system at appropriated intervals.
- Properly dispose of wash water, sweepings, and sediments.

Limitations:

Alternative pest/weed controls may not be available, suitable or effective in every case.

Maintenance:

The BMPs themselves relate to maintenance and do not require maintenance as they do not involve structures.

Targeted Pollutants

■ High Impact
• Low or Unknown Impact
• Medium Impact

■ Sediment
■ Nutrients
■ Heavy Metals
■ Toxic Materials
■ Oxygen Demanding Substances
■ Oil & Grease
■ Floatable Materials
• Bacteria & Viruses

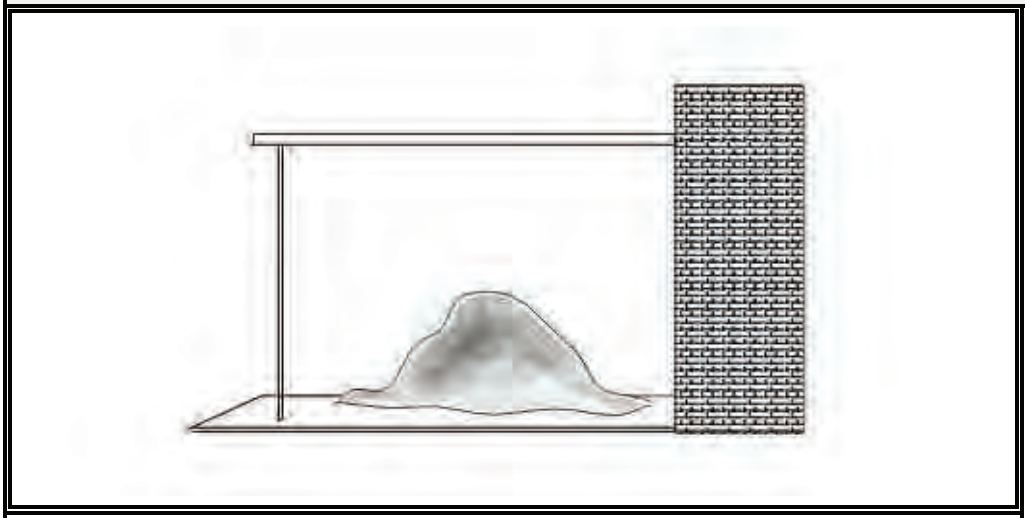
Implementation Requirements

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Covering

CO



Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Description:

Covering is the partial or total physical enclosure of materials, equipment, process operations, or activities. Covering certain areas or activities prevents stormwater from coming into contact with potential pollutants and reduces material loss from wind blowing. Tarpaulins, plastic sheeting, roofs, buildings, and other enclosures are examples of covering that are effective in preventing stormwater contamination. Covering can be temporary or permanent.

Approach:

- Covering is appropriate for outdoor material storage piles (e.g., stockpiles of dry materials, gravel, sand, compost, sawdust, wood chips, and de-icing salt) as well as areas where liquids and solids in containers are stored or transferred.
- While it may be too expensive to cover all industrial activities, cover all high-risk areas first (e.g., chemical preparation areas, vehicle maintenance areas, and areas where salts are stored), then according to budget cover the rest of the materials.
- Evaluate the strength and longevity of the covering, as well as its compatibility with the material or activity being enclosed.
- When designing an enclosure, consider access to materials, their handling, and transfer.
- Materials that pose environmental and safety dangers require special ventilation and temperature considerations.
- Covering alone may not protect the materials. When designing, consider placing materials on an elevated, impermeable surface or build curbing around the outside of the materials to prevent problems from runon of uncontaminated stormwater from adjacent areas.
- Anchor all coverings with stakes, tie-down ropes, large rocks, tires or other easily available heavy objects.

Limitations:

- Requires frequent inspection.
- May pose health or safety problems if enclosure is built over certain activities.

Maintenance:

- Frequently inspect coverings for rips, holes and general wear.

Targeted Pollutants

■ High Impact
• Medium Impact
• Low or Unknown Impact

■ Sediment
• Nutrients
■ Heavy Metals
■ Toxic Materials
• Oxygen Demanding Substances
• Oil & Grease
• Floatable Materials
• Bacteria & Viruses

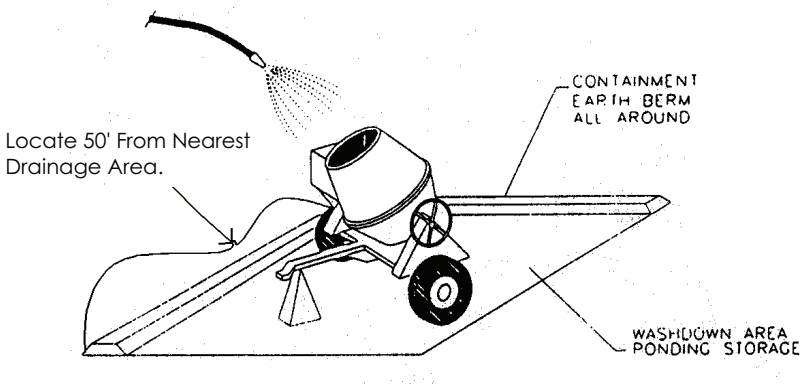
Implementation Requirements

■ Capital Costs
• O&M Costs
• Maintenance
• Training

■ High • Medium • Low

BMP: Concrete Waste Management

CWM



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

APPLICATIONS:

This technique is applicable to all types of sites.

INSTALLATION/APPLICATION CRITERIA:

- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off-site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area. (See Earth Berm Barrier information sheet.)
- Train employees and subcontractors in proper concrete waste management.

LIMITATIONS:

- Off-site washout of concrete wastes may not always be possible.

MAINTENANCE:

- Inspect subcontractors to ensure that concrete wastes are being properly managed.
- If using a temporary pit, dispose hardened concrete on a regular basis.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

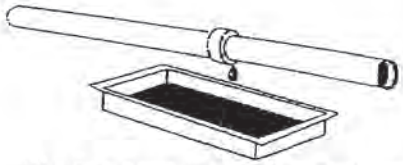
IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

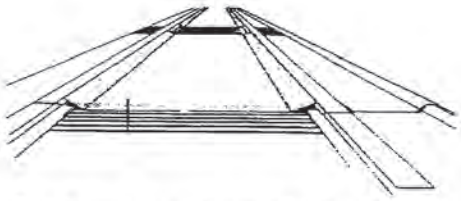
■ High • Medium • Low

BMP: Drip Pans

DP



Use Drip Pans for Leaking Equipment



Use Drip Pans in Loading and Unloading Areas

DESCRIPTION:

Drip pans are small depressions or pans used to contain very small volumes of leaks, drips, and spills that occur at a facility. Drip pans can be depressions in concrete, asphalt, or other impenetrable material. They can be made of metal, plastic, or any material that does not react with the dripped chemicals. Drip pans can be temporary or permanent.

Drip pans are used to catch drips from valves, pipes, etc. so that the materials or chemicals can be cleaned up easily or recycled before they contaminate stormwater. Although leaks and drips should be repaired and eliminated as part of a preventative maintenance program, drip pans can provide a temporary solution where repair or replacement must be delayed. In addition, drip pans can be an added safeguard when they are positioned beneath areas where leaks and drips may occur.

APPROACH:

- When using drip pans, consider the location of the drip pan, weather conditions, the type of material used for the drip pan, and how it will be cleaned.
- The location of the drip pan is important. Because drip pans must be inspected and cleaned frequently, they must be easy to reach and remove. However, take special care to avoid placing drip pans where they can be easily overturned or be a safety hazard.
- Secure pans by installing or anchoring them. Drip pans may be placed on platforms, behind wind blocks or tied down.
- Employees must pay attention to the pans and empty them when they are nearly full.
- Frequent inspection of the drip pans is necessary due to the possibility of leaks in the pan itself or in piping or valves that may occur randomly or irregular slow drips that may increase in volume.

LIMITATIONS:

- Contain small volumes only.
- Must be inspected and cleaned frequently.
- Must be secured during poor weather conditions.
- Contents may be disposed of improperly unless facility personnel are trained in proper disposal methods.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Heavy Metals
■ Toxic Materials
- Oxygen Demanding Substances
■ Oil & Grease
- Floatable Materials
- Bacteria & Viruses

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
■ Maintenance
- Training

■ High • Medium • Low

BMP: Employee Training

ET

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges

DESCRIPTION:

Employee training, like equipment maintenance, is a method by which to implement BMPs. Employee training should be used in conjunction with all other BMPs as part of the facility's SWPPP.

The specific employee training aspects of each of the source controls are highlighted in the individual information sheets. The focus of this information sheet is more general, and includes the overall objectives and approach for assuring employee training in stormwater pollution prevention. Accordingly, the organization of this information sheet differs somewhat from the other information sheets in this chapter.

OBJECTIVES:

Employee training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute stormwater;
- Identify solutions (BMPs);
- Promote employee ownership of the problems and the solutions; and
- Integrate employee feedback into training and BMP implementation.

APPROACH:

- Integrate training regarding stormwater quality management with existing training programs that may be required for other regulations.
- Employee training is a vital component of many of the individual source control BMPs included in this manual.

TARGETED POLLUTANTS

- ■ High Impact
- • Medium Impact
- • Low or Unknown Impact

- ■ Sediment
- ■ Nutrients
- ■ Heavy Metals
- ■ Toxic Materials
- ■ Oxygen Demanding Substances
- ■ Oil & Grease
- ■ Floatable Materials
- ■ Bacteria & Viruses

IMPLEMENTATION REQUIREMENTS

- • Capital Costs
- • O&M Costs
- • Regulatory
- ■ Training
- • Staffing
- • Administrative

■ High • Medium • Low

BMP: Housekeeping Practices

HP

DESCRIPTION:

Promote efficient and safe housekeeping practices (storage, use, and cleanup) when handling potentially harmful materials such as fertilizers, pesticides, cleaning solutions, paint products, automotive products, and swimming pool chemicals.

APPROACH:

- Pattern a new program after the many established programs from municipalities around the country. Integrate this best management practice as much as possible with existing programs at your municipality.
- This BMP has two key audiences: municipal employees and the general public.
- For the general public, municipalities should establish a public education program that provides information on such items as storm water pollution and beneficial effects of proper disposal on water quality; reading product labels; safer alternative products; safe storage, handling, and disposal of hazardous products; list of local agencies; and emergency phone numbers. The programs listed below have provided this information through brochures or booklets that are available at a variety of locations including municipal offices, household hazardous waste collection events or facilities, and public information fairs.

Municipal facilities should develop controls on the application of pesticides, herbicides, and fertilizers in public right-of-ways and at municipal facilities. Controls may include:

- List of approved pesticides and selected uses.
- Product and application information for users.
- Equipment use and maintenance procedures.
- Record keeping and public notice procedures.

LIMITATIONS:

There are no major limitations to this best management practice.

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges

CARTERVILLE MISSOURI U.S. 66 MAIN STREET OF AMERICA

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

■ Sediment
■ Nutrients
• Heavy Metals
■ Toxic Materials
■ Oxygen Demanding Substances
■ Oil & Grease
• Floatable Materials
• Bacteria & Viruses

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
■ Training
- Staffing
- Administrative

■ High • Medium • Low

BMP: Hazardous Waste Management

HWM

Description:

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste throughproper material use,waste disposal,and training of employees and subcontractors.

Application:

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and Solvents; petroluem products sucha s oils, fuels, and grease; herbicides and pesticides; Acids for cleaning masonry; and concrete curing compounds.

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations, including:

- Sandblasting grit mixed with lead, cadmium, or chromium-based paints; Asbestos; and PCB's.

Installation/Application Criteria:

The following steps will help reduce storm water pollution from hazardous wastes:

- Use all of the product before disposing of the container.
- Do not remove the original product label, it contains important safety and disposal information.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.

Limitations:

Hazardous wastethat cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

Maintenance:

- Inspect hazardous waste receptacles and area regularly.
- Arrange for regular hazardous waste collection.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

Targeted Pollutants

- ■ High Impact
- • Medium Impact
- • Low or Unknown Impact

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

Implementation Requirements

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Illegal Dumping Controls

IDC

DESCRIPTION:

Implement measures to detect, correct, and enforce against illegal dumping of pollutants on streets, into the storm drain system, and into creeks. Substances illegally dumped on streets, into the storm drain system, and into creeks includes paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes can cause storm water and receiving water quality problems as well as clog the storm drain system.

APPROACH:

One of the keys to success is increasing the general public's awareness of the problem and to at least identify the incident, if not correct it. There are a number of ways of accomplishing this:

- Train municipal staff from all departments to recognize and report incidents.
- Deputize municipal staff who may come into contact with illegal dumping with the authority to write illegal dumping tickets for offenders caught in the act.
- Educate the public.
- Provide the public with a mechanism for reporting such as a hot line.

Establish system for tracking incidents which will identify:

- Illegal dumping "hot spots",
- Types and quantities (in some cases) of wastes,
- Patterns in time of occurrence (time of day/night, month, or year),
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accident/spills), and
- Responsible parties.

A tracking system also helps manage the program by indicating trends, and identifying who, what, when, and where efforts should be concentrated.

LIMITATIONS

The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal.

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges

CARTERVILLE MISSOURI U.S. 66 MAIN STREET OF AMERICA

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Heavy Metals
- ■ Toxic Materials
- ■ Oxygen Demanding Substances
- ■ Oil & Grease
- ■ Floatable Materials
- Bacteria & Viruses

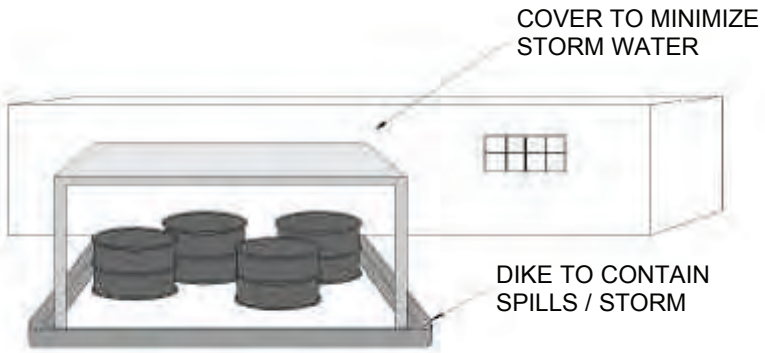
IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- ■ Training
- Staffing
- Administrative

■ High • Medium • Low

BMP: Outdoor Container Storage of Liquids

OCSL



APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION:

Prevent or reduce the discharge of pollutants to stormwater from outdoor container storage areas by installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

APPROACH:

Protect materials from rainfall, runon, runoff, and wind dispersal:

- Store materials indoors.
- Cover the storage area with roof.
- Minimize stormwater runon by enclosing the area or building a berm around it.
- Use a "doghouse" for storage of liquid containers.
- Use covered dumpsters for waste product containers.

Storage of oil and hazardous materials must meet specific federal and state standards including:

- secondary containment,
- integrity and leak detection monitoring, and
- emergency preparedness plans.

Train operator on proper storage.

Safeguards against accidental releases:

- Overflow protection devices to warn operator or automatic shut down transfer pumps, protection guards (bollards) around tanks and piping to prevent vehicle or forklift damage, clear tagging or labeling, and restricting access to valves to reduce human error.

Berm or surround tank or container with secondary containment system:

- Dikes, liners, vaults, or double walled tanks.

Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

LIMITATIONS:

Storage sheds often must meet building and fire code requirements.

MAINTENANCE:

Conduct routine weekly inspections.

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- ■ Heavy Metals
- ■ Toxic Materials
- ■ Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Spill Clean-Up

SCU

DESCRIPTION:
Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

APPLICATION:
All sites

GENERAL:
- Store controlled materials within a storage area.
- Educate personnel on prevention and clean-up techniques.
- Designate an Emergency Coordinator responsible for employing preventative practices and for providing spill response.
- Maintain a supply of clean-up equipment on-site and post a list of local response agencies with phone numbers.

METHODS:
- Clean-up spills/leaks immediately and remediate cause.
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL.
- Use rags or absorbent material for clean-up. Excavate contaminated soils. Dispose of clean-up material and soil as hazardous waste.
- Document all spills with date, location, substance, volume, actions taken and other pertinent data.
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity.

OBJECTIVES
- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

CARTERVILLE MISSOURI U.S. 66 MAIN STREET OF AMERICA

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
■ Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS
- Capital Costs
- O&M Costs
- Maintenance
■ Training

■ High • Medium • Low

BMP: Signs and Labels

SL

Applications

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

Description:

Signs and labels identify problem areas or hazardous materials at a facility. Warning signs, often found at industrial facilities, are a good way to suggest caution in certain areas. Signs and labels can also provide instructions on the use of materials and equipment. Labeling is a good way to organize large amounts of materials, pipes, and equipment, particularly on large sites.

Approach:

Signs and labels can be used at all types of facilities. Areas where they are particularly useful are material transfer areas, equipment areas, loading and unloading areas, or anywhere information might prevent contaminants from being released to stormwater.

Signs and labels should be visible and easy to read. Useful signs and labels might provide the following information:

- Names of facility and regulatory personnel, including emergency phone numbers, to contact in case of an accidental discharge, spill, or other emergency.
- Proper uses of equipment that could cause release of stormwater contaminants.
- Types of chemicals used in high-risk areas.
- The direction of drainage lines/ditches and their destination (treatment or discharge).
- Information on a specific material.
- Refer to OSHA standards for sizes and numbers of signs required for hazardous material labeling.

Limitations:

No limitations.

Maintenance:

- Periodic checks can ensure that signs are still in place and labels are properly attached.
- Signs and labels should be replaced and repaired as often as necessary.

Targeted Pollutants

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
■ Heavy Metals
■ Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

Implementation Requirements

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Sorbents

SO

DESCRIPTION:

Sorbents are materials that are capable of cleaning up spills through the chemical processes of adsorption and absorption. Sorbents adsorb (an attraction to the outer surface of a material) or absorb (taken in by the material like a sponge) only when they come in contact with the sorbent materials.

Sorbents include, but are not limited to, the following:

- Common materials such as clays, sawdust, straw and fly ash
- Polymers - polyurethane and polyolefin
- Activated Carbon - powdered or granular
- "Universal Sorbent Material" - a silicate glass foam consisting of rounded particles that can absorb the material.

APPLICATION:

Sorbents are useful BMPs for facilities with liquid materials onsite.

INSTALLATION/APPLICATION CRITERIA:

- Personnel should know the properties of the spilled material(s) to know which sorbent is appropriate. To be effective, sorbents must adsorb the material spilled but must not react with the spilled material to form hazardous or toxic substances.
- Apply immediately to the release area.
- Application is generally simple: the sorbent is added to the area of release, mixed well, and allowed to adsorb or absorb.
- Many sorbents are not reusable once they have been used.
- Proper disposal is required.

LIMITATIONS:

- Requires a knowledge of the chemical makeup of a spill (to choose the best sorbent).
- May be an expensive practice for large spills.
- May create disposal problems and increase disposal costs by creating a solid waste and potentially a hazardous waste.

MAINTENANCE:

No information available.

CONSIDERATIONS

- Soils
- Area Required
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Heavy Metals
■ Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

BMP: Vehicle And Equipment Cleaning

VEC

DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated, contained areas only, eliminating discharges to the storm drain by infiltrating or recycling the wash water, and/or training employees and subcontractors.

INSTALLATION/APPLICATION:

- Use off-site commercial washing businesses as much as possible. Washing vehicles and equipment outdoors or in areas where wash water flows onto paved surfaces or into drainage pathways can pollute storm water. If you wash a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site.
- If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies. The wash area can be sloped for wash water collection and subsequent infiltration into the ground.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area. Educate employees and subcontractors on pollution prevention measures. Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.

LIMITATIONS:

- Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance.

MAINTENANCE:

- Minimal, some berm repair may be necessary.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

TARGETED POLLUTANTS

■ High Impact
• Medium Impact
• Low or Unknown Impact

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High • Medium • Low

Standard Operating Procedures

Cleaning Chemicals

- All cleaning chemicals are to be mixed in accordance to manufacturer's directions.
- All cleaning chemicals are to be mixed in an area with adequate ventilation and an area that has a drain that connects to the sanitary sewer.
- If no connection to a sanitary sewer is available, cleaning chemicals are to be mixed on grass or other landscaped area.
- All appropriate PPE shall be work when mixing cleaning chemicals.
- Any spills will be immediately contained with absorbent materials. Absorbent materials will be disposed if in a proper waste container.
- Excess mixed materials will be stored in a properly marked and appropriate container, and in a closed cabinet or storage space. Excess materials should be consumed as soon as possible through appropriate cleaning activities.

Standard Operating Procedures

Street Sweeping and Waste Materials

- Sweeper should be routinly inspected to detect hydraulic, oil, and fuels leaks prior to deploying equipment on city streets.
- Sweeper wash tank should only be filled with water and never soaps or solvents. This may damage the tank, sprayers, and contaminate storm drains.
- Immediately following all sweeping operations, waste bins should be emptied at the designated dumpster located at public works.
- Excess waste which will not fit in the designated dumpster may be placed next to the dumpster, however it must be tarped immediately and placed in the dumpster once room is available.

Standard Operating Procedures

Equipment Maintenance and Cleaning

- Equipment will be kept in good operating and clean conditions.
- Mowing, trimming, edging equipment will be cleaned using high pressure air or manual devices when possible. Debris from such cleaning will be swept and disposed of in proper waste container.
- Mowing, trimming, or edging equipment may be hosed of on grass areas as long as no detergents or solvents are used in the process. All debris from such cleaning must remain on grass or be deposited into a proper waste container.
- All other cleaning will take place in a specified and approved equipment cleaning wash bay.
- Equipment should be kept free from leaks of any sort. All leaks will be caught in a catch pan or have absorbent materials applied. Caught items will be properly disposed of at a materials reclamation area. Absorbent materials will be disposed of in a proper waste container.

Standard Operating Procedures

Fertilizers

- City will order and consume fertilizer as needed. Generally fertilizer will not be stored.
- If fertilizer is stored, it will be inside of a building.
- Fertilizer will be applied once or twice annually as needed.
- All fertilizer applications will be supervised by a Certified Pesticide Applicator.
- Fertilizer will be applied in accordance to manufacturer's instructions.
- Fertilizer will be transported to site in bags.
- Fertilizer spreaders will be filled at the site where the use is intended.
- Bags will be opened individually and dumped into spreader.
- Any spilled fertilizer will be swept and returned to spreader or spread on grass.
- Fertilizer that lands on hard surfaces will be swept or blown back onto grass.
- Fertilizer bags will be disposed of in a proper waste container.
- Any errant fertilizer found in vehicle will be swept and spread on grass.

Standard Operating Procedures

Lawn Mowing and/or trimming

- Mowing/trimming operations will occur weekly, twice weekly, or as necessary at each location.
- All mowing/trimming equipment will be properly fueled at a proper fueling location. Any spilled fuels will have absorbent materials applied to absorb them. Absorbent materials will be disposed of in a proper trash container.
- Mowers will have mulching type decks that are kept in good repair with all guards and deflectors in place.
- Trimmers will have all deflectors in place and in good repair.
- All materials resulting from mowing/trimming operations should remain on grass.
- Trimmings that are found on hard surfaces will be blown or swept back on to the grass.
- Trimmings that cannot be swept or blown back on to grass will be swept and deposited into appropriate waste container.

Standard Operating Procedures

Sidewalks, Parking Lots, and Trails in and around Parks and Public Facilities.

- Parking lots will be swept by Public Works annually or as needed.
- Trails and sidewalks will be kept free of debris as necessary.
- Trails and sidewalks will be blown off as needed. Debris will be blown onto grass or planted areas.
- Curbs and gutters around parking lots will be blown out or swept as needed. Debris will be blown onto grass or planted areas when possible. When not possible, debris will be collected and deposited into proper waste container.
- Weekly visual inspections and repaired problems will be logged on the appropriate reports located on the appendices section of this manual.

Standard Operating Procedures

Pavilion Cleaning and Maintenance

- Pavilions will be cleaned as necessary to accommodate reservations or to maintain minimum acceptable standards.
- Pavilions may be blown off. All trash and debris shall be collected and deposited into an appropriate waste container.
- Pavilions may also be hosed or pressure washed. All water resulting from such activities must go onto landscaped areas. No such water may enter the storm drain.
- Any debris resulting from hosing or pressure washing shall be collected and deposited into an acceptable trash container.

Standard Operating Procedures

Pesticides

- Pesticides will be purchased and consumed as needed. Minimal pesticides will be stored.
- Stored pesticides will be kept in a separate cabinet with doors.
- Pesticide applications will be supervised by a Certified Pesticide Applicator.
- Pesticide will be mixed and applied according to manufacturer's directions.
- Pesticides will be applied as needed when weather conditions allow.
- Appropriate PPE will be worn when mixing and applying pesticides.
- Pesticides will be mixed in an area and manner to avoid spillage.
- If a spill occurs, absorbent materials will be applied to spill. Absorbent materials will be disposed of in appropriate waste container.
- Empty pesticide containers will be disposed of in appropriate waste containers.
- Pesticide sprayers will be secured in vehicles when transported.
- All mixed pesticides will be applied to plants or other appropriate locations. Surplus materials may not be deposited into storm drain or sanitary sewer.

Standard Operating Procedures

Fuel Storage

- Gas and/or deisel fuels will be properly stored only in containers designed for such use.
- Bulk fuel storage will be stored in the elevated tank located at public works.
- Periodic checks should be performed to ensure tank and fittings are in optimum condition and that no leaks are present.
- Bulk storage tanks will be housed withing a secondary containment to catch any leaks or spillage when dispensing.
- Periodic checks should be made to determine if rain water needs to be drained from the secondary containment and may be done so by draining the unit using the removable plug.
- Fueling areas and secondary containment should be observed for issue after rain events to prevent overflow.
- If odor or visual inspection indicates the possibility of cantaminated water in the secondary containment tank, water must be removed and stored in a designate drum for later removal.
- At a minimum, fuel tanks and secondary containments must be thoroughly inspected for damage, rust, and other signs of wear.

Standard Operating Procedures

Restroom Maintenance

- All restrooms will be cleaned in accordance to minimum acceptable standards.
- Restroom floors will be swept. Swept materials will be collected and disposed of in a proper waste container.
- Restroom floors and walls may be hosed. All water from such activities must drain into the sanitary sewer, or onto landscaped areas. No such water may enter the storm drain.
- Restroom floors will be mopped. All water from such activities will be put into the sanitary sewer or dumped onto landscaped areas. No such water shall be allowed to enter the storm drain.
- All cleaning chemicals shall be used in accordance to manufacturer's specifications.
- Cleaning chemicals shall be mixed in accordance to SOP for cleaning chemicals.

Standard Operating Procedures

Snow Melt/ Road Salt storage and use

- All snow melt materials will be kept in bags and stored in a storage building until they are consumed.
- Road salts will be stored in a tarped, 3-sided storage bin located at public works. Road salts will be stored in a manner to be protected from storms and to allow minimal dissolving of salts.
- Snow melt and road salt materials will be loaded into spreading devices as needed and as can be consumed. Materials will not remain in spreading devices if unused. Unused road salts will be returned to stockpile.
- Snow melt and road salts will be applied to parking lots and walkways as needed using minimal necessary materials. Materials may be reapplied only as needed for public safety.
- Any spillage of snow melt material or road salts will be returned to the spreading device and applied to appropriate areas. Spilled materials may also be swept and deposited in appropriate waste container.
- Snow melt or road salts that are not dissolved will be blown or swept of parking lots or walkways as needed. Removed materials will either be blown to landscaped areas or collected and deposited in an appropriate waste container.

Standard Operating Procedures

Snow and Ice Removal

- Snow and ice will be removed as necessary
- Snow and ice will be removed from parking lots, walkways, and trails with necessary trucks, small equipment, snow blowers, shovels, or other necessary devices.
- Snow will be piled at the edges or parking lots, roads, walkways, or other areas as room allows.
- When possible, snow can be piled onto grass or other planted areas.
- Road salt and/or ice melting materials will be used moderately as necessary.
- Road salt and/or ice melting materials that are not consumed or dissolved within a reasonable amount of time will be swept or blown onto grass or other planted area.

Appendix C

Training Log

Employee Training Log

Training Date: _____

Training Description: _____

Trainer: _____

Employee Name	Employee Signature

Appendix D

Spill Reports

NON-STORM WATER DISCHARGE INSPECTION REPORT

Date of Spill:	Time:
Location:	
Date of Investigation:	Time:
Method of Discovery:	

REGUALTORY AGENCIES NOTIFICATION (document: date, time, person, agency)

Carterville City:

Missouri County Health Department:

State Environmental services:

Other:

Description and Quantity of Material Spilled:

☐ Gasoline ☐ Diesel ☐ Oil ☐ Antifreeze ☐ Other: _____

☐ 1 to 5 Gallons ☐ 5 to 10 Gallons ☐ 10 to 25 Gallons ☐ More than 25 Gallons

Source:

Cause:

Adverse environmental impact (if any):

Any Discharge to Storm Drain and or waters of the U.S.? ☐ Yes ☐ No ☐ Do not know

Immediate remedial actions taken at time of spill:

☐ Spill Containment ☐ Sweeping ☐ Absorbent Material ☐ Removal from site

☐ Other: _____

Method of removal and verification:

Additional comments:

Analytical Monitoring:

Enforcement Action:

Report prepared by: Signature Date

Appendix E

Corrective Action Log

Corrective Action Log

Date Completed	Describe the actions taken and note the person(s) that completed the work

Appendix F

Comprehensive Inspections

Stormwater Runoff Control
Inspection Checklist

Instructions: Conduct an inspection of applicable municipal facilities (vehicle maintenance, outdoor storage yards, asphalt and concrete storage, and solid waste collections **annually and save the inspection record.** The "comments" column should either provide the action needed to be taken, or an explanation of why the answer is no.

Facility: _____ Conducted By: _____

Address:_____ Date: ___/____/____

City:_____ Phone: (____) _____

Municipal Yard	Yes	No	Comments
1. Outdoor Storage:			
• Do >55-gallon drums, bulk storage tanks (i.e. gas/diesel), or other containers that are stored outside have adequate secondary containment and cover?	☐	☐	*Any bulk liquid storage > 55 gallons must have secondary containment or equivalent.*
• Are outside storage areas controlled, covered, and contained? (i.e. batteries, chemicals, stockpiles)	☐	☐	*Batteries should be stored inside or under cover.* *Stockpiles should be contained in barriers and/or covered.*
• If there water or liquid in the secondary containment structures, is it being managed appropriately?	☐	☐	*Sweeper/Vac truck waste should be stored so it does not runoff; either in a contained/bermed area that drains to sanitary sewer and/or in a dumpster for transport and disposal.*
2. Shop:			
• Is vehicle/equipment maintenance or repair work performed inside?	☐	☐	*No maintenance or repair work should be performed outside (fleets may perform outside emergency repairs and maintenance activities that do not involve fluids).*
• Are there spill kits located in the shop?	☐	☐	
3. Wash Area:			
• Are vehicles are washed in a designated washing area that is plumbed to sanitary sewer?	☐	☐	*Mowers and tractors (only) can be washed over a grassy area if only water is used (no soap).*
• Are mowers/tractors washed in a designated washing area?	☐	☐	Where are they washed? _____
4. Fueling Island:			
• Is there a spill kit with absorbents available?	☐	☐	*All dirty absorbent should be swept up daily.*
• Is the area free of spills?	☐	☐	
5. Salt & Sand:			
• Is the sand/salt mix covered and contained?	☐	☐	*Any bulk liquid storage must have secondary containment or equivalent.*
• Is the surrounding area free of excess material and stains?	☐	☐	
6. Wastewater Management:			
• Is the rinse water from pesticide sprayers being disposed of appropriately?	☐	☐	

Stormwater BMPs/Good Housekeeping	Yes	No	Comments
1. Are surfaces (parking lots, fueling area) free of spills, debris and trash?	☐	☐	
2. If pressure washing takes place is the water being diverted to landscaping or if soaps are used being used, is the wastewater being collected and sent to sanitary?	☐	☐	*No wastewater may reach storm drains.*
3. Are stormwater BMPs (inlets, catch basins, culverts, and detention basins) free of debris and cleaned regularly?	☐	☐	
4. Where is stormwater discharged off-site? Are these areas free from obvious pollutants and trash?	☐	☐	*Note these areas on the facility map as well as direction of flow.*
5. Are fertilizers being used and, if so, are they managed to limit exposure to stormwater?	☐	☐	
6. Is the dumpster area free from leaks and stains?	☐	☐	
7. Are dumpsters covered?	☐	☐	

Training/Reporting			
1. Has applicable staff been trained in stormwater pollution detection and prevention?	☐	☐	*Report to Stormwater Coordinator, if necessary.*
2. Have you been trained to perform annual inspections?	☐	☐	*Report to Stormwater Coordinator, if necessary.*
3. Are stormwater discharges reported to your municipality's Stormwater Coordinator? What is their name/phone number? _____	☐	☐	
4. All stormwater, non-stormwater, and water quality concerns have been either noted or addressed?	☐	☐	
Paperwork/Site Plan Map			
1. The facility site map is up-to-date with current pollutant sources and controls noted on the map?	☐	☐	*Report to Stormwater Coordinator, if necessary.*
2. This inspection report has been filed to meet the recordkeeping requirement of the MS4 permit?	☐	☐	*Report to Stormwater Coordinator, if necessary.*
3. Are SOPs reviewed and are they still accurate for current operations? Where are they stored?	☐	☐	*Report to Stormwater Coordinator, if necessary.* *SOP File Location:* _____

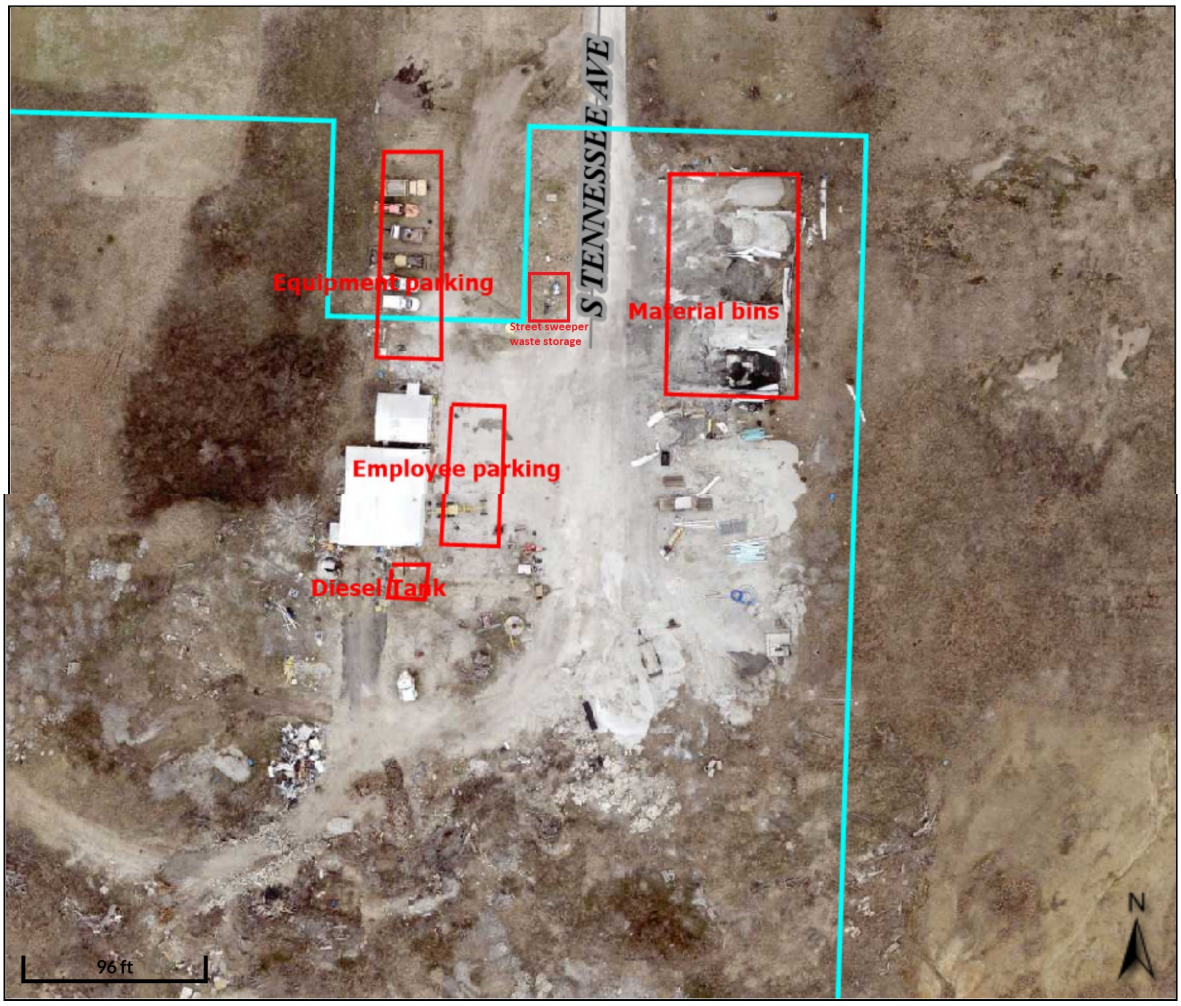
I certify that the above information is accurate and reflects current conditions.

Signature: _____ Date: _____

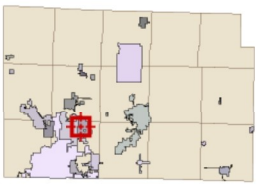
Printed Name: _____ Supervisor's Signature: _____

Printed Name: _____

Beacon™ Jasper County, MO



Overview



Legend

- County Boundary
- Local Roads

Parcel ID	15401740009011001	**Alternate ID**	14-961059-0000	**Owner Address**	CARTERVILLE CITY
Sec/Twp/Rng	17-28-32	**Class**	E		1200 E FIRST
Property Address	TENNESSEE	**Acreage**	26.49		CARTERVILLE, MO 64835
District	86				

Brief Tax Description CTV MISC NW SE EX N 12A & EX BEG SE COR LOT 103 S C M & S CO'S 5TH S 100' W 100' N 100' E TO POB
(Note: Not to be used on legal documents)

Date created: 11/6/2023
Last Data Uploaded: 11/6/2023 1:39:26 AM

Developed by Schneider GEOSPATIAL