STORMWATER MANAGEMENT PLAN

CITY OF

CARL JUNCTION, MISSOURI

MOR04C023

2021- 2026

PREPARED BY:
ALLGEIER, MARTIN AND ASSOCIATES, INC.

Stormwater Management Plan

City of Carl Junction, Missouri

October 2021-September 2026 Reporting Period

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Part 1 - Facility Information

1.A. GENERAL INFORMATION:

NPDES #:	**MOR04C023**
Facility Name:	Carl Junction Small MS4
Facility Mailing Address:	P.O. Box 447, Carl Junction, MO 64834
Owner's Name:	**City of Carl Junction, Missouri**
Owner's Physical Address:	303 N. Main Street, Carl Junction, MO 64834
Owner's Mailing Address:	P.O. Box 447, Carl Junction, MO 64834
Primary Contact:	**Steve Lawver, City Administrator** *
Phone Number:	(417) 649-7237
Email:	cjcityadm@carljunction.org
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):	5.55 sq. miles (3555 acres)

* 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 one permanently flowing stream (Class P), Center Creek.

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.

The permittee is within 100 feet of Center Creek. This section of Center Creek, Section MO_3203, is listed as Impaired on the 303(d) List for Cadmium. There are no Approved TMDLs and the MS4 has not been assigned to Wasteload Allocation (WLA). The source of the metals has been determined to be the Tristate Abandoned Mine Lands.

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

Stormwater from Carl Junction discharges to 3 sinkholes. See map.

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. 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 of Stormwater Outfalls is required under Minimum Control Measure 3. A simplified copy of the map is available in PDF format on the City's Stormwater website, https://carljunction.org/swppp/.

Outfall locations and descriptions can be found in the following table.

Carl Junction Stormwater Outfalls

Last updated Jan. 2021

Outfall No.	UTM Coordinates (m) Zone 15 Easting	Northing	Latitude (NAD83)	Longitude (NAD83)	Legal Description	Receiving Stream Name	Receiving Stream Classification	HUC-8	Sub-Water-shed	First Classified Stream		Outfall Type and Notes
1	359851.99 E	4116890.00 N	37.187950 °N	94.578961 °W	NW 1/4 NW 1/4 Sec 6 T 28N R 33W	Trib to Spring River	Unclassified	11070207	_0508	Trib To Spring River	C	Open conveyance immediately downstream of wet detention. For IDDE Inspections, also inspect upstream side of pond, where concrete channel enters pond.
2	360208.52 E	4115294.63 N	37.173628 °N	94.574647 °W	SE 1/4 SW 1/4 Sec 6 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance at north (upstream) side of Well Street roadway culvert.
3	360613.03 E	4114880.96 N	37.169961 °N	94.570015 °W	NW 1/4 NE 1/4 Sec 7 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance at City Limits, approx. 153' south (downstream) of Marshall Ave. culvert.
4	361476.47 E	4114456.31 N	37.166263 °N	94.560214 °W	SW 1/4 NW 1/4 Sec 8 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance coming into main ditch from east. Conveyance is very flat and drains the soggy areas to the east.
5	361401.86 E	4114934.14 N	37.170556 °N	94.561152 °W	NW 1/4 NW 1/4 Sec 8 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance coming into main ditch from west through field.
6	362508.01 E	4114834.03 N	37.169819 °N	94.548669 °W	NE 1/4 NE 1/4 Sec 8 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance at confluence with Center Creek. Stream passes through park.
7	362780.96 E	4114918.03 N	37.170616 °N	94.545611 °W	NW 1/4 NW 1/4 Sec 9 T 28N R 33W	Cooley Branch	C	11070207	_0608			Open conveyance along Cooley Branch, at confluence with Center Creek. Stream passes through park.
8	361947.24 E	4114091.23 N	37.163043 °N	94.554846 °W	NW 1/4 SE 1/4 Sec 8 T 28N R 33W	Briar Brook	C	11070207	_0608			Open conveyance along Briar Brook, at north (downstream) side of Briarbrook Drive.
9	362958.00 E	4114129.00 N	37.163533 °N	94.543465 °W	NW 1/4 SW 1/4 Sec 9 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance approximately 245' north (downstream) of rip rap side channel.
10	363320.02 E	4114408.98 N	37.166108 °N	94.539448 °W	SE 1/4 NW 1/4 Sec 9 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance between cul-de-sacs, approximately 155' downstream of Lakeview Lane.
11	364031.00 E	4113745.03 N	37.160229 °N	94.531322 °W	SE 1/4 SE 1/4 Sec 9 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance immediately downstream of Railroad culvert.
12	364231.32 E	4113719.05 N	37.160024 °N	94.529062 °W	SE 1/4 SE 1/4 Sec 9 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance downstream of Sunset Drive, as it enters Hwy 171 ditch.
13	365121.51 E	4114103.26 N	37.163615 °N	94.519109 °W	NE 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Oscie Ora Acres Lake	L3	Open conveyance immediately before it enters Oscie Ora Acres Lake
14	365737.03 E	4114176.98 N	37.164368 °N	94.512192 °W	NE 1/4 SE 1/4 Sec # T 28N R 33W	Trib to Center Creek	C	11070207	_0608			Open conveyance, immediately upstream of Old Hwy 43 culvert and downstream of pond outlet.
15	364207.98 E	4113196.95 N	37.155316 °N	94.529230 °W	NE 1/4 NE 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance, immediately east (downstream) of Railroad culvert.
16	364677.89 E	4112855.24 N	37.152305 °N	94.523878 °W	SE 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance at City Limits, behind granite shop.
17	364395.73 E	4112560.92 N	37.149612 °N	94.527001 °W	NW 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance, approx. 30' upstream of Railroad culvert.
18	364496.43 E	4111979.36 N	37.144383 °N	94.525767 °W	SW 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance, approx. 570' downstream of Van Hooser Blvd, just upstream of confluence with main stream that comes from pond outlet.
19	362519.04 E	4111961.43 N	37.143797 °N	94.548014 °W	SE 1/4 SE 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance. North road ditch at City Limits.
20	362450.07 E	4112221.59 N	37.146270 °N	94.548841 °W	SE 1/4 SE 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Detention Outlet
21	362273.64 E	4112737.96 N	37.150897 °N	94.550922 °W	NE 1/4 SE 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Stormwater system outlet into detention basin in Fox Briar subdivision.
22	362411.32 E	4113444.63 N	37.157285 °N	94.549502 °W	NE 1/4 NE 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance downstream of Ruby Road culvert
23	362348.74 E	4113490.49 N	37.157689 °N	94.550215 °W	NE 1/4 NE 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance. Concrete-lined chute coming off of Ruby Road cul-de-sac.

(continued on next page)

Carl Junction Stormwater Outfalls (continued)

Last updated Jan. 2021

Outfall No.	UTM Zone 15 Coordinates (m) Easting	Northing	Latitude (NAD83)	Longitude (NAD83)	Legal Description	Receiving Stream Name	Receiving Stream Classification	HUC-8	Sub-Water-shed	First Classified Stream		Outfall Type and Notes
24	362618.00 E	4113501.00 N	37.157830 °N	94.547175 °W	NE 1/4 NE 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Stormwater system pipe outlet.
25	362667.27 E	4113392.51 N	37.156853 °N	94.546611 °W	NE 1/4 NE 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance, immediately downstream of stormwater system pipe outlet.
26	362931.05 E	4113308.86 N	37.156138 °N	94.543626 °W	NW 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Pond exit. For IDDE Inspections, also inspect upstream side of pond, where channel enters pond.
27	362979.04 E	4113195.66 N	37.155125 °N	94.543065 °W	NW 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance at north (downstream) side of Thom Station Trail culvert.
28	362815.71 E	4113006.44 N	37.153396 °N	94.544869 °W	SW 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance at east (downstream) side of Thom Station Trail culvert.
29	362701.49 E	4112849.38 N	37.151964 °N	94.546126 °W	SW 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Stormwater system pipe outlet.
30	362696.84 E	4112449.17 N	37.148357 °N	94.546105 °W	NW 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Stormwater system pipe outlet.
31	362775.00 E	4112448.34 N	37.148361 °N	94.545225 °W	NW 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Lake outlet
32	362857.79 E	4112240.91 N	37.146504 °N	-94.544255 °W	SW 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance, downstream of W Briarbrook Lane culvert/pond outlet. For IDDE Inspections, also inspect upstream side of pond, where concrete channel enters pond.
33	363299.02 E	4112042.19 N	37.144778 °N	94.539252 °W	SE 1/4 SW 1/4 Sec # T 28N R 33W	Briar Brook	C	11070207	_0608			Open conveyance at south (upstream) side of W Briarbrook Lane roadway culvert.
34	363242.48 E	4112280.82 N	37.146920 °N	94.539932 °W	SE 1/4 SW 1/4 Sec # T 28N R 33W	Trib to Briar Brook	Unclassified	11070207	_0608	Briar Brook	C	Open conveyance, downstream of W Briarbrook lane, immediately before water enters pond
35	360979.71 E	4116148.59 N	37.181438 °N	94.566122 °W	SE 1/4 NE 1/4 Sec 6 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance at downstream side of culvert under old railroad bed, east of intersection of Cowgill St and Chestnut St.
36	361142.47 E	4115933.16 N	37.179521 °N	94.564249 °W	NE 1/4 SE 1/4 Sec 6 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Stormwater system pipe outlet at City Hall facility. Pipe outlet located in inline detention basin.
37	361186.84 E	4115732.11 N	37.177716 °N	94.563712 °W	NE 1/4 SE 1/4 Sec 6 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance, coming from west, immediately upstream of confluence with main stream. Approx.105' east (downstream) of culvert at Fire Dept. crossing.
38	361378.10 E	4115467.05 N	37.175356 °N	94.561509 °W	SW 1/4 SW 1/4 Sec 5 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance, coming from northeast, immediately upstream of confluence with main stream. Approx. 330' downstream of culvert under E 2nd St.
39	362826.90 E	4116204.14 N	37.182210 °N	94.545340 °W	SE 1/4 NE 1/4 Sec 5 T 28N R 33W	Trib to Cooley Branch	Unclassified	11070207	_0608	Cooley Branch	C	Open conveyance at City Limits, near upstream side of Karen Dr culvert. City IDDE program inspects 3 of the 4 open conveyances meeting here, coming from W, SW, & S.
40	362851.09 E	4115640.90 N	37.177140 °N	94.544954 °W	NW 1/4 SW 1/4 Sec 4 T 28N R 33W	Trib to Cooley Branch	Unclassified	11070207	_0608	Cooley Branch	C	Open conveyance, at treeline, approx. 140' east (downstream) of culvert under Karen Drive.
41	362466.13 E	4114809.42 N	37.169591 °N	94.549136 °W	NE 1/4 NE 1/4 Sec 8 T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Center Creek	P	Open conveyance downstream of Remington Circle, at confluence with Center Creek. Approx. 310' WSW of Outfall #6.
42	365638.99 E	4113933.07 N	37.162156 °N	94.513252 °W	NE 1/4 SE 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance in wooded area, approx. 85' north of end of Kellie Lane.
43	364690.54 E	4113189.41 N	37.155318 °N	94.523796 °W	NE 1/4 NW 1/4 Sec # T 28N R 33W	Trib to Center Creek	Unclassified	11070207	_0608	Trib to Center Creek	C	Open conveyance at City Limits. Located at west edge of power line corridor.
44	361268.19 E	4117374.91 N	37.192531 °N	94.563101 °W	NE 1/4 SW 1/4 Sec # T 29N R 33W	Trib to Spring River	C	11070207	_0508			Open conveyance at City Limits. Located at west edge of field.

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 Carl Junction has chosen to participate in the "Comprehensive" version of the MS4 permit (MO-RO4C000) for the October 2021-September 2026 permit cycle. Carl Junction is a traditional MS4 with a population of less than 10,000. According to the table below, Carl Junction 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; **Carl Junction 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

Carl Junction has implemented a public education and outreach program to distribute educational materials to the community and conduct outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

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

4.1.A Target Audience

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

The City of Carl Junction 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, Carl Junction 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.

Carl Junction has chosen target pollutants for the residential audience that will vary seasonally to coincide with the annual yard waste collection and recycling/household hazardous waste collection events. 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 Carl Junction, as part of Group A, must choose a minimum of two Outreach and Education BMPs from Table III of the MS4 General.

Carl Junction has chosen the following Outreach and Education BMPs:

❖ **Stormwater Information on the City Website**

- Continue the 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://carljunction.org/swppp/

❖ **Social Media Posts**

- Post Stormwater Information page on the City's Facebook page.
- Measurable Goals: Post a minimum of four (4) times a year. The messages will address ways attendees 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.
- Tracking and Adaptive Management: The number of views, impressions, and other interactions 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://www.facebook.com/cityofcarljunction

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

Carl Junction has chosen the following Involvement BMP:

❖ **Yard Waste Collection/Disposal**

- The City provides curbside yard waste collection each fall and maintains an area at the Public Works facility for the public to drop off yard waste during operating hours.
- Measurable Goals: Curbside pickup service will be provided annually. Drop-off service will be provided year-round, during Public Works facility operating days and hours.
- Tracking and Adaptive Management: Track the amount collected.
- Target Audience: Residents
- Target Pollutants: Grass clippings & leaf litter.
- Permit Years: 2021-2026

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

The City of Carl Junction provides the Yard Waste disposal BMPs 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?
2021			
2022			
2023			
2024			
2025			

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	Maintain the webpage with up-to-date information and working links. All links will be checked. Website will be maintained for the entire permit cycle.	Number of hits will be tracked.
Post Stormwater Information page on the City's Facebook page.	R	Include, but not limited to, grass clippings & leaf litter.	Throughout 2023	Quarterly (by season) during 2023	City Administrator	Post a minimum of four (4) times a year. The messages will address ways attendees 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 views, impressions, and other interactions will be tracked.
Involvement BMPs (min. 1)							
Yard Waste Curbside Collection	R	Grass Clippings & Leaf Litter	Annual Fall Curbside Collection	As needed	City Administrator	Curbside yard waste pickup service provided annually in the fall.	Track amount Collected
Yard Waste Disposal Site	R		Ongoing.	As needed	City Administrator	Yard Waste drop-off service provided year-round, during Public Works facility operating days and hours.	Track amount Collected
Other Items of Note							
Post link to 2021-2016 SWMP document on Public Notice page of City website	R	All pollutants addressed by SWMP	2022	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

Carl Junction 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

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

4.2.B 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 permit renewal application and related information was posted on the City's Stormwater website at https://carljunction.org/swppp/.

4.2.C Public Meeting

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

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

Dates of public notice:	Feb 1, 2021 – March 25, 2021
Dates of notice of meeting:	Feb 1, 2021 – March 16, 2021
Date of meeting:	March 8, 2021 & March 15, 2021
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 Steve Lawver, City Administrator, at City Hall (cjcityhall@carljunction.org). Comments are to be tracked electronically or on paper by Mr. Lawver.

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 Carl Junction 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.

An update will be given annually to the Board of Aldermen, after the 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)
2021:			
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?
2021			
2022			
2023			
2024			
2025			

Table MCM2. Public Involvement and Participation Program BMPs

Stormwater BMP	Target* Audience	Implemen-tation Date	Responsible Party	Measurable Goal	Tracking
Permit Renewal Process					
Provide Public Notice for Draft Permit Renewal Application and Associated Mapping	R	Feb-1-2021 to Mar-25-2021	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	Feb-1-2021	City Administrator	Items Posted for public viewing and comment	Complete
Provide Public Notice for Public Meeting about Stormwater Management Program	R	Feb-1-2021 to Mar-16-2021	City Administrator	30 days minimum Public Notice provided	Complete
Host Public Meeting about the Stormwater Management Program	R	Mar-8-2021 & Mar-15-2021	City Administrator	Host minimum of one public meeting to inform the public about the Stormwater Management Program and provide opportunities for community input.	Finished. Two meetings hosted at City Hall.
Provide Method for Public Comment. Record and address comments.	R	Feb-1-2021 to Mar-25-2021	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 Board of Aldermen	Board of Aldermen	Each Feb. or Mar., after completion of Stormwater Annual Report	City Administrator	Annual update to Board of Aldermen. Include status and progress of MS4 Stormwater Management Program.	One updated 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 Carl Junction 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.

Carl Junction maintains a storm sewer map that contains:

- the location of All MS4 Outfalls,
- the names and locations of all Waters of the State receiving discharges from the City's MS4 Outfalls, and
- the boundary of the regulated MS4 area (City Limits).

A simplified copy of the map is available in PDF format on the City's Stormwater website, https://carljunction.org/swppp/. More-detailed, electronic and paper copies are readily available for use by City field staff as needed.

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 Stormwater & 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 Carl Junction uses Chapter 425 Article III 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://ecode360.com/28835937/

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.)*

Carl Junction 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 2013. 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://carljunction.org/swppp/, by clicking on the link labeled "2013 IDDE Field Guide." A copy of the Inspection Field Sheet is included under 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)
2021:		
2022:		
2023:		
2024:		
2025:		

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 2013. 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://carljunction.org/swppp/, by clicking on the link labeled "2013 IDDE Field Guide." A copy of the Inspection Field Sheet is included under 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 2013. A digital copy of the IDDE Field Guide is available on the City's Stormwater website, https://carljunction.org/swppp/, by clicking on the link labeled "2013 IDDE Field Guide." A physical copy of the IDDE Field Guide is 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 425 Article III 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://ecode360.com/28835937/ .)

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.

	IDDE Inspection Priority Area(s)
2021:	
2022:	
2023:	
2024:	
2025:	

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 2013. A digital copy of the IDDE Field Guide is available on the City's Stormwater website, https://carljunction.org/swppp/, by clicking on the link labeled "2013 IDDE Field Guide."

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 Carl Junction 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 Joplin	Dan Johnson	417.624.0820 Ext. 538 DJohnson@joplinmo.org
Jasper County	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 425 Article III 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://ecode360.com/28835937/ .)

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 Carl Junction tracks all field screenings, spill, incidents, and investigations. Paper records are to be kept at City Hall 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.

4.3.P The City of Carl Junction 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 Carl Junction 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?
2021			
2022			
2023			
2024			
2025			

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	Are any updates needed? If so, have they been added?
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	Building Inspector	Inspect all 44 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	Building Inspector	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	2022	As needed	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

Carl Junction has implemented and enforces 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 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 Carl Junction uses Chapter 425 Articles I & II of 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. Articles I & II accomplish the following:

- Adopt the Stormwater Management Criteria manual;
- Lay out procedures for acquiring a Site Development Permit;
- Establish legal authority for the City to inspect permitted construction sites;
- Establish 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://ecode360.com/28835937/. A digital copy of the Stormwater Management Criteria manual is available on the City's Stormwater website, https://carljunction.org/swppp/.

4.4.B Pre-Construction Plan Review

The MS4 Operator shall review pre-construction plans.

The City of Carl Junction performs pre-construction plan review for developments covered under Chapter 425 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. (Copy of checklist included in 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 425 Articles I & II of Carl Junction City Code establish 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 include assessment of compliance with the City's Stormwater Regulations and other applicable ordinances.
3. The inspections evaluate any structure that functions to prevent pollution of, or remove pollutants from, stormwater. Inspectors use enforcement polices to require BMPs to be implemented and effective.
4. Final inspections (upon completion of the land disturbance and prior to final approval of construction project) 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 BMPs. Inspectors check on the self-inspections which are conducted by the construction site operator. Copies of the inspection sheets are included in MCM 4.

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 425 Articles I & II 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://ecode360.com/28835937/ .)

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 Chapter 425 of the Carl Junction 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 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 Carl Junction has a rainfall depth of 3.89 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 Carl Junction maintains an inventory of active public and private land disturbance sites covered under this permit. Inventory paperwork is kept 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 Carl Junction tracks oversight inspections (from 4.4.E) by retaining copies of records of inspection checklists. 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

4.4.I The City of Carl Junction 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 Carl Junction's City Hall for review by the public. Any citizen of Carl Junction may submit written comments relating to the plans. Written comments can be submitted in person or by mail, or email to Steve Lawver, City Administrator, at City Hall (cjcityhall@carljunction.org). Comments are to be tracked electronically or on paper by Mr. Lawver. 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 Carl Junction will provide 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 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.

4.4.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 and every 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

Enforcement procedures for construction site runoff problems are laid out in Chapter 425 Articles I & II 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://ecode360.com/28835937/ .)

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.*

Annual Review of MCM 4			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021			
2022			
2023			
2024			
2025			

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.	Completed
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.
Adopt Plan Review Checklist and Use for Future Construction Projects	4.4.B	2022	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.
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	Building Inspector	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.
Update Stormwater Inspection Sheet	4.4.C	2022	As needed	City Administrator	Update one Stormwater Inspection Sheet to meet new requirements of MS4 permit.	One Stormater Inspection Sheet updated. Add to SWMP.
Use Stormwater Inspection Checklist during Construction Site Inspections	4.4.C	On day of inspection	As needed	Building Inspector	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	Building Inspector	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	2022	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

Carl Junction continues to implement and enforce 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 accomplishes this goal through a stormwater management ordinance requiring any such development project to obtain a Site Development 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 Carl Junction uses Chapter 425 Articles I, II & IV of City Code 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. Articles I, II, & IV accomplish the following:

- Adopt the Stormwater Management Criteria Manual;
- Lay out procedures for acquiring a Site Development Permit;
- Require long-term maintenance of permanent BMPs.
- Establish legal authority for the City to inspect permitted construction sites and long-term, permanent BMPs;
- Establish 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://ecode360.com/28835937/. A digital copy of the Stormwater Management Criteria manual is available on the City's Stormwater website, https://carljunction.org/swppp/.

Additional regulations that apply to permanent stormwater controls can be found in the City's Zoning Regulations (Chapter 405, https://ecode360.com/28834660) and the Subdivision Regulations (Chapter 410, https://ecode360.com/28835139).

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 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, Zoning Regulations, and Subdivision Regulations contain guidelines and rules for non-structural stormwater controls. Through these mechanisms, 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 Carl Junction performs pre-construction plan review for developments covered under Chapter 425 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 under 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 Carl Junction uses Chapter 425 Articles I, & IV of City Code as the regulatory mechanism requiring appropriate long-term operation and maintenance of permanent BMPs. (This City Code can be found online at: https://ecode360.com/28835937/.)

Long-term O&M 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 Carl Junction has already implemented item 1 above and will be implementing items 2, 3, and 4 throughout this permit cycle. Annual inspections will primarily be completed by the City. Inspections checklists will be developed for each type of BMP. Completed inspection checklists will be kept as records of inspection.

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 Chapter 425 Article IV of City Code. (https://ecode360.com/28835937/) 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 sections 425.500-425.560 (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.

Section 425.500. Notification of Violation. [Ord. No. 13-32 §1, 7-16-2013]

A. Whenever the City of Carl Junction finds that a person has violated a prohibition or failed to meet a requirement of this Article, the City of Carl Junction 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.

B. 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.

Section 425.510. Appeal of Notice of Violation. [Ord. No. 13-32 §1, 7-16-2013]

Any person receiving a notice of violation may appeal the determination of the City of Carl Junction. 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.

Section 425.520. Enforcement Measures After Appeal. [Ord. No. 13-32 §1, 7-16-2013]

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 fifteen (15) 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 Carl Junction or designated agent or contractor to enter upon the premises for the purposes set forth above.

Section 425.530. Cost of Abatement of Violation. [Ord. No. 13-32 §1, 7-16-2013]

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.

Section 425.540. Injunctive Relief. [Ord. No. 13-32 §1, 7-16-2013]

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 Carl Junction 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.

Section 425.550. Violations Deemed Public Nuisance. [Ord. No. 13-32 §1, 7-16-2013]

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.

Section 425.560. Criminal Prosecution. [Ord. No. 13-32 §1, 7-16-2013]

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

Section 425.570. Remedies Not Exclusive. [Ord. No. 13-32 §1, 7-16-2013]

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 Carl Junction 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 sections 425.500-425.560 (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 Carl Junction will develop an inventory of BMPs within two years of permit issuance (by September 2023). 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 Carl Junction will track BMP inspections by keeping completed inspection checklists on file at City Hall. This will begin as the City implements the Post-Construction BMP Inspection Program from 4.5.E. Inspections will begin within two years of permit issuance (by September 2023) and then continued throughout the permit period.

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 Carl Junction will develop/implement the missing items from 4.5.E, 4.5.H, and 4.5.I above, within two years of permit issuance (by September 2023).

4.5.K The City of Carl Junction 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 Carl Junction will provide 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.)

Annual Review of MCM 5			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021			
2022			
2023			
2024			
2025			

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.	Completed
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.
Adopt Plan Review Checklist and Use for Future Construction Projects	4.5.C	2022	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	Building Inspector	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.
Long-Term Maintenance of Permanent Stormwater BMPs						
Develop and Maintain Inventory of Permanent Stormwater BMPs	4.5.H	Sept. 2023	At close of Construction	City Administrator	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?
Develop/Adopt Inspection Checklists for Each Type of Permanent BMP	4.5.C 4.5.I	Sept. 2023	As needed	City Administrator	Develop or adopt checklists for each type of Permanent Stormwater BMP.	Inspections sheets developed. Add to SWMP.
Initial Post-Construction Inspection by City	4.5.E 4.5.I	Fall 2023	As needed	Building Inspector	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	Fall 2023	Repeat Annually	Building Inspector	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	2022	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 Carl Junction has developed 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 Carl Junction will modify its current training program and schedule to meet the requirements of the new MS4 permit. 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 (Sept 2021-August 2026)
    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 Carl Junction is in the process of modifying its current training program and schedule to meet the requirements of the new MS4 permit. Training will be provided either in-person or by electronic methods. Training materials will be identified and then recorded for use again in the future. Coordination with other MCMs is shown in the updated Training Program Schedule above. Seasonally appropriate topics for employees may be covered through email or in-person training, as 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.

A list of all municipal operations and facilities that are impacted by the O&M program is included in Chapter 2 of the municipal O&M Manual. A digital copy of the O&M Manual is available on the City's Stormwater website, https://carljunction.org/swppp/, under the link labeled "OM Manual May 2013."

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 Carl Junction.

- Carl Junction Public Drinking Water system – MDNR MO-5010138
- Carl Junction Wastewater Treatment Facility – MDNR MO-0025186
- Public Works Facility (fleet maintenance) – No Exposure Certificate
- Composting site –No Exposure Certificate

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 municipal O&M (available at https://carljunction.org/swppp/) includes the following:

1. A list of potential pollutant sources at each facility, such as materials used and stored on site.
2. Minimum of annual inspections of all municipally owned or operated facilities for stormwater issues are to begin once checklists are developed for each facility.
   a. Records will be kept for inspections and follow up. This will mostly be checklists, once they are developed.
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 will be maintained for each facility, once it is developed.
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.

By September 2022, City of Carl Junction will develop the following items:

- Inspection Checklists for each municipal facility listed in the O&M Manual.
- Maps of BMPs at each municipal facility listed in the O&M Manual.

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. A digital copy of the O&M Manual is available on the City's Stormwater website, https://carljunction.org/swppp/, under the link labeled "OM Manual May 2013."

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 under Chapter 4 of the municipal O&M Manual. Washing takes place either in the wash bay at the Public Works facility or at an approved, off-site commercial facility. A digital copy of the O&M Manual is available on the City's Stormwater website, https://carljunction.org/swppp/, under the link labeled "OM Manual May 2013."

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 digital copy of the O&M Manual is available on the City's Stormwater website, https://carljunction.org/swppp/, under the link labeled "OM Manual May 2013."

Facility inspections checklists will be developed by September 2022 and initial inspections of all facilities will be conducted by the end of 2022. After this, annual inspections will continue throughout the permit period. Tracking will be accomplished by retaining inspection checklists.

The City will perform an annual review of the Pollution Prevention/Good Housekeeping Program to ensure MS4 compliance and determine if changes are needed. This review will take place during the preparation of the annual MS4 Stormwater Report.

Annual reviews will be recorded in the following table.

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.

Water quality impact of flood management projects are discussed in Chapter 10 of the municipal O&M Manual. The chapter states,

> Storm water management projects in both development and re-development will be assessed for water quality impact, according to the City's "Stormwater Management Criteria," which addresses the Storm Water Management Plan water quality requirements under MCM 5. All flood management projects involving channel modification will also be assessed for aquatic and water quality impacts through the Corps of Engineers 404 permit and MDNR 401 water quality certification process.

According to the O&M Manual, 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.

A digital copy of the O&M Manual is available on the City's Stormwater website, https://carljunction.org/swppp/, under the link labeled "OM Manual May 2013."

Have there been any such flood management projects to review?		
Year	Yes/no	If yes, the location(s)
2021		
2022		
2023		
2024		
2025		

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.

The City of Carl Junction will develop/implement the missing items from 4.6.A, 4.6.C, and 4.6.F within one year of permit issuance (by September 2022).

4.6.L The City of Carl Junction 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?
2021			
2022			
2023			
2024			
2025			

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 and Update the Carl Junction Operation & Maintenance Manual for Municipal Operations	4.6.D 4.6.E 4.6.F 4.6.G 4.6.H 4.6.I 4.6.J	Completed, except for updates listed below.	As needed. See below.	City Adminstrator	Maintain and Update the Carl Junction Operation & Maintenance Manual for Municipal Operations.	Completed, except for updates listed below.
Facility Inspections						
Develop PPGH Inspection Checklists and BMP Maps for Each Municipal Facility	4.6.I	Sept. 2022	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.
PPGH Inspections for Each Municipal Facility	4.6.1	Fall 2022	Repeat Annually	Building Inspector	Use PPGH Inspection Checklists & maps to perform annual inspections of each municipal facility.	Inspections tracked by keeping Checklists on file.
Education/Training/Review						
Develop/Identify Appropriate 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	Summer 2022	As needed	City Administrator	Develop/Identify Appropriate Staff Training Material for MCMs 3, 4, & 5. (See listed SWMP sections.) Keep records of material used for later reuse.	Record training material used.
Implement Updated Staff Training Program	4.6.A 4.6.B 4.3.Q 4.4.K 4.5.L	Fall 2022	As needed	City Administrator	Provide stormwater training for City staff according to the Stormwater Program Training Schedule on MCM 6 page 3. 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
Gary Kitzberger	Organization Official
Steve Lawver	Certifier
Sarah Simon (Allgeier Martin)	Preparer

APPENDIX **MCM 1**

PUBLIC EDUCATION & OUTREACH

SUPPORTING DOCUMENTS

This space reserved, as needed, for documentation of Public Education activities listed in Table MCM 1
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APPENDIX **MCM 2**

PUBLIC PARTICIPATION

SUPPORTING DOCUMENTS

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

APPENDIX **MCM 3**

ILLICIT DISCHARGE DETECTION & ELIMINATION

CHECKLISTS AND SUPPORTING DOCUMENTS

ILLICIT DISCHARGE INSPECTION - Field Sheet

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Outside Temperature (°F):	Rainfall (in.): Last 24 hours: Last 48 hours:		
Latitutde:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	

Land Use in Drainage Area (Check all that apply):

☐ Industrial
☐ Ultra-Urban Residential
☐ Suburban Residential
☐ Commercial
☐ Open Space
☐ Institutional
Other: _____
Known Industries: _____

Notes (e.g.., origin of outfall, if known):

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSIONS (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Eliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	In Water: ☐ No ☐ Partially ☐ Fully With Sediment: ☐ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
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		Cu Ft.	Bottle
	Time to fill		Sec	Stop Watch
☐Flow #2	Flow depth		In	Tape measure
	Flow width	_____' _____" Ft	Ft	Tape measure
	Measured length	_____' _____" Ft	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 ☐ Co rrosion	
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			
3.	Intermittent flow trap set?	☐ Yes	☐ No	If Yes, type:	☐ OBM	☐ Caulk dam

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

APPENDIX **MCM 4**

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

CHECKLISTS AND SUPPORTING DOCUMENTS

CITY OF CARL JUNCTION, MISSOURI

Stormwater Plan Submittal

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)

LAND DISTURBANCE INSPECTION REPORT
CITY OF CARL JUNCTION
303 NORTH MAIN (417)649-7237

EROSION AND SEDIMENT CONTROL INSPECTION
(to be used on projects requiring a SWPPP)

DATE: _____ PERMIT #: _____

OWNER: _____ ADDRESS: _____

EROSION/SEDIMENT CONTROLS (during construction):

_____ CONSTRUCTION ENTRANCE

_____ NO DEBRIS, SEDIMENT, WASTE, OIL, TRASH, ETC. ON ROAD OR LEAVING SITE

_____ EROSION/SEDIMENT CONTROLS IN PLACE AND FUNCTIONING AS PER SWPPP DOCUMENT
(includes silt fence/sock, filter berms, check dams, sediment basins/traps, etc.)

_____ MATERIALS, WASTE RECEPTACLES, ETC. COVERED/SECURED

PERMANENT STORMWATER CONTROLS (after construction):

_____ VEGETATION ESTABLISHED
(Minimum 70% coverage on 100% of disturbed area)

_____ PERMANENT STORMWATER CONTROLS IN PLACE AND FUNCTIONING AS PER APPROVED PLANS

NOTES & ACTIONS TAKEN: _____

_____ **PASSED INSPECTION** _____ **FAILED INSPECTION**

SIGNED: _____
Building Inspector

Last Updated 2018

APPENDIX **MCM 5**

POST-CONSTRUCTION STORMWATER MANAGEMENT

CHECKLISTS AND SUPPORTING DOCUMENTS

This space reserved for Long-Term BMP Inspection Checklists, to be added once developed.

APPENDIX **MCM 6**

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

SUPPORTING DOCUMENTS

This space reserved for documentation of training materials used in the Stormwater Program Training.

Facility Inspection Checklists shall be included in the Municipal Operation & Maintenance Manual, but may also be placed here.