Yellowstone County

PUBLIC WORKS DEPARTMENT
P.O. Box 35024
Billings, MT 59107-5024

Phone (406) 256-2735
Fax (406) 254-7946

February 28, 2020

Attn: Mr. Jon Kenning
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901

RE: Yellowstone County MS4 2019 Annual Report (MTR040010)

Dear Mr. Kenning,

Yellowstone County (County) is pleased to submit our 2019 MS4 Annual Report and supporting documentation. The attached documents include a completed Annual Report Form, a current Storm Water Management Program (SWMP) team organizational chart, a summary of our MS4 budget and resources, and an updated SWMP document.

During 2019, the County's SWMP team made significant progress towards compliance with the MS4 General Permit through development of foundational program elements that will be built upon in the coming years. Highlights of our accomplishments are summarized in the following table.

Table 1. 2019 Key Activities and Accomplishments

Permit Section(s)	SWMP Team Key Activities and Accomplishments
SWMP Requirements (Part II.A)	▪ Maintained and documented regular communications which included monthly team meetings and routine coordination through phone calls, emails, and text messaging.
Public Education, Outreach, Involvement and Participation (MCM 1 & 2)	▪ Developed the majority of the Public Education, Outreach, Involvement and Participation Program. This work included development of educational outreach fliers, development of a public outreach plan, and a comprehensive update to the County's storm water website.
Illicit Discharge Detection and Elimination (MCM 3)	▪ Performed a comprehensive storm water sewer inventory where we identified over 2,200 features relevant to the County's MS4. ▪ Conducted dry weather screening on 20 MS4 outfalls. ▪ Coordinated with the County legal department and DEQ to identify options and determine the next steps for complying with the MS4 General Permit's ordinance and regulatory-related requirements. ▪ Developed an interim Enforcement Response Plan and Illicit Discharge Investigation and Corrective Action Plan based on current County authorities.

Permit Section(s)	SWMP Team Key Activities and Accomplishments
Construction and Post-Construction Storm Water Management Programs (MCM 4 & 5)	▪ Coordinated with the County's legal department and DEQ to identify options and determine the next steps for complying with the MS4 General Permit's ordinance and construction and post-construction regulatory-related requirements.
Pollution Prevention/Good Housekeeping (MCM 6)	▪ Inventoried and mapped County-owned facilities and pollutant generating activities ▪ Developed storm water pollution prevention standard operating procedures (SOPs) for two County facilities ▪ Developed storm water pollution prevention SOPs for two County activities

The attached documentation demonstrates that we have been working diligently towards addressing the violations associated with the 2018 inspection of the County's SWMP and making progress towards compliance with all aspects of the MS4 General Permit. Details related to our compliance progress and planned activities for the coming year are provided in Section 8 of the attached SWMP.

Thank you for your consideration. Should you have any questions or concerns, please contact me (Yellowstone County Primary SWMP Coordinator) at (406) 254-7926, or by email at mblack@co.yellowstone.mt.gov.

Sincerely,

Mike Black

Mike Black, PE
Senior Yellowstone County Civil Engineer

Enclosures:

- **Completed Montana DEQ Annual Report Form for Calendar Year 2019**
- **Attachment A – SWMP Organizational Chart**
- **Attachment B – Summary of Budget and Resource Allocations**
- **Attachment C – Updated SWMP Document**

Montana Department of Environmental Quality
WATER PROTECTION BUREAU

Agency Use
MTR04_____
Date Rec'd:
Amount Rec'd:
Check No.:
Rec'd By:

FORM
MS4-AR

MPDES Storm Water Small MS4 Annual Report Form

Reporting period is for the calendar year, January 1st through December 31st. Check one. Annual Report is due by March 1st of the following year.

○ 2017 ○ 2018 ○ 2019 ○ 2020 ○ 2021

Instructions: This Annual Report Form is to be completed by each permittee and co-permittee authorized to discharge storm water under the General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Water Sewer Systems (MS4s). All authorized permittees and co-permittees are required to complete this Annual Report Form for each calendar year reporting period. For co-permittees authorized under one permit authorization or for co-permittees with multiple authorizations, you are required to complete this form and submit separate required documents/information exclusively for your respective regulated Small MS4 area(s). This completed Annual Report Form must be electronically submitted to the Montana Department of Environmental Quality, Water Protection Bureau. Electronic submission is required through the web-based tool: NetDMR. Additional information is located on DEQ's website: http://deq.mt.gov/Water/WQINFO/ctss/netdmr.

Small MS4 Authorization Number: MTR04 0010

Small MS4 Classification	◉ **Traditional**	○ **Non-Traditional**

Small MS4 Name: Yellowstone County

Small MS4 Mailing Address: PO Box 35024

City, State, and Zip Code: Billings, MT 59107-5024

Small MS4 Contact Person (and Title): Mike Black, PE (Primary SWMP Coordinator)

Mailing Address: PO Box 35024

City, State, and Zip Code: Billings, MT 59107-5024

Phone Number: (406) 256-2735	**E-mail address:** mblack@co.yellowstone.mt.gov

Storm Water Management Team: Attach an organizational chart identifying a primary SWMP coordinator and the positions responsible for implementing each minimum measure.		
Requested above chart:	(•) Attached See Attachment A	( ) Not Attached
Has the permittee established and executed a formalized mechanism for regular communication between storm water management team members?	(•) Yes	( ) No

Permittee's SWMP Resources:

How many FTEs does the permittee designate to the MS4 permit? 0.75 If needed, provide an explanation. The number of FTEs increased since the last annual report (from 0.50 to 0.75). This number is expected to increase as the program continues to develop.

If more space is needed, submit on an additional page with corresponding reference or on a data storage device.

Answer the following five (5) questions on an additional page with corresponding reference or on a data storage device. See Attachment B

(1) What are the source(s) of funding for implementation of the MS4 permit and the estimated percentage of the total budget allocated from each source listed?

(2) Specific to the annual reporting calendar year, how did the permittee justify commitment of resources or budget allocations to the implementation of the MS4 permit to decision-makers and the public? Provide a summary of meetings and outcomes held with decision-makers and the public.

(3) Has the permittee demonstrated program effectiveness to obtain budget allocations for this annual reporting calendar year or previous years? Why or why not? If so, what program effectiveness metrics were presented?

(4) How was this annual reporting calendar year's approach to allocate resources different than the previous year's approach?

(5) Was the permittee successful in their request for budget allocations? Describe the outcome and factors that affected or resulted in that outcome.

Illicit Discharge Detection & Elimination: Per the IDDE MCM requirement (Part II (3)(c.i)), has the permittee reviewed, and updated if needed, the storm sewer map during the calendar year?	(•) Yes	( ) No
Per the IDDE MCM requirement (Part II (3)(e.i)), has the permittee dry weather inspected and screened outfalls during the calendar year?	(•) Yes	( ) No

Fill in the blanks with numbers. The permittee has inspected 20 outfalls during this calendar year. Since authorization under the 2017 General Permit, the permittee has inspected 20 total outfalls out of the 58* total MS4 outfalls.

*Note: The County SWMP team identified 58 potential outfalls during the 2019 Storm Water Sewer Inventory Field Investigation; however, the total number of outfalls will be revised in 2020 following a review and verification of the field investigation results.

Per the Illicit Discharge Detection & Elimination MCM (Part II (3)(e.i)), the permittee will complete the requirement to inspect and screen all outfalls during dry weather by the end of the permit cycle.	(●) Yes	( ) No
Construction Site Storm Water Management: During the calendar year, how many construction storm water management plan reviews were completed (Part II (4)(b))? 0		
During the calendar year, how many construction projects were inspected for their storm water management controls (Part II (4)(c))? 0		
Pollution Prevention/Good Housekeeping for Permittee Operations: Has the permittee reviewed, and updated if needed, the inventory of permittee-owned/operated facilities and activities (Part II (6)(a.i))?	(●) Yes	( ) No
Has the permittee reviewed, and updated if needed, the map that identifies the locations of facilities and known locations of activities (Part II (6)(a.ii))?	(●) Yes	( ) No
Has the permittee conducted annual storm water pollution prevention training for permittee staff during the next permit year after development of each standard operating procedure (Part II (6)(a.v))? ***Not applicable during calendar year 2017, 2018, and 2019. Check "No" during these years.***	( ) Yes	( ) No
Training: According to Part II (B) Training requirements, has the permittee conducted applicable training during the 1st and 4th calendar years? ***Not required during calendar year 2018, 2019, and 2021. Check "No" during these years.***	( ) Yes	( ) No
According to Part II (B) Training requirements, has the permittee conducted applicable new employee training within 90 days of the hire date?	( ) Yes	( ) No
(No new applicable employees were hired in 2019)		
Special Conditions: Per **Pre-TMDL Approval (Part III.A) requirements**, attach the required information regarding identification of all outfalls that discharge to impaired waterbodies, the impaired waterbodies, and the associated pollutants of impairments. Summarize the BMPs implemented over the reporting period and a schedule of BMPs planned for the following year.		
(●) Attached See Section 5 of SWMP in Attachment C	( ) Not Attached	( ) Not Applicable
Special Conditions: Approved TMDLs (Part III.B) requirements per calendar year below.		
Calendar Year 2017: The permittee has attached a Sampling Plan that includes strategy rationale, monitoring frequency, monitoring parameters, and monitoring locations.		
( ) Attached	( ) Not Attached	( ) Not Applicable

Calendar Year 2017: The permittee has attached all outfalls that discharge to impaired waterbodies and the associated pollutants of impairment.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Calendar Year 2018: The permittee has attached all outfalls that discharge to impaired waterbodies and the associated pollutants of impairment.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Calendar Year 2019: The permittee has attached all outfalls that discharge to impaired waterbodies and the associated pollutants of impairment.		
◉ Attached See Section 5 of SWMP in Attachment C	◯ Not Attached	◯ Not Applicable
Calendar Year 2020: The permittee has attached all outfalls that discharge to impaired waterbodies and the associated pollutants of impairment.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Calendar Year 2020: The permittee has attached the TMDL section of the SWMP that identifies the measures and BMPs it plans to implement, describes the MS4's impairment priorities and long term strategy, and outlines interim milestones for controlling the discharge of the pollutants of concern and making progress towards meeting the TMDL.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Calendar Year 2021: The permittee has attached all outfalls that discharge to impaired waterbodies and the associated pollutants of impairment.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Calendar Year 2021: The permittee has evaluated the TMDL section of the SWMP based on monitoring results. The section has been revised, if needed, and is attached.		
◯ Attached	◯ Not Attached	◯ Not Applicable
Monitoring: Per requirements in Part IV (B), has the permittee attached monitoring results, calculations, and evaluations? See Appendix K of SWMP in Attachment C		
◉ Attached	◯ Not Attached	◯ Not Applicable

INSTRUCTIONS: The permittee will only fill out the Annual Report Attachments section below that corresponds to the calendar in which an Annual Report is being submitted for. Attach the requested documents/information.

2017 Annual Report Attachments (1st Calendar Year)		
Public Education and Outreach:		
Per requirements a.i in the referenced MCM, attach the required information regarding key target audiences and associated pollutants.		
◯ Attached	◯ Not Attached	
Public Involvement and Participation:		
Per requirements a.i in the referenced MCM, attach the required information regarding the public involvement approach and schedule of each key audience.		
◯ Attached	◯ Not Attached	
Illicit Discharge Detection & Elimination:		
Per requirements a.i in the referenced MCM, attach the required information regarding categories of non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements b.i in the referenced MCM, attach the required information regarding occasional non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements f.i in the referenced MCM, attach the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	
Construction Site Storm Water Management:		
Per requirements a.iii in the referenced MCM, attach progress towards an Enforcement Response Plan and associated documents.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements b.i in the referenced MCM, attach the construction storm water management plan review checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements b.iii in the referenced MCM, attach the construction storm water management plan review checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Traditional MS4s and per requirements c.i in the referenced MCM, attach the construction storm water management inspection form or checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements c.ii in the referenced MCM, attach the construction storm water management inspection form or checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable

Post-Construction Site Storm Water Management in New and Redevelopment		
Specific to Traditional MS4s and per requirements b.i in the referenced MCM, attach the post-construction storm water management plan review checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements b.ii in the referenced MCM, attach the post-construction storm water management plan review checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Per requirements in b.iii in the referenced MCM, attach the performance standards and associated documents.		
◯ Attached	◯ Not Attached	

2018 Annual Report Attachments (2nd Calendar Year)

Public Education and Outreach:		
Per requirements b.i in the referenced MCM, attach the required information regarding outreach messages.		
◯ Attached	◯ Not Attached	
Per requirements c.i in the referenced MCM, attach the required information regarding a description of formats, distribution channels and schedule for key target audiences.		
◯ Attached	◯ Not Attached	
Public Involvement and Participation:		
Per requirements a.ii in the referenced MCM, attach the required information regarding participation and key target audience feedback on approaches.		
◯ Attached	◯ Not Attached	
Illicit Discharge Detection & Elimination:		
Per requirements a.i in the referenced MCM, attach the required information regarding categories of non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements b.i in the referenced MCM, attach the required information regarding occasional non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements d.i in the referenced MCM, attach the adopted ordinance or other regulatory mechanism to prohibit illicit discharges.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements d.ii in the referenced MCM, attach the summary of legal authority to prohibit illicit discharges.		
◯ Attached	◯ Not Attached	◯ Not applicable
Per requirements d.iii in the referenced MCM, attach the required summary of the cooperative agreements.		

◯ Attached	◯ Not Attached	
Per requirements d.iv in referenced MCM, attach the Enforcement Response Plan and associated documents.		
◯ Attached	◯ Not Attached	
Per requirements e.ii in referenced MCM, attach the list of high priority outfalls.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements f.iii in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements f.iv in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Post-Construction Site Storm Water Management in New and Redevelopment		
Specific to Traditional MS4s and per requirements c.i in the referenced MCM, attach the post-construction storm water management inspection form or checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements c.ii in the referenced MCM, attach the post-construction storm water management inspection form or checklist.		
◯ Attached	◯ Not Attached	◯ Not applicable
Per requirements in c.iii in the referenced MCM, attach the inventory of all new permittee-owned and private post-construction storm water management controls.		
◯ Attached	◯ Not Attached	
Per requirements in c.vi in the referenced MCM, attach an inspection frequency protocol.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements c.vii, attach the developed inspection program.		
◯ Attached	◯ Not Attached	◯ Not applicable
Pollution Prevention/Good Housekeeping for Permittee Operations		
Per requirements in a.iii in the referenced MCM, attach completed Standard Operating Procedures.		
◯ Attached	◯ Not Attached	

2019 Annual Report Attachments (3rd Calendar Year)

Public Education and Outreach:

Per requirements c.ii in the referenced MCM, attach the required information regarding outreach materials distributions.

(●) Attached See Section 3.1.2 of SWMP in Attachment C	( ) Not Attached

Public Involvement and Participation:

Per requirements a.ii in the referenced MCM, attach the required information regarding participation and key target audience feedback on approaches.

( ) Attached	( ) Not Attached

Illicit Discharge Detection & Elimination:

Per requirements a.i in the referenced MCM, attach the required information regarding categories of non-storm water discharges or flows, associated pollutants, and local controls or conditions.

(●) Attached See Section 3.2.2 of SWMP in Attachment C	( ) Not Attached

Per requirements b.i in the referenced MCM, attach the required information regarding occasional non-storm water discharges or flows, associated pollutants, and local controls or conditions.

(●) Attached See Section 3.2.2 of SWMP in Attachment C	( ) Not Attached

Per requirements e.ii in referenced MCM, attach the list of high priority outfalls.

( ) Attached	( ) Not Attached

Per requirements e.iii in referenced MCM, attach the required summary of screening results.

(●) Attached See Section 3.2.5 of SWMP in Attachment C	( ) Not Attached

Specific to Traditional MS4s and per requirements f.iii in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.

( ) Attached	(●) Not Attached	( ) Not applicable

Specific to Non-Traditional MS4s and per requirements f.iv in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.

( ) Attached	( ) Not Attached	( ) Not applicable

Construction Site Storm Water Management:

Specific to Traditional MS4s and per requirements a.i in the referenced MCM, attach the adopted ordinance or other regulatory mechanism to require construction storm water controls.

( ) Attached See Section 3.3.2 of SWMP in Attachment C	(●) Not Attached	( ) Not applicable

Specific to Non-Traditional MS4s and per requirements a.ii in the referenced MCM, attach the legal authority summary.

( ) Attached	( ) Not Attached	( ) Not applicable

Per requirements a.iii in the referenced MCM, attach the adopted Enforcement Response Plan and associated documents.

(●) Attached See Section 3.3.5 of SWMP in Attachment C	( ) Not Attached

Post-Construction Site Storm Water Management in New and Redevelopment

Per requirements in c.viii in the referenced MCM, attach findings and compliance actions regarding inspections of high priority post-construction storm water management controls.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements c.ix, attach the findings and resulting actions regarding inspections of high priority privately-owned post-construction storm water management controls.		
◯ Attached	◯ Not Attached	◯ Not applicable
Pollution Prevention/Good Housekeeping for Permittee Operations		
Per requirements in a.iii in the referenced MCM, attach the completed Standard Operating Procedures.		
◉ Attached See Section 3.5.2 of SWMP in Attachment C	◯ Not Attached	

2020 Annual Report Attachments (4th Calendar Year)

Public Education and Outreach:		
Per requirements c.ii in the referenced MCM, attach the required information regarding outreach materials distributions.		
◯ Attached	◯ Not Attached	
Public Involvement and Participation:		
Per requirements a.ii in the referenced MCM, attach the required information regarding participation and key target audience feedback on approaches.		
◯ Attached	◯ Not Attached	
Illicit Discharge Detection & Elimination:		
Per requirements a.i in the referenced MCM, attach the required information regarding categories of non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements b.i in the referenced MCM, attach the required information regarding occasional non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements e.ii in referenced MCM, attach the list of high priority outfalls.		
◯ Attached	◯ Not Attached	
Per requirements e.iii in referenced MCM, attach the required summary of screening results.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements f.iii in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements f.iv in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge		

Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Post-Construction Site Storm Water Management in New and Redevelopment		
Specific to Traditional MS4s and per requirements a.i in the referenced MCM, attach the adopted ordinance or other regulatory mechanism to require post-construction storm water controls.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements a.ii in the referenced MCM, attach the legal authority summary.		
◯ Attached	◯ Not Attached	◯ Not applicable
Per requirements in a.iii in the referenced MCM, attach the Enforcement Response Plan and associated documents.		
◯ Attached	◯ Not Attached	
Per requirements in c.viii in the referenced MCM, attach findings and compliance actions regarding inspections of high priority post-construction storm water management controls.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements c.ix, attach the findings and resulting actions regarding inspections of high priority privately-owned post-construction storm water management controls.		
◯ Attached	◯ Not Attached	◯ Not applicable
Per requirements in d.i in the referenced MCM, attach a summary of the discussion outcomes.		
◯ Attached	◯ Not Attached	
Pollution Prevention/Good Housekeeping for Permittee Operations		
Per requirements in a.iii in the referenced MCM, attach the completed Standard Operating Procedures.		
◯ Attached	◯ Not Attached	

2021 Annual Report Attachments (5th Calendar Year)

Public Education and Outreach:	
Per requirements c.ii in the referenced MCM, attach the required information regarding outreach materials distributions.	
◯ Attached	◯ Not Attached
Public Involvement and Participation:	
Per requirements a.ii in the referenced MCM, attach the required information regarding participation and key target audience feedback on approaches.	
◯ Attached	◯ Not Attached
Illicit Discharge Detection & Elimination:	
Per requirements a.i in the referenced MCM, attach the required information regarding categories of non-storm water discharges or flows, associated pollutants, and local controls or conditions.	

◯ Attached	◯ Not Attached	
Per requirements b.i in the referenced MCM, attach the required information regarding occasional non-storm water discharges or flows, associated pollutants, and local controls or conditions.		
◯ Attached	◯ Not Attached	
Per requirements e.ii in referenced MCM, attach the list of high priority outfalls.		
◯ Attached	◯ Not Attached	
Per requirements e.iii in referenced MCM, attach the required summary of screening results.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements f.iii in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Specific to Non-Traditional MS4s and per requirements f.iv in the referenced MCM, attach the summary of investigations conducted and corrective actions taken per the required Illicit Discharge Investigation and Corrective Action Plan and any associated documents.		
◯ Attached	◯ Not Attached	◯ Not applicable
Post-Construction Site Storm Water Management in New and Redevelopment		
Per requirements in c.viii in the referenced MCM, attach findings and compliance actions regarding inspections of high priority post-construction storm water management controls.		
◯ Attached	◯ Not Attached	
Specific to Traditional MS4s and per requirements c.ix, attach the findings and resulting actions regarding inspections of high priority privately-owned post-construction storm water management controls.		
◯ Attached	◯ Not Attached	◯ Not applicable
Pollution Prevention/Good Housekeeping for Permittee Operations		
Per requirements in a.iii in the referenced MCM, attach completed Standard Operating Procedures.		
◯ Attached	◯ Not Attached	
Attach any updates, changes, or improvements to the Small MS4 Storm Water Management Program per requirements in Part IV (E).		
● Attached	◯ Not Attached	◯ Not applicable

See Section 8 and Appendix I of SWMP in Attachment C

Annual Report Form Signature

This Annual Report Form must be completed, signed, and certified as follows:

- **For a corporation, by a principal officer of at least the level of vice president;**
- **For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or**

For a municipality, state, federal, or other public facility, by either a principal executive officer or ranki elected official.

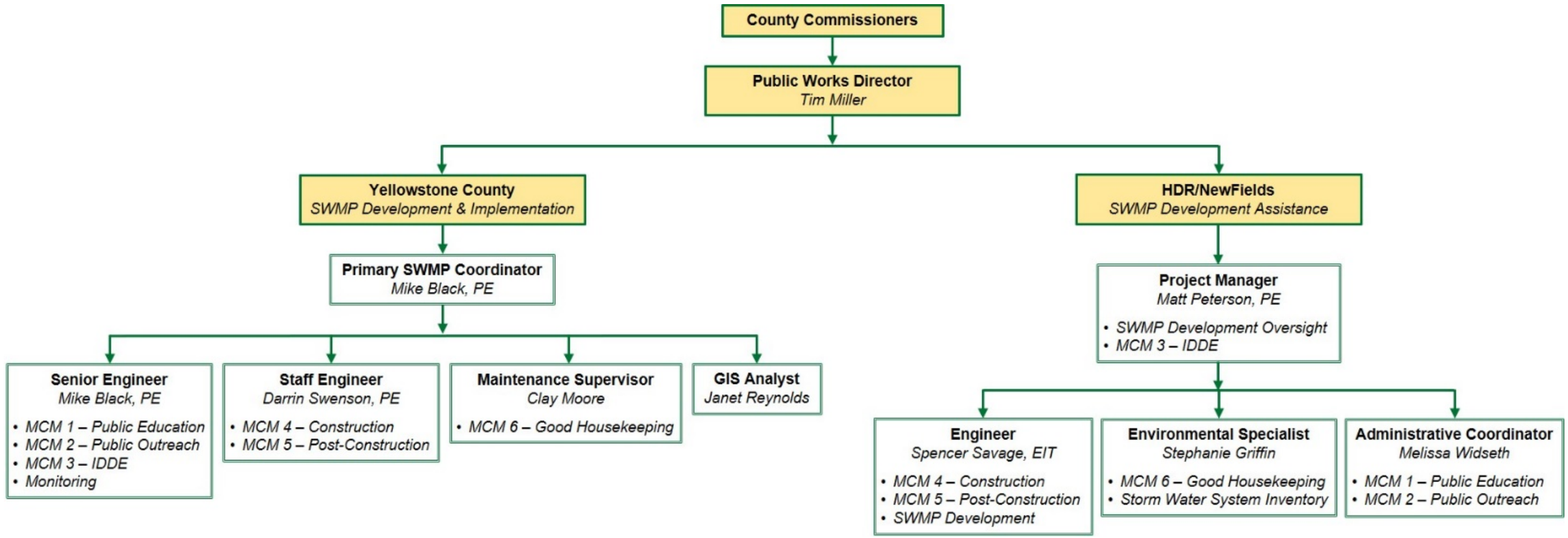
All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the 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. [75-5-633, MCA].

Certification of this form indicates conformance with the 2017 General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer Systems and the required Annual Reporting upon receipt of permit coverage.

Name (Type or Print)	
Denis Pitman	
Title (Type or Print)	**Phone Number**
Chair, Yellowstone County Board of Commissioners	(406) 256 - 2701
Signature 	**Date Signed** February 25, 2020

Attachment A – SWMP Team Organization Chart



Attachment B – Funding and Budget Discussions

1. **What are the source(s) of funding for implementation of the MS4 permit and the estimated percentage of the total budget allocated from each source listed?**

   The road and bridge fund is the current funding source for MS4 permit implementation. A different funding source may be evaluated in the future, if necessary.

2. **Specific to the annual reporting calendar year, how did the permittee justify commitment of resources or budget allocations to the implementation of the MS4 permit to decision-makers and the public? Provide a summary of meetings and outcomes held with decision-makers and the public.**

   Discussions were held with the Yellowstone County commissioners following the results of the 2018 program audit and inspection results and the commissioners agreed to fund the program, by using consultants (to further understand options of in-house staff or use of consultants) to bring Yellowstone County back into compliance with the MS4 General Permit.

3. **Has the permittee demonstrated program effectiveness to obtain budget allocations for this annual reporting calendar year or previous years? Why or why not? If so, what program effectiveness metrics were presented?**

   No. The program is still being developed. Program effectiveness can be evaluated in the future to justify and obtain budget allocations.

4. **How was this annual reporting calendar year's approach to allocate resources different than the previous year's approach?**

   In previous years, our approach to allocating resources was minimal. Our program was inspected in June 2018 by Montana DEQ and it was apparent that we needed to allocate more resources to improve our program. As a result, we hired HDR, Inc. in October 2018 to be an integral part of our SWMP team and we began to re-structure our team's organizational chart (see Attachment 1) and program development approach. We continue to use HDR in subsequent Task Orders to further our compliance efforts within existing legal constraints.

5. **Was the permittee successful in their request for budget allocations? Describe the outcome and factors that affected or resulted in that outcome.**

   Yes. The audit results and violations were the primary factors in affecting the budget allocations, along with our commitment to move further into more compliance (within existing legal constraints).

Attachment C - Updated SWMP Document

Yellowstone County, Montana

MS4 Storm Water Management Program

Permit Years: 2017-2021

Updated February 21, 2020

Prepared by

HDR

Contents

Tables

Figures

Appendices

This page is intentionally left blank.

1 Introduction

Yellowstone County's storm drainage system is regulated by Montana's General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4), Permit Number MTR040000 (General Permit). The General Permit provides authorization to discharge storm water to waters of the state under the Montana Pollutant Discharge Elimination System (MPDES). The General Permit requires the County to develop, document, and maintain a Storm Water Management Program (SWMP) which includes management practices, control techniques, systems, designs, good standard engineering practices, and such other provisions necessary to reduce the discharge of pollutants from the permitted Small MS4 to the maximum extent practicable (MEP).

This SWMP describes Yellowstone County's (County) MS4 compliance program which includes best management practices (BMPs), control techniques, inventory of systems, designs, and engineering practices to comply with the requirements of the General Permit.

1.1 MS4 General Permit Compliance Status

On June 14th, 2018 Montana DEQ conducted an inspection of the County's SWMP to determine compliance with the General Permit. Montana DEQ concluded that the County's SWMP was deficient and identified violations in each of the five sections of the General Permit that were reviewed:

- Part II.A – Storm Water Management Program
- Part II.A.3 – Illicit Discharge Detection and Elimination
- Part II.B – Training
- Part II.C – Sharing Responsibility
- Part III – Special Conditions
  - Parts A and B
- Part IV – Monitoring, Recording, and Reporting Requirements
  - Parts A and B

The County developed a regulatory compliance schedule to address each violation and agreed to develop an updated SWMP that includes a plan and schedule to address all General Permit requirements over the remainder of the permit term. This SWMP addresses multiple violations and describes the County's plan to develop a comprehensive SWMP over the remainder of the permit term. A copy of the regulatory compliance schedule and a progress update is provided in Section 8. Additionally, a SWMP development schedule is provided in Appendix A.

This SWMP document will be updated and submitted with each annual report to document progress.

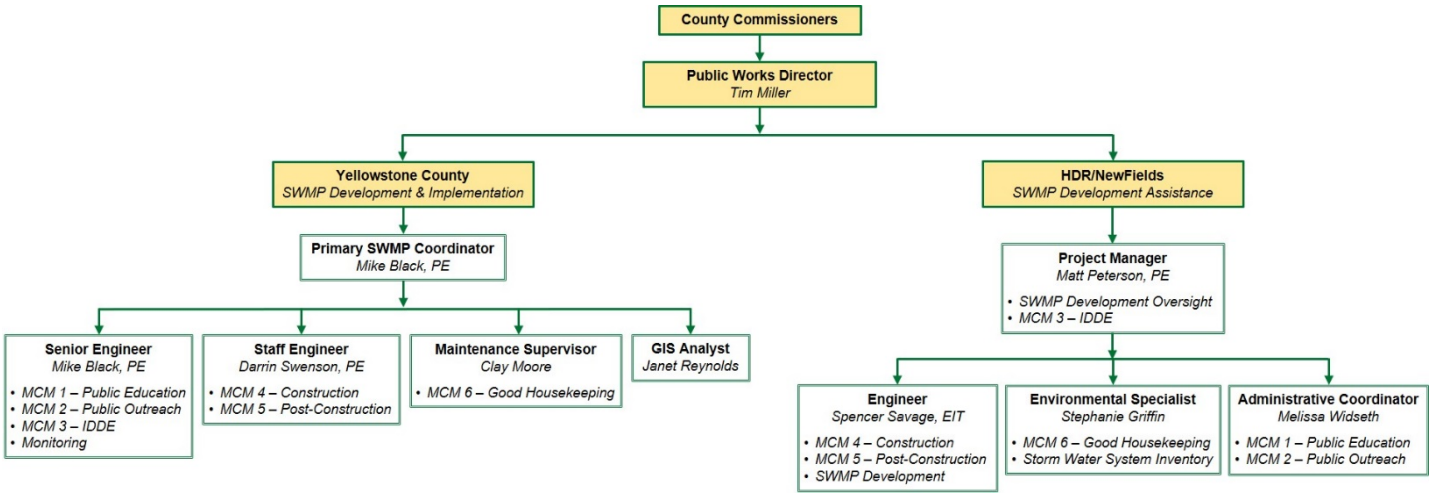
1.2 Storm Water Management Program Team

The County is responsible to develop and implement a coordinated storm water program that includes the development of a SWMP team comprised of persons responsible for implementation of the SWMP and the establishment of formal mechanisms for communication and coordination between team members (e.g., meetings, email updates, etc.) to ensure cooperation necessary to facilitate permit compliance and timely reporting. This section describes the County's SWMP team composition and coordination measures.

1.2.1 SWMP Team Composition

The County is governed by the Board of County Commissioners. The chair of the board, Denis Pitman, is the certified official to sign documents for the General Permit. The Public Works Department is responsible to develop, implement, adhere to, and enforce the General Permit requirements.

The County has hired HDR Engineering, Inc.[1] to assist with development and implementation of their SWMP. County staff, HDR, and NewFields staff comprise the SWMP team. HDR and NewFields' staff members (hereafter referred to as HDR-NewFields) currently play a large role in the SWMP team. The long-term plan is for roles and responsibilities to transition to County staff members over the coming years. The current roles and responsibilities of SWMP team members will be evaluated in 2020 to further assess the transition process. The following organizational chart identifies SWMP team members and General Permit responsibilities. This organizational chart will be updated annually.



1.2.2 SWMP Team Coordination

Routine communication between team members is an essential component to a successful SWMP. The SWMP team uses the following mechanisms for regular communication between team members:

- Meetings
  - Monthly SWMP check-in meetings are scheduled for 9:30AM on the first Wednesday of each month. The intent of these meetings is to provide a progress update on program development and implementation. Staff members from the County and HDR-NewFields will attend. Additionally, HDR-NewFields SWMP team members coordinate on a weekly basis and will continue to do so.
  - Meetings are held in person at the Yellowstone County Public Works office, as well as on the phone via conference call.
  - Meeting summaries will continue to be developed to document meeting discussions and action items.

[1] NewFields Companies, LLC subcontracted with HDR in 2019 to provide technical assistance and project oversight as various components of the SWMP are developed.

- Direct communication between team members
  - Email
  - Phone
  - Text
  - In-person meetings as needed

In order to efficiently share information, the SWMP team has developed a file system using Microsoft OneDrive to allow access to all team members. The main folder structure is provided below.

- Yellowstone County MS4 Program (OneDrive root file structure)
  - Annual Reports
  - Monitoring
  - Storm Water System Inventory
  - SWMP
  - SWMP Team Communication
  - Training

1.3 Sharing Responsibility

The General Permit allows MS4's to share responsibility to implement minimum control measures (MCMs) with other entities in order to satisfy permit requirements. In previous years, the County has partnered with other entities to implement General Permit requirements without engaging in formal agreements to share responsibilities. For example, the County and the City of Billings recently coordinated a fair booth at the annual Montana Fair and a joint training session for post-construction storm water management.

The County does not currently have any formal agreements to receive assistance with fulfilling General Permit requirements or provide assistance to other MS4s to fulfill General Permit requirements. The County's SWMP team will continue to explore opportunities to coordinate with other entities to implement the SWMP including the City of Billings and Montana Department of Transportation; however, development of formal agreements to share permit responsibilities is not anticipated.

NOTE: *The County has hired HDR-NewFields to help develop the SWMP; however, HDR-NewFields is not formally responsible for implementation of any single MCM. HDR-NewFields is considered to be an integral member of the SWMP team while the program is being developed. A description of HDR-Newfield's role on the SWMP team is provided in Section 1.2.1.*

2 Description of Permit Area

The County MS4 area is comprised of multiple small areas surrounding the City of Billings and a few larger tracts along the Yellowstone River. The County's storm drainage system is separated from the sanitary sewer system, with storm drains discharging into local streams and rivers. This section describes the geographic area of General Permit coverage and receiving count MS4 waterbodies.

2.1 MS4 Boundary

The County's geographic area of General Permit coverage includes the U.S. Census designated urbanized areas for Yellowstone County in accordance with the 2010 census, with the exception of areas in the City of Billings limits. As of December 2019, the County's geographic area of General Permit coverage encompasses 16.13 square miles, shown in Figure 2-1.

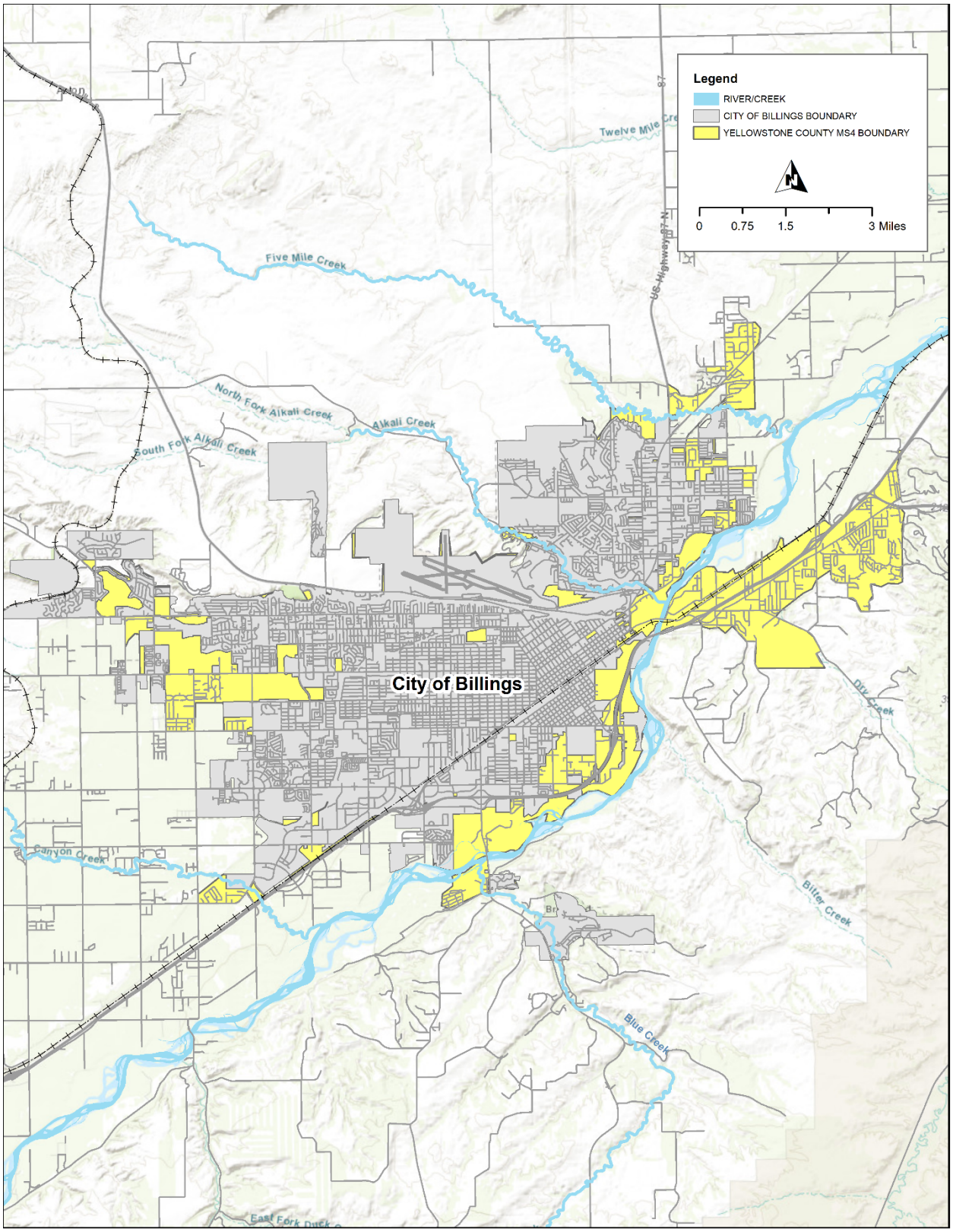


Figure 2-1. Geographic Area of General Permit Coverage

2.2 Receiving Waterbodies

According to the National Hydrography Dataset (NHD), the General Permit coverage area for the County includes eight watersheds:

- Alkali Creek
- Brockway Coulee-Yellowstone River
- City of Billings-Yellowstone River
- Five Mile Creek
- Hogans Slough
- Lower Blue Creek
- Lower Canyon Creek
- Sevenmile Creek-Yellowstone River

In 2019, the SWMP team conducted a storm sewer system field investigation to identify and map storm sewer features within each of these watersheds. As a result, the team identified and mapped 2,265 features including 139 surface waters and 21 receiving waterbodies. The County's list of surface waters and receiving waterbodies has been updated and is provided in Appendix A. Further discussion on the field investigation, receiving waterbodies, and MS4 outfalls is provided in Section 3.2.3.

3 Minimum Control Measure Management Program

The General Permit requires the County to develop, implement, and manage appropriate types of BMPs in order to minimize the discharge of pollutants to receiving waterbodies. These BMPs are required to be selected, designed, installed, implemented, inspected, and maintained in accordance with good engineering, hydrologic, and pollution control practices. To assist with the development, implementation, and management of BMPs, the General Permit outlines six MCMs which are the fundamental elements of this SWMP:

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

The following sections provide a description of the MCMs along with the associated requirements for General Permit compliance and the current compliance status for each requirement. Some requirements have been identified as being out of compliance per the General Permit's implementation schedule. For each non-compliant item, an action plan is provided that details the anticipated activities that will take place over the remainder of the General Permit term.

3.1 MCM 1 and 2: Public Education, Outreach, Involvement, and Participation

Elements of Education and Outreach Program
☑ Identify Key Target Audiences
☑ Identify Potential Pollutants
☑ Develop Outreach Strategy/Outreach Material
☑ Distribute Outreach Material (ongoing)
☑ Update Storm Water Website (ongoing)

Public education, outreach, and participation are essential to preventing storm water pollution and protecting local waterbodies. Part II.A.1 and Part II.A.2 of the General Permit require the County to implement a storm water public education program and to develop a strategy to involve key target audiences. The intent of the program is to provide educational materials and outreach activities to key target audiences within the County to help raise awareness about the impacts of storm water discharges on local waterbodies. The program is also intended to educate the audiences about certain behaviors and activities that have the potential to pollute storm water while at the same time motivating a change in these behaviors and activities in order to reduce storm water pollution.

3.1.1 Key Target Audiences

Per Part II.A.1.a.i of the General Permit, the County has evaluated businesses, industries, and community behaviors to identify key target audiences for public education, outreach, and participation. The list of target audiences is provided in Table 3-1.

Table 3-1 Summary of Key Target Audiences

Key Target Audience	Description	Rationale	Potential Pollutants
Construction Industry	▪ Business managers ▪ Contractors ▪ Trades workers	Construction sites have a high potential to release pollutants if not managed properly.	Sediment, concrete washout, trash & debris, paint, equipment chemicals
Automotive Maintenance Facilities	▪ Commercial car-care ▪ Retail businesses ▪ Commercial car washes ▪ Gas stations	Facilities have a high potential to release significant pollutants.	Oil, fuel, cleaning chemicals, hazardous chemicals
Landscaping Companies	▪ Business that develop and maintain commercial and private landscape areas	Residual chemicals and debris have a high potential to be released into the MS4.	Fertilizers, pesticides, landscape debris, sediment
County Residents	▪ Residents within Yellowstone County MS4	Household maintenance, car maintenance, and pet waste have a high potential to release significant pollutants.	Landscape debris, household chemicals, pet waste, automotive chemicals

3.1.2 Outreach Strategy

The County has developed a public outreach plan to guide interactions with the public, document strategies for public education and involvement, and comply with Part II.A.1.c and Part II.A.2.a of the General Permit. The plan, presented in this section, documents strategies that will engage key target audiences using two types of engagements: passive engagement and active engagement.

- Passive engagements focus on educating the public by distributing information through formats that do not require personal interaction. Passive strategies allow SWMP team members to educate a large number of people using limited resources.

- Active engagements provide the public with both education and involvement opportunities through direct interaction with SWMP team members or other personnel assisting with implementation of the storm water management program.

Table 3-2 provides a summary of active and passive engagement strategies implemented by the County SWMP team and the remainder of this section describes the County's approach to implement each engagement strategy.

Table 3-2 Summary of Public Outreach and Involvement Strategies

Engagement Type	Engagement Strategy	Applicable Key Target Audience
Passive	▪ Storm water website ▪ Educational fliers ▪ Pet waste station	▪ Construction industry ▪ Automotive maintenance facilities ▪ Landscaping companies ▪ County residents
Active	▪ Public contact program ▪ Industry conferences and training seminars ▪ Public interviews ▪ County fair storm water booth	▪ Construction industry ▪ Automotive maintenance facilities ▪ Landscaping companies ▪ County residents

Passive Engagement Strategies

- **Storm Water Website:** The County website serves as a public communication mechanism for key target audiences that provides information on storm water pollution prevention, the MS4 program, illegal dumping and reporting, and links to new public outreach material. The website is located at the following address: http://www.co.yellowstone.mt.gov/publicworks/StormWater.asp
  - **Target Audiences:** Construction industry, automotive maintenance facilities, landscaping companies, County residents
  - **Target Pollutants:** Sediment, trash and debris, automotive chemicals, nutrients, yard waste, pet waste, household chemicals
  - **Strategy and Schedule:**
    - ☑ 2019 – Comprehensive update to website
    - ☐ 2020 – Annual updates to reflect SWMP updates
    - ☐ 2021 – Annual updates to reflect SWMP updates
  - **Treatment Area:** Yellowstone County
  - **Distribution Method:** Website content is available to anyone with internet access
  - **Method to Document Participation and Collect Feedback:** Use Google Analytics to track website page visits.
  - **Participation and Feedback Results:**
    - 2017 – Unknown (not tracked in 2017)
    - 2018 – Unknown (not tracked in 2018)
    - 2019 – (Comprehensive website updated implemented in December 2019, results will be analyzed in 2020)
- **Educational Fliers:** Storm water fliers provide valuable information to key target audiences about storm water pollutants, pollutant generating activities, and pollution prevention techniques. In 2019, the SWMP team developed four storm water fliers that target each of the key target audiences identified in Table 3-1. A copy of the fliers are provided in Appendix C.

- **Target Audiences:** Construction industry, automotive maintenance facilities, landscaping companies, County residents
- **Target Pollutants:** Sediment, trash and debris, automotive chemicals, nutrients, yard waste, pet waste, household chemicals
- **Strategy and Schedule:**
  - ☑ 2019 – Developed four storm water fliers and distributed at Montana Fair
  - ☐ 2020 – Distribute fliers to local businesses and residents
  - ☐ 2021 – Distribute fliers to local businesses and residents
- **Treatment Area:** Yellowstone County
- **Distribution Method:** Electronic format available on website, hardcopy format available at County Office and County Shops. Additional distribution methods will be evaluated in 2020.
- **Method to Document Participation and Collect Feedback:** Methods will be evaluated in 2020.
- **Participation and Feedback Results:**
  - 2017 – N/A
  - 2018 – N/A
  - 2019 – Limited results because of limited distribution opportunities

- **Pet Waste Stations:** Pet waste stations were installed in 2011 at Zimmerman Park and Two Moon Park to help maintain the parks cleanliness and to reduce storm water pollution. These stations are located at the main entrance to these parks and consist of PVC containers with plastic bags. Signs are posted above each station to promote awareness and to encourage visitors to help maintain the parks cleanliness. These stations are managed by the County Parks Board with assistance from volunteers within the Yellowstone River Parks Association (YRPA).
  - **Target Audiences:** County residents
  - **Target Pollutants:** E.coli, nitrogen, phosphorus
  - **Strategy and Schedule:**
    - ☑ 2019 – Documented the number and location of pet waste stations
    - ☐ 2020 – Coordinate with County Parks Board and YRPA to explore opportunities for additional pet waste stations
    - ☐ 2021 – Evaluate effectiveness of pet waste stations
  - **Treatment Area:** Yellowstone County
  - **Distribution Method:** N/A
  - **Method to Document Participation and Collect Feedback:** Methods will be evaluated in 2020.
  - **Performance:**
    - 2017 – Unknown
    - 2018 – Unknown
    - 2019 – Unknown

Active Engagement Strategies

- **Public Contact Program:** The County has provided various ways for businesses and residents to contact MS4 staff members. This allows the County track storm water

complaints, address questions or concerns relating to storm water, and it provides the opportunity for community members to be involved.

- **Target Audiences:** Construction industry, automotive maintenance facilities, landscaping companies, county residents
- **Target Pollutants:** Illegal dumping, sediment, trash and debris, automotive chemicals, nutrients, yard waste, pet waste, household chemicals
- **Strategy and Schedule:**
  - ☑ 2019 – County contact information provided on website and outreach material
  - ☐ 2020 – (TBD)
  - ☐ 2021 – (TBD)
- **Treatment Area:** Yellowstone County
- **Distribution Method:** Methods will be evaluated in 2020
- **Method to Document Participation and Collect Feedback:** Track the total number of reports. Yellowstone County received two inquires in 2019 about construction storm water within the County's MS4 boundary.
- **Performance:**
  - 2017 – Unknown
  - 2018 – Unknown
  - 2019 – Two inquiries about construction storm water

- **Industry Conferences and Training Seminars:** Storm water conferences and training seminars take place each year for individuals and businesses within the public and private sector. These conferences and training seminars provide the opportunity educate the public about program updates and new requirements within Yellowstone County. Examples of conferences and trainings include storm water pollution prevention plan (SWPPP) administrator training, the Montana Storm Water Conference, and the Montana Contractors Association (MCA) Annual Convention.
  - **Target Audiences:** Construction industry, landscaping companies
  - **Target Pollutants:** Sediment, trash and debris, nutrients, yard waste
  - **Strategy and Schedule:**
    - ☑ 2019 – Identify and evaluate opportunities to become involved
    - ☐ 2020 – Participate in industry conferences
    - ☐ 2021 – Participate in industry conferences
  - **Treatment Area:** Yellowstone County
  - **Distribution Method:** Upcoming events are posted on website
  - **Method to Document Participation and Collect Feedback:** Track total number of engagements.
  - **Performance:**
    - 2017 – Unknown
    - 2018 – Unknown
    - 2019 – Website, Montana Fair booth

- **Public Interviews:** Interviews with local news broadcasting stations provides the opportunity to broadcast storm water awareness considerations and to announce program updates to key target audiences.
    - **Target Audiences:** County residents
    - **Target Pollutants:** Sediment, trash and debris, nutrients, yard waste, pet waste, household chemicals
    - **Strategy and Schedule:**
        - ☑ 2019 – Interview to discuss the County MS4 program on May 28th with KULR-8 News Station broadcasted on live television
        - ☐ 2020 – Request follow-up interview (program updates and storm water awareness)
        - ☐ 2021 – Request follow-up interview (program updates and storm water awareness)
    - **Treatment Area:** Yellowstone County
    - **Distribution Method:** Public interviews are available to anyone with television or internet access
    - **Method to Document Participation and Collect Feedback:** Methods will be evaluated in 2020
    - **Performance:**
        - 2018 – Unknown
        - 2017 – Unknown
        - 2019 – Unknown

- **County Fair Storm Water Booth:** The annual Montana Fair at MetraPark serves as a public outreach opportunity to promote awareness about storm water and applicable pollution prevention techniques. For the past 12 years, the County has partnered with the City of Billings to operate and manage a Storm Water Booth with poster boards, placard hand-outs, and contact information.
    - **Target Audiences:** Construction industry, County residents
    - **Target Pollutants:** Sediment, trash and debris, nutrients, yard waste, pet waste, household chemicals
    - **Strategy and Schedule:**
        - ☑ 2019 – Operate and manage booth
        - ☐ 2020 – Operate and manage booth
        - ☐ 2021 – Operate and manage booth
    - **Treatment Area:** Yellowstone County
    - **Distribution Method:** Fliers are available for residents to review and take with them at the booth
    - **Method to Document Participation and Collect Feedback:** Methods will be evaluated in 2020
    - **Performance:**
        - ☐ 2017 – Unknown
        - ☐ 2018 – Unknown
        - ☐ 2019 – Unknown

3.1.3 Storm Water Website

The County has a storm water webpage that provides information to the public about storm water. The webpage was revised in 2019 and access is available through the County's Public Works website for key target audiences, interested stakeholders, and the general public. Per Part II.A.1.a.ii and Part II.A.2.b of the General Permit, the website includes the following information:

- A copy of the General Permit
- Access/links to outreach material
- Current outreach event information
- SWMP documents and updates
- Copies of the annual reports
- An effective mechanism for providing continued public input for the SWMP
- Information on how to identify sources of illicit discharges
- Procedures on how to report an illicit discharge
- A summary of County's requirements for covered construction activities
- Instructions on how to submit construction project complaints

3.2 MCM 3: Illicit Discharge Detection and Elimination

Administrative Rule of Montana (ARM) 17.30.1102(7) defines an illicit discharge as any discharge to a MS4 that is not composed entirely of storm water except discharges pursuant to an MPDES permit and discharges resulting from firefighting activities. Part II.A.3 of the General Permit requires the County to develop, implement, and enforce a program to detect and eliminate illicit discharges. The following sections describe the current status of the County's illicit discharge detection and elimination (IDDE) program and the activities that will take place over the remainder of the permit term.

NOTE: *The following sections outline Yellowstone County's plan for developing an IDDE program. Implementation of this program is dependent upon the County's ability to establish legal authority through a storm water ordinance or other regulatory mechanism which is currently being evaluated. Progress towards establishing legal authority is discussed in Section 0.*

3.2.1 Illicit Discharge Program Overview

The SWMP team is actively working to develop an IDDE program that addresses all General Permit requirements. To accomplish this, the County has identified five key objectives that will be used to build the IDDE program. These objectives are shown in Figure 3-1.

Elements of IDDE Program
☑ Non-Storm Water Discharge Evaluation
☑ Occasional Incidental Non-Storm Water Discharge Evaluation
☐ Storm Water Sewer Inventory (in progress)
☐ Illicit Discharge Prohibitions and Enforcement
☐ Outfall Inspections (in progress)
☐ Illicit Discharge Investigations
☐ Investigation and Enforcement Documentation

To achieve these objectives, the primary elements of the IDDE program consist of evaluating non-storm water discharge evaluations and occasional incidental non-storm water discharge evaluations, a storm water sewer inventory, illicit discharge prohibitions, outfall inspections, and illicit discharge investigations. Once the program is developed, documentation will be provided in Appendix D and any updates or investigations will be documented in each annual report.

Figure 3-1. IDDE Program Key Objectives

The following sections describe the IDDE program in detail and document the current status of each requirement. For requirements that have yet to be addressed, a plan is provided that details future activities and the anticipated schedule for these activities in order to achieve compliance.

3.2.2 Non-Storm Water Discharge Evaluations

Per Part II.A.3.a.i and Part II.A.3.b.i of the General Permit, the County is required to annually evaluate non-storm water discharges and occasional incidental non-storm water discharges within the MS4 boundary. The purpose of this evaluation is to:

1. Determine if the non-storm water discharge is suspected of being a significant contributor of pollutants;
2. Identify what the potential associated pollutants are for each discharge; and,
3. Identify what local storm water management controls or conditions are or will be implemented to reduce pollution.

The 2019 non-storm water discharge and occasional incidental non-storm water discharge evaluations are provided in Table A-2 and Table A-3 in Appendix A. The SWMP team did not identify any significant contributors of pollutants to the MS4; however, the following non-storm water discharges were identified as potential contributors:

- Rising ground waters
- Irrigation water
- Individual residential car washing
- Dechlorinated swimming pool discharges
- Street wash water

The SWMP team will evaluate this list in 2020 to determine whether they are significant contributors of pollutants to the MS4 and consider local BMPs which could be implemented to reduce the potential for discharge of pollutants to the MS4.

3.2.3 Storm Water Sewer Inventory

Major Milestone	Schedule & Deadline
▪ Submit Preliminary Map	☑ March 2019
▪ Phase 1 Field Investigation	☑ Summer 2019
▪ Submit Updated Map	☑ March 2020
▪ Phase 2 Field Investigation	☐ Summer 2020
▪ Submit Final Map	☐ March 2021

Per Part II.A.3.c of the General Permit, the County is required to inventory storm water sewer infrastructure to thoroughly track illicit discharges, contain spills, and determine high priority areas. The 2018 inspection by Montana DEQ determined that the County's storm water inventory was deficient. As a result, the County developed an inventory analysis plan and schedule to develop a system-wide storm sewer system inventory. The plan and schedule is shown in Table 3-3.

Table 3-3. Storm Water Inventory Analysis Plan & Schedule

Task	Description	Dates
1. Confirm area to be mapped (County MS4 boundary)	Identify 2010 U.S. Census designated urbanized area and City of Billings MS4 boundaries	Sept 2018 (completed)
2. Identify items to be mapped	**Items to be mapped:** *MCM 3*: outfalls, surface waters that receive discharges from outfalls, inlets, open channels, subsurface conduits/pipes, dry wells, conveyances, high priority areas *MCM 5:* High priority existing post-construction storm water management controls, all new (post 2017) storm water management controls *MCM 6:* Location of permittee owned facilities and known activities that have the ability to release contaminants to the MS4	Sept 2018 (completed)
3. Desktop analysis and interviews	Review available hard-copy and digital data and interview field staff to create preliminary base map. Identify areas and data to be gathered during field investigation.	Nov 2018 to Apr 2019 (completed)
4. Submit preliminary map to DEQ	Results of desktop analysis with description of upcoming field investigation will be submitted with 2018 annual report	Mar 2019 (completed)
5. Field investigation (phase 1)	County and/or consultant staff will collect storm water inventory data using handheld GPS units. Use of intern(s) will be considered to maximize efficient use of funds. GPS data will be GIS compatible for integration with the County's GIS mapping platform.	May 2019 to Aug 2019 (completed)
6. Field data analysis (phase 1)	Field data will be added to the preliminary base map by County or consultant staff. Preliminary high priority areas will be identified. Additional field investigation needs will be identified, if necessary.	Sept 2019 to Apr 2020 (completed)
7. Submit updated map to DEQ	Results of phase 1 field investigation will be submitted with 2019 annual report. Description of upcoming field investigation will also be provided (if necessary).	Mar 2020 (completed)
8. Field investigation (phase 2) (if necessary)	County and/or consultant staff will collect remaining items for storm water inventory data.	June 2020 to Aug 2020
9. Field data analysis (phase 2) (if necessary)	Field data will be added to the base map by County or consultant staff. High priority areas will be updated.	Sept 2020 to Apr 2021
10. Submit completed map to DEQ	Results of phase 2 field investigation will be submitted with 2020 annual report.	Mar 2021

In 2019, the SWMP team performed the phase 1 field investigation and data analysis to identify and map storm sewer features associated with the County's MS4. The primary objectives of the investigation were to:

- Identify all known County MS4 outfalls;
- Identify all known surface waters flowing through the County's MS4 area;
- Identify all known surface waters that receive discharges from the County's MS4 outfalls;
- Identify all known storm sewer system components in the County's MS4 area;

- Identify all known post-construction storm water management facilities;
- Identify/designate high priority areas; and,
- Document all data in an organized GIS database.

Field activities occurred between June and August of 2019. During that time period, field personnel walked and drove approximately 120 miles within accessible public right-of-way (ROW) limits and spent approximately 270 hours in the field collecting data. In total, 2,265 storm sewer system features were identified, mapped, and stored in an ArcGIS Online inventory database. Updated storm water sewer inventory maps and additional details on the field investigation are documented in the *2019 Field Investigation Summary Report* provided in Appendix D and a brief summary of the results is provided in Table 3-4.

Table 3-4. 2019 Storm Water Field Investigation Results Summary

Storm Sewer Features	Types of Facilities		Number of Features Identified
Outfalls	▪ Culvert ▪ Storm Sewer	▪ Open Channel	58
Surface Waters	▪ Stream ▪ Lake ▪ Pond	▪ Reservoir ▪ Irrigation ▪ Drainage System	139
Open Conveyances	▪ Swale ▪ Ditch	▪ Valley Gutter ▪ French Drain	698
Closed Conveyances	▪ Culvert	▪ Storm Sewer	746
Inlets, Manholes, Drywells	▪ Inlet	▪ Manhole	521
Post-Construction Facilities	▪ Infiltration Basin ▪ Bioretention ▪ Permeable Pavement ▪ Dispersion ▪ Biofiltration Swale	▪ Extended Detention Basin ▪ Wet Detention Basin ▪ Proprietary Treatment Device ▪ Drywell ▪ Other	91
High Priority Areas	▪ N/A		12
		Total Number of Features Identified	*2,265*

The results of the phase 1 field investigation are preliminary because there are several items that need to be reviewed and addressed by the SWMP team prior to finalizing the inventory. The SWMP team will coordinate a meeting in March of 2020 to review and evaluate the results. The outcome of the meeting will identify key tasks for the phase 2 field investigation which is expected to occur between June and August of 2020. Once the phase 2 investigation is finished, a completed map and updated database will be submitted with the 2020 annual report.

3.2.4 Illicit Discharge Prohibitions

The County is working to establish legal authority through either a storm water ordinance or other regulatory mechanism to prohibit illicit discharges and illicit connections. In 2019, the SWMP team conducted an ordinance-related research investigation and met with DEQ to evaluate potential solutions to establish legal authority. As a result, the County developed a plan to address ordinance and regulatory-related requirements (see Appendix I) and identified the following solutions to pursue in 2020:

1. Develop a water quality district and associated water quality ordinances.

2. Adopt new rules and regulations through RiverStone Board of Health.
3. Update and/or revise the County Sanitation and Subdivision regulations.

The SWMP team will pursue these solutions by developing an illicit discharge prohibition plan. The plan will describe applicable permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution. The SWMP team will discuss this plan with the County Commissioners in the spring of 2020 to determine a preferred solution. The comprehensive plan, preferred solution, and feedback from the County Commissioners will be included with the 2020 annual report. Additionally, the County will coordinate with the City of Billings and Montana Department of Transportation (MDT) to determine appropriate methods for detecting and eliminating illicit discharges that may originate within respective MS4 boundaries. If applicable, any formal agreements will be documented and added to this SWMP.

Per Part II.A.3.d of the General Permit, the County developed a formal enforcement response plan (ERP) for illicit discharges and connections in 2019 and will work towards implementing the plan in 2020. The ERP describes the limited response and enforcement procedures currently available for County personnel to use when addressing suspected illicit discharges and connections. Additional response and enforcement procedures will be incorporated as the County establishes legal authority. The flow chart below depicts the process used to develop the ERP and a copy of the ERP is provided in Appendix H.

Figure 3-2. Summary of ERP Development Process

3.2.5 Outfall Inspections

Per Part II.A.3.e of the General Permit, the SWMP team is in the process of inspecting and screening all County MS4 outfalls during dry weather. As discussed in Section 3.2.3, the County is in the process of identifying and locating its outfalls. The SWMP team began dry weather inspections in 2019 for a portion of the identified outfalls. The results of these inspections are summarized in Table 3-5 and Appendix D. The completed inspection forms can be provided upon request. High priority areas will be designated as the outfall inspections continue through the remainder of the permit term. Priority areas will be determined by considering factors such as water quality impacts, characteristics of the drainage area, age of the conveyance systems, and discharges to sensitive waterbodies.

Table 3-5. Dry-Weather Outfall Inspection Progress

Category	2019	2020	2021
Number of Outfalls Inspected	20		
Number of Illicit Discharges Identified	0[1]		
Number of High Priority Outfalls Inspected	0		
Percentage of Outfalls Inspected During Permit Term	35		

[1] Three potential illicit discharges were identified. An investigation of these outfalls will be conducted in 2020 per the Illicit Discharge Investigation and Corrective Action Plan described in Section 3.2.6.

3.2.6 Illicit Discharge Investigations

Per Part II.A.3.f of the General Permit, the County developed an Illicit Discharge Investigation and Corrective Action Plan in 2019 and will work towards implementing the plan in 2020. The plan describes the investigation procedures and corrective actions to be used by County personnel when tracking, investigating, and correcting illicit discharges. These procedures are based on the County's limited authority to implement IDDE General Permit requirements. Additional procedures and corrective actions will be incorporated as the County establishes legal authority. A copy of the current plan is provided in Appendix D.

3.3 MCM 4: Construction Site Storm Water Management

Construction sites are often considered a significant source of pollutants that have a high potential for discharging to local waterbodies. The primary pollutant of concern associated with active construction sites is sediment. Part II.A.4 of the General Permit requires the County to develop, implement, and enforce a program to reduce pollutants in storm water runoff that discharge to the MS4 from construction sites. The following sections describe the primary elements of the County's construction site storm water management program.

Elements of Construction Storm Water Management Program

- ☐ Ordinance or Regulatory Mechanism
- ☐ Plan Review and Approval Process
- ☐ Construction Site Inspections
- ☐ Program Enforcement

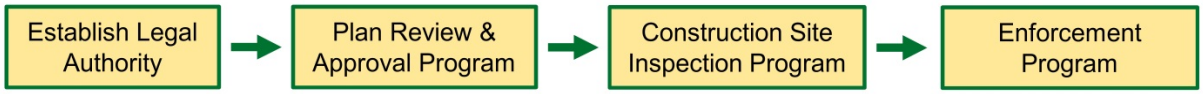
Figure 3-3. Example of Proper Construction BMP
Source: HDR, Inc.

Figure 3-4. Example of Poor Construction BMP

NOTE: *The following sections outline Yellowstone County's plan for developing a construction site storm water management program. Implementation of this program is dependent upon the County's ability to establish legal authority through a storm water ordinance or other regulatory mechanism which is currently being evaluated. Progress towards establishing legal authority is discussed in Section 3.3.2.*

3.3.1 Construction Program Overview

The County is working to develop a construction site storm water management program. The program will consist of establishing legal authority, implementing a plan review and approval process, performing construction site inspections, and enforcing the primary requirements of the program. The flow chart shown below depicts the process to develop this program.



The following sections describe the County's plan to develop, implement, and maintain these elements of the construction site storm water management program.

3.3.2 Construction Program Legal Authority

The County is working to establish legal authority through either a storm water ordinance or other regulatory mechanism to enforce the construction storm water management program. In 2019, the SWMP team conducted an ordinance-related research investigation and met with Montana DEQ to evaluate potential solutions to establish legal authority. As a result, the County developed a plan to address ordinance and regulatory-related requirements (see Appendix I) and identified the following solutions to pursue in 2020:

1. Revise the County Subdivision regulations to include construction storm water requirements.
2. Revise the County Zoning regulations to include construction storm water requirements.
3. Consider the development of a County Public Works Manual.
4. Consider increasing zoned areas to include the entire MS4 area.

The SWMP team will pursue these solutions by developing a construction storm water control requirement plan. The plan will describe applicable permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution. The SWMP team will discuss this plan with the County Commissioners in the spring of 2020 to determine a preferred solution. The comprehensive plan, preferred solution, and feedback from the County Commissioners will be included with the 2020 annual report.

3.3.3 Plan Review and Approval

Per Part II.A.4.b of the General Permit, the County is required to develop and implement a plan review and approval process to verify that regulated construction projects are locating and designing construction storm water BMPs. In 2020, the County will develop the framework for this process by addressing the following components:

- Identify submittal requirements (i.e., constructions plans, project-specific storm water pollution prevention plan (SWPPP), applicable permit documentation, etc.)
- Identify personnel responsible for performing plan reviews and approvals
- Develop descriptions of responsibilities when performing a plan reviews and approvals
- Define timeframe for performing a plan review and approval

The SWMP team will discuss this process with the County Commissioners and solicit feedback from applicable departments. As the process becomes fully developed, all documentation will be added to this SWMP and submitted with each annual report.

3.3.4 Inspection Program

Elements of Inspection Program

- ☐ Standardized Inspection Form
- ☐ Project Inventory List
- ☐ Inspection Frequency Protocol
- ☐ Field Inspection Staff

As part of the ordinance or regulatory mechanism, the County must have the authority to inspect storm water pollution control measures associated with all regulated construction projects. The SWMP team will begin to develop the construction site storm water inspection program in 2020. This program will consist of the following elements in order to comply with Part II.A.4.c of the General Permit:

1. A standardized inspection form. A draft inspection form is provided in Appendix E.

2. An inventory of construction projects within the County that are covered under the Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity. The project inventory will document the following information:
    a. The project's associated authorization number.
    b. The geographic location, size, and topography of the project.
    c. The proximity to receiving waterbodies.
3. An inspection frequency protocol based upon the priority of the project. A draft inspection frequency determination worksheet is provided in Appendix E. At a minimum, the inspection frequency protocol will include the following requirements for high priority projects:
    a. One inspection at the beginning of construction.
    b. One inspection within 48-hours after each rain event of 0.25 inches or greater.
    c. One inspection within 48-hours after each occurrence of runoff from snowmelt due to thawing conditions that cause's visible surface erosion at the site.
    d. One inspection at the conclusion of the project prior to finalization.
4. County personnel that are trained and qualified to inspect construction storm water management controls.

This program is still in the development phase. The SWMP team will develop the framework for this program and solicit feedback from the County Commissioners and applicable departments. As the program becomes fully developed, all documentation will be added to this SWMP and submitted with each annual report.

3.3.5 Enforcement

Per Part II.A.4.a of the General Permit, the County developed a formal ERP for construction site storm water management in 2019 and will work towards implementing the plan in 2020. Since the County has limited authority, the ERP describes the response and enforcement procedures currently available for County personnel to use when addressing construction storm water concerns. Additional response and enforcement procedures will be incorporated as the County establishes legal authority. An enforcement response flowchart is shown in Figure 3-5 and a copy of the current ERP is provided in Appendix H. The primary elements of this plan include identifying the violation, determining an appropriate level of response, implementing the appropriate level of response, following up with the violator, and closing the complaint.

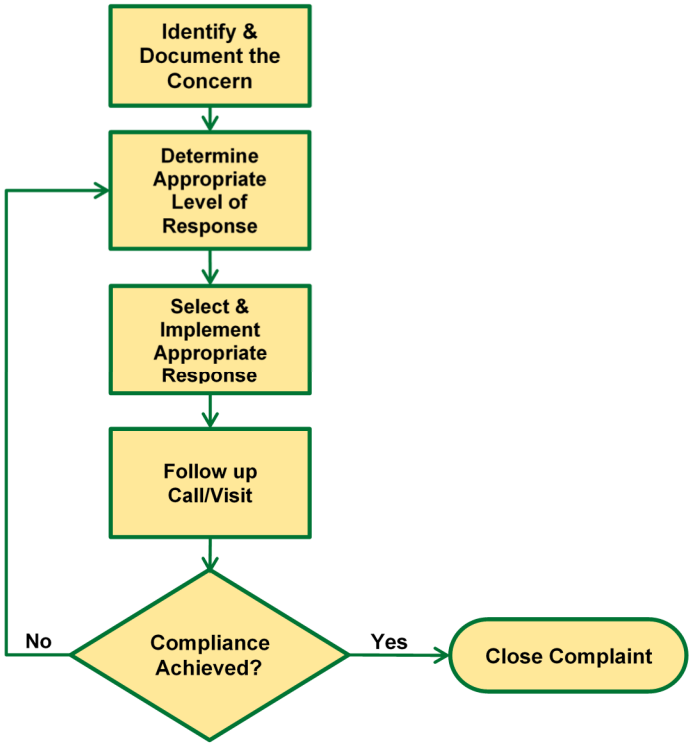


Figure 3-5. Enforcement Response Flowchart for Construction Site Storm Water

3.4 MCM 5: Post-Construction Site Storm Water Management in New and Redevelopment

Elements of Post-Construction Storm Water Management Program

- ☐ Ordinance or Regulatory Mechanism
- ☐ Plan Review and Approval Process
- ☐ Post-Construction BMP Inspections
- ☐ Program Enforcement

Post-construction storm water management refers to implementing and maintaining long-term storm water management controls in order to prevent or minimize water quality impacts. Examples of post-construction storm water BMPs include extended detention basins, infiltration basins, biofiltration swales, and bioretention areas. Per Part II.A.5 of the General Permit, the County will develop, implement, and enforce a program that addresses storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre. This requirement also includes projects that are less than one acre but part of a larger common plan of development or sale. The following sections describe the primary elements of the County's post-construction storm water management program.

Figure 3-6. Example Infiltration Basin

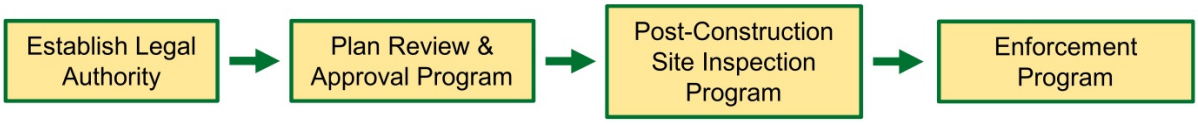
Figure 3-7. Example Bioretention Area

Source: Montana Post-Construction Storm Water BMP Design Guidance Manual

NOTE: *The following sections outline Yellowstone County's plan for developing a post-construction site storm water management program. Implementation of this program is dependent upon the County's ability to establish legal authority through a storm water ordinance or other regulatory mechanism which is currently being evaluated. Progress towards establishing legal authority is discussed in Section 3.4.2.*

3.4.1 Post-Construction Program Overview

The County is working to develop a post-construction storm water management program. The program will consist of establishing legal authority, implementing a plan review and approval process, performing post-construction site inspections, enforcing the primary requirements of the program, and developing a plan to facilitate future discussions on low-impact development (LID). The flow chart shown below depicts the process to develop this program.



The following sections describe the County's plan to develop, implement, and maintain these elements of the post-construction storm water management program.

3.4.2 Post-Construction Program Legal Authority

The County is working to establish legal authority through either a storm water ordinance or other regulatory mechanism to enforce the post-construction storm water management program. In 2019, the SWMP team conducted an ordinance-related research investigation and met with Montana DEQ to evaluate potential solutions to establish legal authority. As a result, the County developed a plan to address ordinance and regulatory-related requirements (see Appendix I) and identified the following solutions to pursue in 2020:

1. Revise the County Subdivision regulations to include post-construction storm water requirements.
2. Revise the County Zoning regulations to include post-construction storm water requirements.
3. Consider the development of a County Public Works Manual.
4. Consider increasing zoned areas to include the entire MS4 area.

The SWMP team will pursue these solutions by developing a post-construction storm water control requirement plan. The plan will describe applicable General Permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution. The SWMP team will discuss this plan with the County Commissioners in the spring of 2020 to determine a preferred solution. The comprehensive plan, preferred solution, and feedback from the County Commissioners will be included in the 2020 annual report.

3.4.3 Plan Review and Approval

Per Part II.A.5.b of the General Permit, the County is required to develop and implement a plan review and approval process to verify that post-construction BMPs are incorporated and adequately designed. In 2020, the SWMP team will develop the framework for this process by addressing the following components:

- Develop submittal requirements (e.g., drainage report, storm water calculations, construction plans, operation and maintenance plans, etc.)
- Identify personnel responsible for performing plan reviews and approvals
- Develop description of responsibilities when performing a plan review and approval
- Define timeframe for performing a plan review and approval

The SWMP team will discuss this process with the County Commissioners and solicit feedback from applicable departments. As the process becomes fully developed, all documentation will be added to this SWMP and submitted with each annual report.

3.4.4 Inspection Program

Elements of Inspection Program

- ☐ Standardized Inspection Forms
- ☐ BMP Inventory List
- ☐ Inspection Frequency Protocol
- ☐ Field Inspection Staff

As part of the ordinance or regulatory mechanism, the County must have the authority to inspect post-construction storm water management BMPs. The SWMP team will begin to develop the post-construction storm water inspection program in 2020. The program will consist of the following elements in order to comply with Part II.A.5.c of the General Permit:

1. A standardized inspection form will be used during site inspections for applicable post-construction BMPs. Draft inspection forms will be based upon the BMP inspection forms located in Appendix F of the *Montana Post-Construction Storm Water BMP Design Guidance Manual (September 2017).*
2. An updated inventory of new County-owned and private post-construction BMPs.

3. An updated inventory of existing County-owned and private post-construction BMPs in high priority areas.
4. An inspection frequency protocol based on the priority of the project. A draft inspection frequency determination worksheet is provided in Appendix F. At a minimum, the inspection frequency protocol will include the following requirements for high priority projects:
    a. Inspect County-owned post-construction BMPs annually.
    b. Inspect or have inspected privately-owned post-construction BMPs annually.
5. County personnel that are trained and qualified to inspect post-construction storm water management controls.

This program is still in the development phase. The SWMP team will develop the framework for this program and solicit feedback from the County Commissioners and applicable departments. As the program becomes fully developed, all documentation will be added to this SWMP and submitted with each annual report.

3.4.5 Enforcement

Per Part II.A.5.a of the General Permit, the County developed a formal ERP for post-construction site storm water management in 2019 and will work towards implementing the plan in 2020. The primary elements of this plan include identifying the concern, determining an appropriate level of response, implementing the appropriate level of response, following up with the responsible party, and closing the complaint. Since the County has limited authority, the ERP describes the response and enforcement procedures currently available for County personnel to use when addressing post-construction storm water concerns. Additional response and enforcement procedures will be incorporated as the County establishes legal authority. An enforcement response flowchart is shown in Figure 3-8 and a copy of the current ERP is provided in Appendix H.

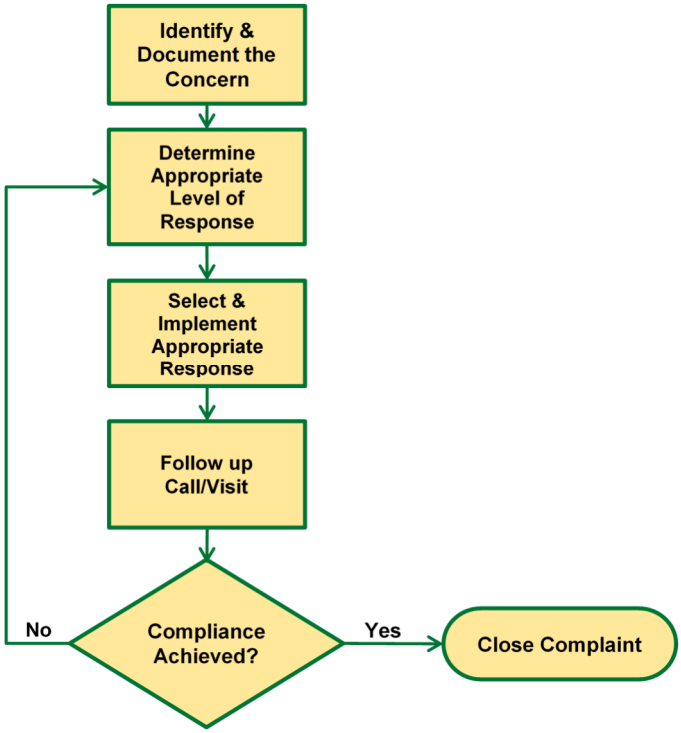


Figure 3-8. Enforcement Response Flowchart for Post-Construction Storm Water

3.4.6 Low-Impact Development Considerations

Per Part II.A.5.d of the General Permit, the County will convene appropriate staff in 2020 and discuss the use of LID infrastructure. The County will review applicable codes, ordinances, and policies that may deter or prevent the use of LID infrastructure and identify opportunities for change. A summary of the discussion will be submitted with the 2020 annual report.

3.5 MCM 6: Pollution Prevention/Good Housekeeping for Permittee Operations

Elements of Pollution Prevention and Good Housekeeping Operations
☑ Facility and Activity Inventory ☐ Facility and Activity SOPs (in progress) ☐ Internal Storm Water Pollution Prevention Training

The County owns and operates various types of facilities within the MS4 boundary. Per Part II.A.6.a of the General Permit, the County is continuing to develop and implement an operation and maintenance program for County-owned and operated facilities. The program has three primary elements:

1. An inventory of County-owned and operated facilities and activities that have the potential to release pollutants.
2. Standard operating procedures (SOPs) for facilities and activities that identify storm water pollution prevention controls.
3. A program to conduct annual storm water pollution prevention training for all County staff directly involved with implementing the SOPs.

In 2019, the County developed the foundation for this program by creating an inventory of County-owned and operated facilities and the associated activities that have the potential to release pollutants. Additionally, the County developed four SOPs to be implemented with this program. Details on the inventory and SOPs are described in the *Pollution Prevention/Good Housekeeping for Permittee Operations* document provided in Appendix G.

4 Training

Part II.B of the General Permit requires the County to conduct training for SWMP team members and County staff who conduct activities associated with the SWMP. The following sections describe the County's MS4 training program and activities.

4.1 Storm Water Management Team Training

Matt Peterson presented Microsoft PowerPoint presentation (training) that summarized the General Permit requirements and provided an overview of the 2019 SWMP update on April 10, 2019. The training attendees are listed in Table 4-1. Additionally, this training will be provided to all new SWMP team member hires within the first 90 days of hire date.

Table 4-1. SWMP Team Training Attendees

Name	Position/Responsibilities
Tim Miller	Public Works Director
Mike Black	Engineer/Primary SWMP Coordinator
Darin Swenson	Engineer/Assistant MS4 Coordinator
Matt Peterson (NewFields)	Engineer/SWMP Development & Project Management

Name	Position/Responsibilities
Stephanie Griffin (HDR)	Environmental Specialist/SWMP Development
Melissa Widseth (HDR)	Coordinator/Public Education & Outreach
Spencer Savage (HDR - phone)	Engineer/SWMP Development

4.2 Storm Water Awareness Training for Field and Facilities Staff

Storm water awareness training is required during the first and fourth permit years for all appropriate County field staff and staff who work at County facilities. The trainings provide education regarding storm water impacts, the MS4 permit, the detection and elimination of illicit discharges and the implementation of the ERP, and specifically addresses BMPs necessary to minimize discharges of pollutants during permittee activities or the operation of permittee facilities.

4.2.1 First Year Training

First year training took place on March 21st, 2019 (during the third permit year). The staff members listed in Table 4-2 watched the video presentation developed by Excal Visual, inc. titled *Municipal Storm Water Pollution Prevention: Storm Watch*. The video focused on BMPs such as good housekeeping, spill response, materials storage and handling, landscape maintenance, and street maintenance. This training did not cover the ERP for illicit discharges because the ERP has yet to be developed.

Table 4-2. Storm Water Awareness Training Attendees

Name	Position/Responsibilities
Tim Miller	Public Works Director
Mike Black	Engineer/Primary SWMP Coordinator
Clay Moore	Assistant Road & Bridge Director
Bob Hillard	Sign Technician
Darin Swenson	Engineer/Assistant MS4 Coordinator
Mike Schieno	Junk Vehicle & Code Enforcement Supervisor

4.2.2 Fourth Year Training

A second, more comprehensive, storm water awareness training will be conducted in 2020, in accordance with the 4th year General Permit requirement. This training will include training on the current ERP for illicit discharges, which was developed in 2019. Since the County is working to establish legal authority and further develop the IDDE program, there is the potential for the current ERP to be updated to include additional enforcement procedures. If necessary, a follow-up training session will be scheduled to discuss revisions and updates.

4.2.3 New Hire Training

All applicable new hires will receive storm water awareness training, as described above, within the first 90 days of hire date.

4.3 Construction Site Storm Water Management Training

Construction site training is required during the first and fourth permit years for all inspectors and plan reviewers responsible for implementation of the Construction Storm Water Management in New Development and Redevelopment minimum measure. At a minimum, the training must include inspection protocol and implementation of the ERP.

4.3.1 First Year Training

The Primary SWMP Coordinator, Mike Black, attended a construction storm water management training coordinated by Montana DEQ and Altitude Training Associates on October 17-18, 2018.

4.3.2 Fourth Year Training

A second, more comprehensive, construction site storm water management training will be conducted in 2020 for all construction site storm water inspectors and plan reviewers in accordance with the 4th year General Permit requirement. This training will include training on the current ERP for construction site storm water management, which was developed in 2019. Since the County is working to establish legal authority and further develop the construction site storm water program, there is the potential for the current ERP to be updated to include additional enforcement procedures. If necessary, a follow-up training session will be scheduled to discuss revisions and updates.

4.3.3 New Hire Training

All applicable new hires will receive construction site storm water management training within the first 90 days of hire date.

4.4 Post-Construction Storm Water Management Training

Post-construction training is required during the first and fourth permit years for all inspectors and plan reviewers responsible for implementation of the Post-Construction Storm Water Management in New Development and Redevelopment minimum measure. At a minimum, the training must include inspection protocol and implementation of the ERP. This section describes the County's approach to post-construction storm water management training.

4.4.1 First Year Training

First year training was conducted on December 18th, 2018 (during the second permit year). The County's post-construction storm water plan review and inspection program was not yet developed; therefore, the training provided a broader understanding of the General Permit's post-construction program requirements, including:

- Summary of MCM 5 permit requirements
- Overview of the Montana Post-Construction Storm Water BMP Design Guidance Manual
- Development design example, including post-construction BMP selection and design
- Inspection guidance
- Mock inspection of a hydrodynamic separator and dry detention basin in a City of Billings subdivision

Training on the ERP was not included because the Post-Construction Storm Water ERP had not yet been developed. City of Billings staff also participated in the training. The County's attendees are listed in Table 4-3. The training materials are provided in Appendix I.

Table 4-3. Post-Construction Plan Reviewers and Inspectors MCM 5 Training Attendees

Department	Position/Responsibilities
Tim Miler	Public Works Director
Mike Black	Primary SWMP Coordinator
Darin Swenson	Assistant MS4 Coordinator

4.4.2 Fourth Year Training

A second, more comprehensive, MCM 5 inspector and plan reviewer training will be conducted in 2020, in accordance with the fourth year General Permit requirement. This training will include training on the post-construction ERP, which was developed in 2020. Since the County is working to establish legal authority and further develop the post-construction storm water program, there is the potential for the current ERP to be updated to include additional enforcement procedures. If necessary, a follow-up training session will be scheduled to discuss revisions and updates.

4.4.3 New Hire Training

All applicable new hires will receive post-construction storm water management training within the first 90 days of hire date.

4.5 Pollution Prevention Standard Operating Procedure Training

Per Part II.A.6.a of the General Permit, the SWMP team will train applicable staff on the SOPs discussed in Section 3.5. Applicable staff to be trained will include storm water staff responsible for implementing the SOPs and staff that are involved with SOP-specific duties. Additionally, new storm water staff responsible for implementing SOPs will receive training within 90 days of hire. The proposed schedule for SOP training is summarized in the *Pollution Prevention/Good Housekeeping for Permittee Operations* document that is provided in Appendix G.

5 Storm Water Management for Discharges to Impaired Waterbodies

Per Part III.A of the General Permit, the County is developing strategy to manage storm water that discharges to impaired waterbodies. The County currently discharges to three waterbodies that are listed as impaired but do not have an approved total maximum daily load (TMDL). The following sections provide an inventory of impaired waterbodies, the pollutants of impairment, and the BMPs that will be used to target and reduce pollutant of impairments.

5.1 Impaired Waterbody Inventory

Table 5-1 provides a summary of these impaired waterbodies along with their pollutants of impairment. The waterbodies and the County's outfalls are shown on the storm sewer inventory maps that are documented in the *2019 Field Investigation Summary Report* provided in Appendix D.

Table 5-1. Yellowstone County MS4 Impaired Waterbodies

Waterbody	Location	Impaired	Approved TMDL	MS4 WLA	Impairment(s)
Yellowstone River	City of Laurel PWS to City of Billings PWS	Yes	No	No	▪ Chlorophyll-a ▪ Nitrate-Nitrite ▪ Oil and Grease ▪ Other anthropogenic substrate alterations ▪ Physical substrate habitat alterations
Yellowstone River	City of Billings PWS to Huntley Diversion Dam	Yes	No	No	▪ Algae ▪ Arsenic ▪ Benthic Macroinvertebrates ▪ Dissolved Oxygen ▪ Eutrophication ▪ Oil and Grease ▪ Periphyton (Aufwuchs) Indicator Bioassessments ▪ Sediment
Canyon Creek	Highway 532 to mouth	Yes	No	No	▪ Flow Regime Modification

As discussed in Section 3.2.3, the County is in the process of reviewing and finalizing the storm water sewer inventory. In 2019, the SWMP team developed a revised list of outfalls as documented in the *2019 Field Investigation Summary Report* and shown on the storm sewer inventory maps provided in Appendix D. These outfalls are provisional and based on the results of the 2019 field investigation. The list will be reviewed in 2020 and revised if necessary following a data validation analysis. The County's plan for completion of an outfall inventory is described in Section 3.2.3.

A provisional list of outfalls that discharge to impaired waterbodies is provided in Table 5-2. This list will be updated, if necessary, following a data validation analysis in 2020.

Table 5-2. Yellowstone County MS4 Outfalls Discharging to Impaired Waterbodies[1,2]

Outfall ID	Coordinates	Receiving Waterbody
SW-OF-001	45.72974167, -108.61980278	Canyon Creek
SW-OF-002	45.7297834, -108.61934167	Canyon Creek
W-I90-OF-003	45.79705278, -108.4706	Yellowstone River
W-I90-OF-004	45.796875, -108.4707694	Yellowstone River
W-I90-OF-005	45.7953805, -108.47162	Yellowstone River
W-I90-OF-007	45.8084056, -108.4615	Yellowstone River

[1] The outfalls listed in this table are provisional, based on a desktop analysis and field investigation conducted in 2019. The outfall list will be verified and updated (if necessary) following an ownership and data validation analysis in 2020.
[2] Only outfalls discharging to impaired waterbodies are identified in this table. A full list of outfalls is provided in Appendix D.

5.2 Addressing Pollutants of Impairment

This section discusses BMPs that were implemented in 2019 and the BMPs planned for the coming year to target and reduce discharges of identified pollutants of impairment to the Yellowstone River. A summary of BMPs is provided in Table 5-3 and a detailed discussion for each pollutant of impairment is provided in the following sections.

Table 5-3. Pollutants of Impairment to be Targeted with BMPs

Impairment	Aligning Parameter from Table 1 in General Permit [1]	Impaired Waterbody	BMP(s)
Nitrate-Nitrite	Total Nitrogen	Yellowstone River, City of Laurel PWS to City of Billings PWS	See Section 5.2.1
Oil and Grease	Oil and Grease	Yellowstone River, City of Laurel PWS to City of Billings PWS Yellowstone River, City of Billings PWS to Huntley Diversion Dam	See Section 0
Dissolved Oxygen	Chemical Oxygen Demand	Yellowstone River, City of Billings PWS to Huntley Diversion Dam	See Section 0
Sediment	Total Suspended Solids	Yellowstone River, City of Billings PWS to Huntley Diversion Dam	See Section 5.2.4

[1] Only the identified pollutants of impairment that align with Table 1 in Part IV of the General Permit are included

5.2.1 Total Nitrogen

The table below outlines the possible contributors, selected BMPs, and the rationale for BMP selection to target and reduce total nitrogen.

Possible Contributor	BMPs Implemented in 2019	BMPs Planned for 2020	Rationale
Residential Yard Maintenance	▪ Educational flier ▪ Storm water website	▪ Implement public outreach plan	Distributed educational and awareness material facilitates behavioral change.
Construction Activities	▪ Educational flier	▪ MCM 4 Training[1] ▪ Plan review and approval[1] ▪ Site inspections[1] ▪ IDDE ERP	Public messages, industry training, and plan review and approval verify storm water BMPs are incorporated. Site inspections verify BMPs are installed, operated, and maintained. IDDE ERP enforces SWMP requirements.
Municipal Facilities and Activities	▪ Outfall inspections	▪ SOP Training ▪ Implementing SOPs ▪ IDDE ERP	Internal training and implementing SOPs encourage behavioral change. Outfall inspections and the IDDE ERP verify and control illicit discharges within the MS4.

[1]BMP will be implemented after it is developed, likely in 2020 or 2021

5.2.2 Oil and Grease

The table below outlines the possible contributors, selected BMPs, and the rationale for BMP selection to target and reduce oil and grease.

Possible Contributor	BMPs Implemented in 2019	BMPs Planned for 2020	Rationale
Construction Activities	▪ Educational flier	▪ MCM 4 Training[1] ▪ Plan review and approval[1] ▪ Site inspections[1] ▪ IDDE ERP	Industry training and plan review and approval verify storm water BMPs are incorporated. Site inspections verify BMPs are installed, operated, and maintained. IDDE ERP enforces SWMP requirements.
Municipal Facilities and Activities	▪ Outfall inspections	▪ SOP Training ▪ Implementing SOPs[1]	Internal training and implementing SOPs encourage behavioral change. Outfall inspections verify and control illicit discharges within the MS4.
Automotive Maintenance	▪ Educational flier ▪ Storm water website ▪ Outfall inspections	▪ IDDE ERP ▪ Outfall inspections	Distributed storm water educational and awareness material encourages behavioral change. Outfall inspections and the IDDE ERP verify and control illicit discharges within the MS4.

[1]BMP will be implemented after it is developed, likely in 2020 or 2021

5.2.3 Chemical Oxygen Demand

The water quality improvements and target BMPs addressed in Section 5.2.1 will result in improved chemical oxygen demand and dissolved oxygen concentrations. Therefore, the chemical oxygen demand and dissolved oxygen concentrations will improve by incorporating the BMPs for total nitrogen.

5.2.4 Total Suspended Solids

The table below outlines the possible contributors of total suspended solids selected BMPs, and the rationale for BMP selection to target and reduce total suspended solids.

Possible Contributor	BMPs Implemented in 2019	BMPs Planned for 2020	Rationale
Construction Activities	▪ Educational flier	▪ MCM 4 Training ▪ Plan review and approval[1] ▪ Site inspections[1]	Industry training and plan review and approval verify that storm water BMPs are incorporated. Site inspections verify that BMPs are installed, operated, and maintained.
Municipal Facilities and activities	▪ Outfall inspections	▪ SOP Training ▪ Implementing SOPs[1] ▪ Outfall inspections ▪ IDDE ERP	Internal training and implementing SOPs encourages behavior change. Outfall inspections and the IDDE ERP verify and control illicit discharges within the MS4.
Residential Neighborhoods	▪ Educational flier ▪ Storm water website ▪ Outfall inspections	▪ Implement public outreach plan	Distributed storm water educational and awareness material encourages behavioral change. Outfall inspections verify and control illicit discharges within the MS4.

[1]BMP will be implemented after it is developed, likely in 2020 or 2021

6 Self-Monitoring

The County is required to collect storm water samples on a semi-annual basis at four locations for the following parameters:

- Sediment (Total Suspended Solids)
- Nutrients (Total Nitrogen, Total Phosphorus)
- Metals (Copper, Lead, Zinc)
- Oils and Grease
- pH
- Organics (Chemical Oxygen Demand)
- Water Temperature

The County selected Monitoring Option 1 as outlined in the General Permit. Two sampling locations represent storm water runoff from predominantly residential areas and the other two locations represent storm water runoff from predominantly commercial/industrial areas. The monitoring locations are shown on the storm sewer inventory maps provided in Appendix D. The following table describes the monitoring locations, land use correlations, and naming for each location. The County may re-evaluate these monitoring locations after the storm water sewer inventory is complete.

Table 6-1. Self-Monitoring Location Summary

Monitoring Site ID	Residential/ Commercial	Lat/Long	Receiving Waterbody	Description
001A	Primarily Commercial	45.7945 -108.484	Yellowstone River	Grab sample from automated sampler equipment in manhole
001B	Primarily Commercial	45.813 -108.413	Yellowstone River	Sample direct from catch basin
002A	Primarily Residential	45.795 -108.445	Yellowstone River	Bucket sampler in channel
002B	Primarily Residential	45.798 -108.443	Yellowstone River	

The County collected storm water samples at monitoring site 001B and 002B during the 2019 second half sampling period. Each sample was analyzed by an accredited laboratory and a summary of the monitoring results including the calculated long-term median is provided in Appendix K. Site 002B was collected in December of 2019 and had higher concentrations of TSS, TP, Copper, and Lead. Site 001B was collected in October of 2019 and had higher concentrations of TN, Zinc, and Organics (COD) as well as a higher pH and water temperature. Neither of the monitoring results had a pH that was outside the range of 6.0 and 9.0 standard units.

Since site 002B was sampled in December of 2019, the high concentrations of TSS could be the result of winter street operations. Additionally, the higher concentrations of TN and Organics at Site 002B could be the result of leaves, grass, or other landscaping debris that entered the storm sewer system from the adjacent commercial area. The County will consider implementing BMPs in 2020 to address these high concentrations and improve the quality of storm water discharges.

7 Reporting

Per Part IV.F of the General Permit, the County will submit a completed Annual Report form, an updated version of this SWMP, and any relevant documents to DEQ by March 1st of each year of the General Permit term.

8 SWMP Inspection Response Progress

As previously mentioned, the County has been working to address permit violations and all General Permit requirements. The County developed a regulatory compliance plan and schedule in September 2018 that outlined SWMP development tasks and the expected completion dates. Since then, the County has made progress on these tasks by completing the following:

- Comprehensive update to the County SWMP document
- Development of the Public Education and Outreach Program
- Researched and identified solutions to address ordinance and regulatory-related requirements
- Comprehensive update to storm water sewer inventory
- Conducted storm water training activities for County personnel
- Development of the Pollution Prevention/Good Housekeeping Program

The County will continue to address permit violations and to further develop the SWMP throughout the remainder of the permit term. A progress update is provided in Table 8-1.

Table 8-1. Regulatory Compliance Schedule

Task	Permit Section	Scheduled Completion Date	Progress Update
Contract with HDR Engineering, Inc. to assist with initial audit response and develop compliance plan	N/A	N/A	Complete
Issue RFP to hire a consultant to develop and implement components of our SWMP for 2019-2021	N/A	October 1, 2018	Complete
Contract with consultant to develop and implement components of our SWMP for 2019-2021	N/A	October 31, 2018	Complete

Task	Permit Section	Scheduled Completion Date	Progress Update
Develop revised SWMP team org chart that identifies positions responsible for implementing each MCM	Part II.A - SWMP	December 31, 2018	Complete See Section 1.2.1
Establish SWMP team meeting schedule and SWMP file sharing system	Part II.A - SWMP	December 31, 2018	Complete See Section 1.2.2
Develop comprehensive General Permit and SWMP training for County SWMP team	Part II.B – Training	March 1, 2019	Complete See Section 4.1
Conduct new General Permit and SWMP training for County SWMP team	Part II.B – Training	March 29, 2019	Complete See Section 4.1
Purchase storm water awareness training DVD through Excal Visual, Inc. and develop training documentation materials	Part II.B – Training	November 31, 2018	Complete (Borrowed video from City of Billings)
Conduct storm water awareness training for County field staff & staff who work at permittee facilities	Part II.B – Training	December 31, 2018	Complete See Section 4.2
Conduct training for inspectors and plan reviewers responsible for MCM 5 implementation	Part II.B – Training	November 30, 2018	Complete See Section 4.4
Investigate opportunities and coordinate with other entities to develop plans for sharing responsibility to fulfill permit requirements. This will be conducted as the revised SWMP is being developed.	Part II.C - Sharing Responsibility	February 1, 2019	Complete See Section 1.3
Develop and provide documentation of formal agreements with other entities sharing responsibility to implement MCMs (if applicable).	Part II.C - Sharing Responsibility	March 1, 2019	N/A See Section 1.3
Develop outfall inventory table and add to SWMP[1]	Part III – Special Conditions	March 1, 2019 March 1, 2020 March 1, 2021	In progress See Table 3-3
Develop a section in the SWMP that describes the County's plan to develop and implement BMPs to target and reduce discharges of identified pollutants of impairment listed in Table 5-3.	Part III – Special Conditions	March 1, 2019	Complete See Section 5.2
Include a list in the MS4 annual report that describes BMPs to be implemented in 2019 that will target and reduce discharges of the identified pollutants of impairment to impaired waterbodies	Part III – Special Conditions	March 1, 2019	Complete See Section 5.2
Conduct the Non-Storm Water Discharge Evaluation (Table A-2), to be submitted with each annual report	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	March 1, 2019	Complete See Section 3.2.2
Conduct the Occasional Incidental Non-Storm Water Discharges (Table A-3), to be submitted with each annual report	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	March 1, 2019	Complete See Section 3.2.2

Task	Permit Section	Scheduled Completion Date	Progress Update
Conduct storm water facility inventory analysis	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	See Table 3-3	In progress See Table 3-3
Determine on the most appropriate way to prohibit illicit discharges in the County	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	December 31, 2018	In progress See Section 3.2.4
Develop and adopt an ordinance, regulatory mechanism, or written policies and procedures to prohibit illicit discharges in the County	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	December 31, 2019	In progress See Section 3.2.4
Develop IDDE ERP	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	December 31, 2019	Partially complete See Section 3.2.4
Develop Illicit Discharge Investigation and Corrective Action Plan	Part II.A.3 – Illicit Discharge Detection and Elimination Violations	December 31, 2019	Partially complete See Section 3.2.6
Develop and submit updated comprehensive SWMP	Part II.A - SWMP	March 1, 2019	Complete

[1] The outfall inventory will be updated annually while the Storm Water Inventory Analysis is being conducted

A summary of activities planned for the remainder of the permit term is provided in Table 8-2.

Table 8-2. Summary of SWMP Development Schedule

Permit Year	Anticipated Tasks
2020	▪ MCM 1 & 2 – Review program and distribute outreach material to key target audiences ▪ MCM 3 – Finalize storm water sewer system inventory ▪ MCM 3 – Develop/implement elements of IDDE Program ▪ MCM 4 – Develop elements of Construction Site Storm Water Management Program ▪ MCM 5 – Develop elements of Post-Construction Storm Water Management Program ▪ MCM 6 – Continue to develop SOPs and conduct training ▪ MCM 6 – Conduct training on developed SOPs ▪ Part II.B – Conduct fourth year permit training ▪ Part IV – Continue Self-Monitoring and Reporting
2021	▪ MCM 1 & 2 – Review program and distribute outreach material to key target audiences ▪ MCM 3 – Enforce elements of IDDE Program ▪ MCM 4 – Implement and enforce elements of Construction Site Storm Water Management Program ▪ MCM 5 – Implement and enforce elements of Post-Construction Storm Water Management Program ▪ MCM 6 – Develop remaining SOPs and conduct training ▪ Part IV – Continue Self-Monitoring and Reporting

Appendix A. Supplemental Tables

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
Part II. SWMP					
Within 60 Days of the permit effective date and then reviewed annually, all permittees must develop a storm water management team, including a primary SWMP coordinator, and organizational chart which identifies the position responsible for implementing each minimum measure. Any updates to this information shall be submitted with Annual Reports.	Part II.A	N/A	March 2017 Review Annually	Complete, Review Annually	▪ Review and update current organizational chart in SWMP (if applicable).
During the entire permit term, all permittees must establish, document, and execute formalized mechanisms for regular communication between storm water management team members to allow for exchange of information and submittal of information necessary for permit compliance tracking and reporting.	Part II.A	N/A	N/A	Remainder of Permit Term	▪ Conduct monthly meetings and document discussions with formal meeting summaries. ▪ Use Microsoft OneDrive for file management.
MCM 1 – Public Education and Outreach					
a. Determine key target audiences most appropriate for storm water outreach.	Part II.A.1.a.i	▪ Analyze which business types and/or residential behaviors are common sources of illicit discharges, spills and dumping. ▪ Develop a list, description, and rationale for selecting these key target audiences based on business and residential groups associated with illegal discharges and improper disposal of waste to the MS4. ▪ List the pollutants associated with each key target audience.	End of 1st Permit Year	Complete	▪ See SWMP Section 3.1
	Part II.A.1.a.ii	▪ Develop and advertise a storm water website for access by key target audiences other interested stake holders, and the general public. ▪ At a minimum, the storm water website must include: ○ a copy of this General Permit; or ○ a link to the permittee's webpage containing: ▪ the permit, ▪ access to outreach materials, ▪ outreach event information (most recent and current), ▪ storm water management program documents and updates, ▪ annual reports (or an equivalent summary or document providing an annual overview, and the availability for the general public to request the annual report), and ▪ an effective mechanism for providing continued public input for the SWMP. ▪ This website must also include: ○ information regarding how to identify sources of illicit discharges; ○ procedures on how to report an illicit discharge; ○ a summary of the permittee's requirements for covered construction activities; and ○ how to submit construction project complaints. ▪ The website shall be available to the public on the internet.	End of 1st Permit Year	2019 Review Annually	▪ See SWMP Section 3.1
b. Development and utilize the permittee's website for public outreach and involvement.	Part II.A.1.b.i	▪ Develop outreach messages which promote benefits of non-polluting behaviors to the key target audience as well as benefits to storm water discharges.	End of 2nd Permit Year	2019	▪ See SWMP Section 3.1

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
c. Develop a tailored outreach strategy for each key target audience and specific storm water polluting behavior.	Part II.A.1.c.i	▪ Identify and, as needed, develop outreach formats and distribution channels for messages developed for each key target audience and associated storm water polluting behavior. ▪ Formats and distribution channels should be tailored to key target audiences and can utilize other existing formats and distribution channels, such as existing community newsletters. ▪ Submit a description of formats, distribution channels and schedule for each key target audience.	End of 2nd Permit Year	2019	▪ See SWMP Section 3.1
	Part II.A.1.c.ii	▪ Distribute outreach material to target audiences. ▪ Describe distribution in Annual Reports.	During the 3rd, 4th, and 5th Permit Years	2020 2021	▪ Analyze on an annual basis the effectiveness of outreach material and update as needed.
MCM 2 – Public Involvement and Participation					
a. Identify approaches for involving key target audiences in SWMP development and implementation.	Part II.A.2.a.i	▪ Identify approaches for involving the key target audiences (identified under Part II.A.1.a.1.) in the development and implementation of the SWMP over the five year permit term. ▪ For each key audience, describe: ○ The approach; ○ The target date(s) for implementation; and ○ Purpose of the involvement approach (e.g. raise awareness, change behavior, and improve the SWMP). ▪ Wherever possible, identify existing organizations with membership that represent some or all of the key target audiences and describe opportunities for partnering to involve membership in SWMP development and implementation. ▪ Document collaboration with existing organizations if this is an approach for involving key target audiences. ▪ Submit a description of public involvement approach, and schedule for each key audience in 1st Annual Report.	End of 1st Permit Year	2019	▪ See SWMP Section 3.1
	Part II.A.2.a.ii	▪ Implement identified involvement approaches for each key target audience. ▪ Document participation and key target audience feedback on the approach in the SWMP and in each Annual Report.	During the 2nd, 3rd, 4th, and 5th Permit Years	2019	TBD
b. Develop and utilize the permittee's website for public involvement.	Part II.A.2.b.i	▪ Develop and advertise a storm water website for soliciting input from key target audiences, other interested stakeholders, and the general public. At a minimum, the storm water website must include: ○ Access to outreach materials; ○ Most recent or current outreach event information; ○ SWMP planning documents; ○ Annual reports (or an equivalent summary or document providing an annual overview, and the availability for the public to request the annual report); ○ A mechanism for collecting public input for the SWMP; and ○ Illicit discharge and construction project complaints. ▪ Website shall be available to the public on the internet.	End of 1st Permit Year	2019 2020 2021	▪ See SWMP Section 3.1

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
MCM 3 – Illicit Discharge Detection & Elimination					
a. Address the following more frequent categories of non-stormwater discharge or flows (i.e., illicit discharges) if identified as significant contributors of pollutants to the Small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined in ARM 17.30.1102(8)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (discharges or flows from firefighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to state waters). These more frequent non-storm water discharges must be reasonably expected (based on information available to the permittee) to not be significant sources of pollutants to the Small MS4, because of either the nature of the discharges or conditions the permittee established for not allowing these discharges to the Small MS4.	Part II.A.3.a.i	▪ Evaluate and include, in each Annual Report: ○ A list of non-storm water discharges that the permittee has identified as significant contributors of pollutants; ○ The pollutants associated with each non-storm water significant contributor; and ○ Document any local controls or conditions placed on these discharges.	Annually	Complete, Review Annually	▪ Review and update on an annual basis the current list of non-storm water discharges. ▪ Evaluate options for establishing local. ▪ Implement controls if possible. ▪ See Section 3.2 of the SWMP.
b. Develop a list of other similar occasional incidental non-storm water discharge (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-storm water discharges must not be reasonably expected (based on information available to the permittee) to be significant sources of pollutants to the Small MS4, because of either the nature of the discharges or conditions the permittee established for allowing these discharges to the Small MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs for the wash water, etc.).	Part II.A.3.b.i	▪ Evaluate and include, in each Annual Report: ○ A list of occasional incidental non-storm water discharges that the permittee has determined will not be addressed as illicit discharges; ○ The pollutants associated with each non-storm water occasional incidental; and ○ Document any local controls or conditions placed on these discharges.	Annually	Complete, Review Annually	▪ Review and update on an annual basis the current list of occasional incidental non-storm water discharges. ▪ Evaluate options for establishing local controls. ▪ Implement controls if possible. ▪ See Section 3.2 of the SWMP.
	Part II.A.3.b.ii	▪ Include a provision prohibiting any occasional incidental, non-storm water discharge that is determined to be contributing significant amounts of pollutants to the Small MS4 in appropriate ordinances, regulatory mechanism or memoranda or agreements.	End of 2nd Permit Year	2020	▪ Continue to investigate options to establish legal authority by working with County's legal counsel and DEQ, if necessary. ▪ Review Missoula County's approach and process for establishing legal authority. ▪ See Section 3.2 of the SWMP.
c. Inventory storm water sewer infrastructure to thoroughly track illicit discharges, contain spills, and determine high priority areas. When determining high priority areas, permittees must document and consider at a minimum, the following: industrial areas, previous areas with illicit discharges, known illegal dumping areas, the oldest portions of MS4 storm sewer infrastructure, any areas with onsite sewage disposal systems, and areas that discharge to an impaired waterbody.	Part II.A.3.c.i	▪ Update existing map showing: ○ The location and number of all outfalls (as defined in ARM 17.30.1102(14) and Part VIII of this General Permit); and ○ The names and location of all surface waters that receive discharges from those outfalls. ▪ Development of this map to accommodate the provisions of a comprehensive illicit discharge detection and elimination (IDDE) program and the SWMP would typically include mapping storm sewer system components including:	End of 1st Permit Year	2019 2020	▪ Conduct phase 1 field investigations as described in SWMP. ▪ Update existing map with results from phase 1 field investigation. ▪ Submit updated map with 2019 Annual Report. ▪ Conduct phase 2 field investigations as described in SWMP. ▪ Update existing map with results from

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
		○ inlets; ○ open channels; ○ subsurface conduits/pipes ○ dry wells (discharges to groundwater directly); and ○ other similar discrete conveyances. ▪ List, label, or highlight determined high priority areas. ▪ Update the storm sewer map regularly and make available for review by the Department upon request			phase 2 field investigations. ▪ Submit final map with 2020 annual report. ▪ See Section 3.2 of the SWMP.
d. To the extent allowable under State, or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-storm water discharges (except those listed under Part II.A.3.a) into the regulated storm sewer system and implement appropriate enforcement procedures and actions.	Part II.A.3.d.i	▪ If not done previously, adopt an ordinance or other regulatory mechanism to prohibit illicit discharges.	End of 2nd Permit Year	2020	▪ See Section 3.2.4 of the SWMP.
	Part II.A.3.d.iii	▪ Solicit assistance from neighboring MS4s as necessary to detect and eliminate illicit discharge that may originate within the neighboring MS4 and formalize in cooperative agreement, i.e. memoranda of understanding. ▪ Agreements should specify investigation and enforcement responsibilities and these agreements should be described in each permittee's Enforcement Response Plan (ERP) (Part 11.A.3.d.iv.) and Illicit Discharge Investigation and Corrective Action Plan (Part II.A.3.f.). ▪ Formalize cooperative agreements, i.e. memoranda of understanding, with all neighboring MS4s as necessary to implement the IDDE program described in Part II.A.3.	End of 2nd Permit Year	2020	▪ Coordinate with City of Billings and MDT to evaluate potential opportunities for IDDE cooperation. ▪ See Section 1.3 of the SWMP.
	Part II.A.3.d.iv	▪ Develop a formal ERP for illicit discharges. The ERP must describe: ○ Legal authority-through ordinance, formal policies or memoranda of understanding-to eliminate and abate illicit discharges. ○ Identify staff with enforcement authority; ○ Enforcement actions available; ○ Enforcement escalation process; and ○ Schedule to be utilized to quickly and consistently eliminate the source of the discharge, abate any damages and prevent recurrence. ▪ The ERP must include informal, formal, and judicial responses. ○ Informal responses may include: ▪ Telephone notification; ▪ Verbal notice; ▪ Notice of violation; and ▪ Meetings ○ Formal responses may include: ▪ Administrative order; ▪ Compliance schedule; ▪ Order to show cause; ▪ Monetary penalty (administrative); and ▪ Suspended service. ○ Judicial responses may include: ▪ Injunctive relief; ▪ Consent decree; ▪ Civil penalties; and ▪ Criminal penalties.	End of 2nd Permit Year	2019	▪ See Section 3.2 and Appendix H of the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
	Part II.A.3.d.v	▪ Implement ERP.	End of 2nd Permit Year	2019 2020	▪ If legal authority is established, implement the ERP.
e. Proactively inspect, during dry weather, all outfalls to detect illicit discharges and connections into the MS4 and identify high priority outfalls.	Part II.A.3.e.i	▪ Inspect and screen all of the permittee's outfalls during dry weather using the outfall field screening protocol developed by the *Center for Watershed Protection* or equivalent process. ▪ This process shall be completed by the end of the permit cycle.	Completed by the end of the 5th year. Progress documented in the Annual Reports.	2019 2020 2021	▪ Continue to identify and locate all outfalls during phase 1 and phase 2 field investigations. ▪ Inspect and screen a percentage of the identified outfalls each year so that all outfalls are inspected and screened by the end of the permit term. ▪ See Section 3.2 of the SWMP.
	Part II.A.3.e.ii	▪ Using inspection and screening results, storm sewer maps, and other appropriate data, determine high priority outfalls. ▪ Priority is to be determined by the permittee and shall be based on potential water quality impact. When determining high priority outfalls, permittees must consider, at a minimum, outfalls: ○ Which drain industrial areas (as identified by the Small MS4s zoning regulations or growth policy); ○ Where illicit charges have been detected during past permit terms; ○ Which drain areas prone to incidents of illegal dumping; ○ Which drain the oldest portions of the Small MS4s storm sewer infrastructure; ○ Which serve areas primarily served by onsite sewage disposal systems; and/or ○ Which discharge into an impaired water body. ▪ Submit the list of high-priority outfalls with each 2nd-5th Annual Report. The 3rd-5th Year lists may reflect updated priority outfalls based on screening results.	End of 2nd Permit Year Re-evaluate during 3rd, 4th, and 5th Permit Years	2019 2020 2021	▪ After outfall inspections, review data and identify high priority outfalls and areas. ▪ Document the high priority areas on respective maps. ▪ See Section 3.2 of the SWMP.
	Part II.A.3.e.iii	▪ Inspect and screen high priority outfalls during dry weather a minimum of one per year. ▪ Submit a summary of screening results with each 3rd-5th Annual Report	During 3rd, 4th, and 5th Permit Years	2020 2021	▪ Continue to identify and locate all storm water infrastructure and outfalls during phase 1 and phase 2 field investigations. ▪ Identify which outfalls are considered high priority. ▪ Inspect high priority outfalls (minimum of one) annually. ▪ See Section 3.2 of the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
f. Consistently and effectively investigate suspected illicit discharges and connections and track subsequent compliance actions.	Part II.A.3.f.i	▪ Develop an illicit Discharge Investigation and Corrective Action Plan. This plan will describe the process that will be used to: ○ Locate the source of an illicit discharge and ○ Select the appropriate corrective action, i.e. enforcement action, abatement, etc. ○ At a minimum, this plan shall include processes to: ▪ Investigate all illicit discharges within 7 calendar days. Document circumstances that prevented this timeframe; ▪ Prioritize non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated for investigation first; ▪ Confirmed illicit connections must be eliminated within a goal timeframe of 6 months. Document circumstances that prevented this timeframe. ▪ Notify Montana DEQ and appropriate agencies of dry weather flow believed to be an immediate threat to human health or the environment; ▪ Document that a good faith effort was made to find the source of the dry weather discharge and document each phase of the investigation in a case file; and ▪ Resolve and document the conclusion of all investigations. ○ The outfall where any illicit discharge is detected shall continue to be considered high priority and should be investigated as required in the permit. ○ The plan should refer to the permittee's ERP for execution of appropriate enforcement actions.	End of 1st Permit Year	2019	▪ See Section 3.2 and Appendix D of the SWMP.
	Part II.A.3.f.ii	▪ Implement an Illicit Discharge Investigation and Corrective Action Plan.	End of 2nd Permit Year	2020	▪ See Section 3.2.6 of the SWMP.
	Part II.A.3.f.iii	▪ Maintain documentation which describes the investigations conducted and corrective actions taken per the Illicit Discharge Investigation and Corrective Action Plan during dry weather screening or through other detection methods, e.g. public complaints. ▪ Submit summary with each Annual Report.	During 2nd, 3rd 4th and 5th Permit Years	2019 2020 2021	▪ Develop IDDE investigation and corrective action log template in 2019. ▪ Document investigations and corrective actions after IDDE regulatory mechanism is established.
MCM 4 – Construction Site Storm Water Management					
a. To the extent allowable under State, or local law, effectively require, through ordinance, or other regulatory mechanism, erosion and sediment controls and controls of other construction-related pollutant sources on regulated construction projects (construction storm water controls) and implement appropriate enforcement procedures and actions.	Part II A.4.a i	▪ If not completed previously, adopt an ordinance or other mechanism to require construction storm water controls on private and permittee-owned regulated projects. ▪ At a minimum the ordinance or other regulatory mechanism must: ○ require the construction storm water management minimum standards described as Non-Numeric Technology-Based Effluent Limits in the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity to be implemented on all regulated construction projects, and ○ provide the permittee the authority to inspect privately-owned construction storm water management controls. ▪ Submit with 3rd Annual Report.	End of 3rd Permit Year	2020	▪ See Section 3.3.2 of the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
	Part II A.4.a iii	▪ Develop a formal ERP to ensure compliance with the construction storm water management regulatory mechanisms on regulated projects including private property. The sanctions and enforcement mechanisms to be used to ensure compliance will be included. ▪ The ERP must describe how the permittee will: ○ eliminate and abate illegal construction discharges; ○ identify staff with enforcement authority; ○ enforcement actions available and enforcement escalation process and include a schedule to be utilized to quickly, and consistently eliminate the source of the discharge; and ○ abate any damages and prevent recurrence. ▪ The ERP must include informal, formal, and judicial responses. ○ Informal responses may include telephone notification, verbal notice, notice of violation, and meetings. ○ Formal responses may include administrative order, compliance schedule, order to show cause, monetary penalty (administrative), and suspended service. ○ Judicial response may include injunctive relief, consent decree, civil penalties, and criminal penalties. ▪ In addition, the ERP must also include nonmonetary construction project-specific penalties such as stop work orders, bonding requirements, and/or permit denials for noncompliance. ▪ Submit documentation of progress towards creation of ERP with the 1st Annual Report.	End of 3rd Permit Year	2020	▪ See Section 3.3.5 of the SWMP.
	Part II A.4.a iv	▪ Implement ERP.	End of 4th Permit Year	2020 or 2021	▪ Implement the construction storm water ERP after legal authority is established.
b. Require that all regulated construction projects submit a construction storm water management plan prior to construction which is consistent with state and local requirements and which incorporates consideration of potential water quality impacts including storm water pollution prevention through appropriate erosion, sediment, and waste control BMPs. The storm water pollution prevention plan (SWPPP) developed pursuant to the MPDES General Permit for Storm Water Discharges Associated With Construction Activity (Permit Number MTR 100000) may substitute for this site plan for projects where a SWPPP is developed.	Part II A.4.b.i	▪ Develop a construction storm water management plan review checklist that documents, at a minimum, that the requirements described in the Non-Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity have been included on all regulated project construction storm water management plans. ▪ The construction storm water management plan review checklist shall be used to ensure consistent review of submitted plans and to determine and document compliance with state and local requirements.	End of 1st Permit Year	2020	▪ Review and update the draft plan review checklist referenced in the SWMP.
	Part II A.4.b.ii	▪ Implement construction storm water management plan review checklist.	End of 1st Permit Year	2020 or 2021	▪ Implement the final construction storm water plan review checklist.
c. Ensure that all construction storm water management controls are installed, operated and maintained in order to function as designed.	Part II A.4.c.i	▪ Develop an inspection form or checklist to ensure consistent and thorough regulated project inspections. ▪ The checklist shall include, at a minimum, the requirements described in the No Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity.	End of 1st Permit Year	2020	▪ Review and update the draft construction storm water site inspection form referenced in the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
	Part II A.4.c.iii	▪ Conduct inspections using inspection form.	End of 1st Permit Year	2020 2021	▪ If legal authority is established, perform construction site inspections using the final inspection form and the final inspection frequency determination protocol.
	Part II A.4.c.iv	▪ Develop and maintain/update a regulated project inventory to include, at a minimum, if the project is covered under the Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity and associated authorization number, the location, size, topography of site and proximity to water bodies for each project.	End of 1st Permit Year	2020	▪ Coordinate with DEQ and the County GIS department to track and identify regulated construction projects.
	Part II A.4.c.v	▪ Develop an inspection frequency determination protocol based upon the priority of the project. ▪ Priority is to be determined using specific criteria to include- at a minimum: ○ project size; ○ proximity to a water body; ○ steepness of project site slopes ○ discharge to waterbodies impaired for pollutants expected from active construction projects; and ○ past record of non-compliance by the operator of the construction site. ▪ The protocol shall establish the following minimum inspection frequency for all high priority projects: ○ once at commencement of construction after BMPs have been implemented; ○ once within 48-hours after each rain event of 0.25 inches or greater; ○ once within 48-hours after each occurrence of runoff from snowmelt due to thawing ○ conditions that causes visible surface erosion at the site; and ○ once at the conclusion of the project prior to finalization (i.e.release of bond, issuance of certificate of occupancy, etc.). ▪ In addition, the inspection frequency shall include: ○ recidivism reduction measures such as incentives; ○ disincentives; or ○ increased inspection frequency at non-compliant operator's sites.	End of 1st Permit Year	2020	▪ Review and update the draft inspection frequency determination worksheet referenced in the SWMP.
MCM 5 – Post-Construction Site Storm Water Management in New and Redevelopment					
a. To the extent allowable under State, or local law, effectively require, through ordinance, or other regulatory mechanism, erosion and sediment controls and controls of other construction-related pollutant sources on regulated construction projects (construction storm water controls) and implement appropriate enforcement procedures and actions.	Part II A.5.a.i	▪ If not completed previously, adopt an ordinance or other mechanism to require post-construction storm water management controls on regulated projects that, at a minimum, include the performance standard described in Part II.A.5.b.iii.	End of 4th Permit Year	2019	▪ See Section 3.4.2 of the SWMP.
	Part II A.5.a.iii	▪ Develop a formal ERP to ensure compliance with installation, operation and maintenance requirements for post-construction storm water management controls on regulated projects including private property. ▪ The ERP must include informal, formal, and judicial responses.	End of 4th Permit Year	2021	▪ See Section 3.4.5 of the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
		○ Informal responses may include: ▪ telephone notification; ▪ verbal notice; ▪ notice of violation; and ▪ meetings. ○ Formal responses may include: ▪ administrative order; ▪ compliance schedule; ▪ order to show cause; ▪ monetary penalty (administrative); and ▪ suspend service . ○ Judicial responses may include: ▪ injunctive relief; ▪ consent decree; ▪ civil penalties; and ▪ criminal penalties. ○ The ERP must describe: ▪ legal authority to require inspection and maintenance of controls; ▪ identify staff with enforcement authority; ▪ the enforcements actions available; ▪ enforcement escalation process; and ▪ schedule to be utilized to quickly and consistently ensure compliance with post-construction requirements.			
	Part II A.5.a.iv	▪ Implement ERP.	End of 5th Permit Year	2021	▪ Implement the post-construction ERP after legal authority is established.
b. Require that all regulated development projects submit a site plan which is consistent with state and local post-construction requirements which incorporates consideration of potential water quality impacts including appropriate post-construction storm water management controls.	Part II A.5.b.i	▪ Develop and implement a plan review checklist to ensure consistent review of submitted plans and to determine and document compliance with state and local post-construction requirements.	End of 1st Permit Year	2021	▪ Review and update the draft plan review checklist referenced in the SWMP.
	Part II A.5.b.iii	▪ Require that all regulated projects implement post-construction storm water management controls that are designed to infiltrate, evapotranspire, and/or capture for reuse the post-construction runoff generated from the first 0.5 inches of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation. For projects that cannot meet 100% of the runoff reduction requirement, the remainder of the runoff from the first 0.5 inches of rainfall must be either: a. Treated onsite using post-construction storm water management control(s) expected to remove 80 percent total suspended solids (TSS); b. Managed offsite within the same subwatershed using post-construction storm water management control(s) that are designed to infiltrate, evapotranspire, and/or capture for reuse; or c. Treated offsite within the same subwatershed using post-construction storm water management control(s) expected to remove 80 percent TSS. ▪ Permittees allowing offsite treatment shall do the following: a. Develop and apply criteria for determining the circumstances under which offsite treatment may be allowed.	End of 1st Permit Year	2021	▪ Implement the post-construction storm water performance standard after legal authority is established. ▪ Develop and implement criteria for allowing offsite treatment. ▪ Coordinate with the County's GIS department to document the location and relevant information for areas that utilize offsite treatment.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
		▪ The criteria must be based on multiple factors, including but not limited to: i. technical or logistic infeasibility (e.g. lack of available space; ii. high groundwater; iii. groundwater contamination; iv. poorly infiltrating soils; v. shallow bedrock; vi. prohibitive costs; and vii. a land use that is inconsistent with capture and reuse or infiltration of storm water). ▪ Determinations may not be based solely on the difficulty and/or cost of implementation. ▪ The permittee must develop a formal review and approval process for determining projects eligible for offsite treatment. ▪ The offsite treatment option is to be used only after all onsite options have been evaluated and documented through the permittee's developed formal review and approval process. b. Create and maintain an inventory of regulated projects, which utilize offsite treatment of post-construction storm water runoff. The inventory must include the following information pertaining to each approved project: ▪ Geographic location of the project; ▪ Location of the offsite treatment facility which the project drains to; and ▪ Documentation of the rationale for approval of offsite treatment.			
c. Ensure that all post-construction storm water management controls are installed, operated and maintained in order to function as designed.	Part II A.5.c.i	▪ Develop and implement an inspection form or checklist to ensure consistent and thorough inspections of post-construction storm water management controls.	End of 2nd Permit Year	2021	▪ Review and update the draft inspection form referenced in the SWMP.
	Part II A.5.c.iii	▪ Develop and maintain/update an inventory (including at a minimum, a description and location) of all **new** permittee-owned and private post-construction storm water management controls installed since the effective date of the permit.	End of 2nd Permit Year	2019 2020	▪ Coordinate with the County's GIS department to develop a post-construction storm water BMP database. ▪ Continue to identify and locate all existing post-construction storm water BMPs during phase 1 and phase 2 field investigations.
	Part II A.5.c.iv	▪ Develop and maintain/update an inventory (including at a minimum, a description and location) of all **existing** permittee-owned and private high priority post-construction storm water management controls installed prior to the effective date of the permit. ▪ Priority is to be determined by the permittee and should be based on potential water quality impacts using specific criteria which may include: ○ operation and maintenance needs of the practices; ○ proximity to water body; ○ drainage area treated; ○ land use type; and ○ location within an impaired waterbody watershed.	End of 3rd Permit Year	2019 2020	▪ Continue to identify and locate all existing post-construction storm water BMPs during phase 1 and phase 2 field investigations. ▪ Coordinate with the County's GIS department to develop a post-construction storm water BMP database.
	Part II A.5.c.vi	▪ Develop an inspection frequency determination protocol based upon the priority of the post-construction storm water management control.	End of 2nd Permit Year	2021	▪ Review and update the draft inspection frequency determination worksheet

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
		▪ Priority is to be determined by the permittee and should be based on potential water quality impact using specific criteria which may include: ○ operation and maintenance needs of the practices; ○ proximity to water body; ○ drainage area treated; ○ land use type; and ○ location within an impaired water body watershed.			referenced in the SWMP.
	Part II A.5.c.vii	▪ Develop a program to either: ○ conduct inspections of high-priority post-construction storm water management controls at least annually, OR ○ to require self-inspection and reporting by owners at least annually.	End of 2nd Permit Year	2021	▪ Develop inspection program and implement the inspection frequency protocol after legal authority is established.
	Part II A.5.c.viii	▪ Inspect permittee-owned high priority post-construction storm water management controls annually and document findings and resulting compliance actions.	During the 3rd, 4th,and 5th Permit Years	2020 2021	▪ Using the results of the phase 1 and phase 2 field investigations, inspect County-owned, post-construction storm water BMPs in high priority areas. ▪ Use the final version of the post-construction BMP inspection form.
	Part II A.5.c.ix	▪ Inspect or have inspected all high priority privately-owned post-construction storm water management controls annually ▪ Document findings and resulting compliance actions.	During the 3rdd 4th,and 5th Permit Years	2021	▪ After legal authority is established and using the results of the phase 1 and phase 2 field investigations, inspect privately-owned, post-construction storm water BMPs. ▪ Use the final version of the post-construction BMP inspection form.
d. Incorporate recommendations and requirements into plans, policies and ordinances which allow and support the utilization of LID concepts on public and private property.	Part II A.5.d.i	▪ Convene appropriate staff and conduct a discussion to evaluate existing barriers to implementing LID infrastructure in the permittee's codes, ordinances and policies. ▪ The outcome of this discussion must identify opportunities for change and address the potential inconsistencies between policies. ▪ Appropriate staff must include member(s) of various departments, some of which may include: ○ Parks and Recreation; ○ Public Works; ○ Planning; ○ Environmental Protection; ○ Utilities; and ○ Transportation.	End of 4th Permit Year	2020	▪ Coordinate with internal County departments to review codes or policies that deter or prevent the use of LID infrastructure.
MCM 6 – Pollution Prevention/Good Housekeeping for Permittee Operations					
a. Identify the operation and maintenance program to prevent or reduce pollutant runoff from permittee-owned/ operated facilities and field activities.	Part II A.6.a.i	▪ Create an inventory of permittee-owned/ operated facilities and activities that have the potential to release contaminants to the MS4. The inventory should include, at a minimum, the following: 1. Facilities: ○ maintenance and storage yards; ○ waste handling and disposal areas; ○ vehicle fleet or maintenance shops with outdoor storage areas; ○ salt/sand storage locations; and	End of 1st Permit Year	2019	▪ See Section 3.5 of the SWMP.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
		○ snow or dredge material disposal areas operated by the permittee. 2. Activities: ○ Park and open space maintenance; ○ parking lot maintenance; ○ building maintenance; ○ road maintenance/deicing; and ○ storm water system maintenance including catch basin cleaning. ▪ List the possible contaminant(s) from each facility/activity and list the local department(s) and position(s) responsible for pollution prevention with each facility/activity. ▪ Update the inventory annually.			
	Part II A.6.a.ii	▪ Develop a map that identifies the locations of facilities and known locations of activities identified in 6.a.i. ▪ Update the map annually.	During the 2nd, 3rd,4th , and 5th Permit Years	2019 2020 2021	▪ See Section 3.5 of the SWMP.
	Part II A.6.a.iii	▪ Organize similar facilities and activities identified in 6.a.i. into categories, label the categories, and develop standard operating procedures (SOPs) for all categories. ▪ Development of the SOPs must include documented inspections and communication with relevant department personnel of2 facilities/activities per category prior to SOP category completion. ▪ The SOPs must identify storm water pollution controls (structural and non-structural controls, and operation improvements) to be installed, implemented, and/or maintained to minimize the discharge of contaminants. ▪ The permittee must complete, at a minimum, the required SOPs according to the following schedule: ○ one-fourth by the end of the 2nd permit year; ○ one-half by the end of the 3rd permit year; ○ three-fourths by the end of the 4th permit year; and ○ all by the end of the 5th permit year.	During the 2nd, 3rd,4th and 5th Permit Years	2019 2020 2021	▪ Utilize the template SOPs referenced in the SWMP for applicable facilities and activities and develop final versions. ▪ See Section 3.5 of the SWMP.
	Part II A.6.a.iv	▪ Develop and internally document storm water pollution prevention training in conjunction with the development of the SOPs for each category.	During the 2nd, 3rd, 4th, and 5th Permit Years	2019 2020 2021	▪ Convene appropriate staff during the development of SOPs and schedule organized trainings for all staff members.
	Part II A.6.a.v	▪ Conduct annual storm water pollution prevention training for all permittee staff directly involved with implementing SOPs. ▪ Trainings will be conducted during the next permit year after development of each SOP. Example: SOP and training developed in 2nd Permit Year. Training conducted in 3rd Permit Year. ▪ Retain records of completed trainings and attendance.	During the 3rd, 4th,and 5th Permit Years	2020 2021	

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
Part II.B – Training					
The permittee is required to conduct and/or coordinate the following training and track/document of all municipal staff participation in each:	Part II B.1	▪ Conduct comprehensive training during the 1st year of the permit term for all members of the storm water management team to educate them about the new permit, the updated SWMP and implementation responsibilities for the upcoming permit term. New members of the storm water management team must receive the equivalent amount of training within 90 days of the hire date.	End of 1st Permit Year	2019	▪ Conduct new General Permit and SWMP training for County SWMP team by March 29, 2019.
	Part II B.2	▪ Conduct storm water awareness training, at a minimum, during 1st and 4th years of the permit term for all appropriate permittee field staff (and pretreatment inspection staff) and staff who work at permittee facilities. The training must provide education regarding storm water impacts, the MS4 permit, the detection and elimination of illicit discharges and the implementation of the ERP, and specifically address BMPs necessary to minimize discharges of pollutants during permittee activities or the operation of permittee facilities. Appropriate new field staff and staff who work at permittee facilities must receive the equivalent amount of training within 90 days of the hire date.	1st and 4th Permit Years	2019 2020	▪ Coordinate with the City of Billings to borrow the Excal Visual, Inc. DVD and develop training material. ▪ Conduct storm water awareness training for County staff who work at permittee facilities
	Part II B.3	▪ Conduct training, at a minimum, during the 1st and 4th years of the permit term for all inspectors and plan reviewers responsible for implementation of the Construction Site Storm Water Management Control Minimum Measure. Inspector training shall include inspection protocol and the implementation of the ERP upon development. New inspectors and plan reviewers must receive the equivalent amount of training within 90 days of the hire date.	1st and 4th Permit Years	(1st year training is complete) 2020	▪ TBD
	Part II B.4	▪ Conduct training, at a minimum, during the 1st and 4th years of the permit term for all inspectors and plan reviewers responsible for implementation of the Post-Construction Storm Water Management in New Development and Redevelopment Minimum Measure. Inspector training shall include inspection protocol and the implementation of the ERP. New inspectors and plan reviewers must receive the equivalent amount of training within 90 days of the hire date.	1st and 4th Permit Years	(1st year training is complete) 2020	▪ TBD
	Part II B.5	▪ Conduct training, at the schedule outlined within Part II.6.a.v, for storm water staff responsible for implementing Standard Operating Procedures (SOPs) developed as a requirement of the Pollution Prevention/Good Housekeeping Minimum Measure. Training must be oriented to staff involved with the SOP-specific duties. New storm water staff responsible for implementing SOPs must receive the equivalent amount of training within 90 days of the hire date.	During the 2nd, 3rd, 4th, and 5th Permit Years	2020 2021	▪ TBD
Part II.B – Sharing Responsibility					
Sharing Responsibility (optional)	Part II C	▪ Optional. If implemented, the MS4 should enter into a legally binding agreement with the other entity in order to minimize uncertainty about compliance with the MPDES permit.	N/A	Complete	▪ See Section 1.3 of the SWMP.
Part III – Special Conditions					
Special Conditions	Part III A	▪ The permittee's (SWMP) must identify all outfalls that discharge to impaired waterbodies, the impaired waterbodies, and the associated pollutant(s) of impairment. Information on impaired waterbodies may be obtained from the Department or from the Montana DEQ Clean Water Act Information Center website: http://cwaic.mt.gov/. This information will be submitted with each Annual Report.		2019 2020 2021	▪ Continue to identify and locate all outfalls during phase 1 and phase 2 field investigations discuss in the SWMP. ▪ Update the outfall summary table using the results from the field investigations.

General Requirement	Permit Section	Required BMP	Permit Deadline	Proposed Schedule	Strategy
	Part III A	▪ The permittee's SWMP must include a section that describes BMPs that target and reduce discharges of the identified pollutant(s) of impairment to impaired waterbodies without an approved TMDL. The permittee should only identify pollutants of impairment from Table 1 in Part IV The permittee's Annual Report must contain a summary of BMPs implemented over the reporting period and a schedule of BMPs planned for the following year.		2019 2020 2021	▪ Review and update on an annual basis the BMPs used to target and reduce pollutants of impairment and the planned BMPs for the coming calendar year (see Section 5.2 of the SWMP).
Part IV – Monitoring, Recording, and Reporting Requirements					
Self-Monitoring	Part IV. A	▪ (see permit for requirements)		2019 2020 2021	▪ Review and adjust, if needed, the current monitoring locations in 2019. ▪ See Section 6.0 of the SWMP. ▪ Conduct semi-annual monitoring.

Table A-2. Non-Storm Water Discharge Evaluation

Category[1]	Suspected Significant Contributor of Pollutants (yes/no)	Potential Associated Pollutants	Local Controls or Conditions
Water line flushing	No	Chlorine, sediment	None
Landscape irrigation	No	Chlorine, sediment, nutrients	None
Diverted stream flows	No	Sediment	None
Rising ground waters	Possibly	Sediment	To be investigated in 2020 and developed, if necessary
Uncontaminated ground water infiltration	No	None	None
Uncontaminated pumped ground water	No	Sediment	None
Discharges from potable water sources	No	Chlorine	None
Foundation drains	No	None	None
Air conditioning condensation	No	None	None
Irrigation water	Possibly	Nutrients, sediment, pesticides	To be investigated and developed, if necessary
Springs	No	None	None
Water from crawl space pumps	No	None	None
Footing drains	No	None	None
Lawn watering	No	Chlorine, nutrients	None
Individual residential car washing	Possibly	Sediment, organics, metals, oil and grease	To be investigated in 2020 and developed, if necessary
Flows from riparian habitats and wetlands	No	Sediment	None
Dechlorinated swimming pool discharges	Possibly	Chlorine	To be investigated in 2020 and developed, if necessary
Street wash water	Possibly	Organics, metals, floatables, sediment, nutrients	To be investigated in 2020 and developed, if necessary

[1] *Categories are in accordance with those listed in Part II.A.3.a of the General Permit*

Table A-3. Occasional Incidental Non-Storm Water Discharges not to be addressed as Illicit Discharges

Description of Occasional Incidental Non-Storm Water Discharge	Suspected Significant Contributor of Pollutants (yes/no)	Potential Associated Pollutants	Local Controls or Conditions
Charity Car Wash	No	Sediment, detergents, soaps, metals, oil and grease	Provide education through public education and outreach program
Residential Car Washes	No	Sediment, detergents, soaps, metals, oil and grease	Provide education through public education and outreach program
Emergency water main breaks	No	Chlorine, sediment	To be Determined
Fire Hydrant Flushing (Lockwood Water/Sewer)	Possibly	Chlorine	To be investigated in 2020 and developed, if necessary
Swimming Pools	Possibly	Chlorine	To be investigated in 2020 and developed, if necessary
Irrigation Return Water	Possibly	Sediment, nutrients	Expand public education and outreach program to promote awareness
Rising Groundwater	Possibly	Sediment	To be investigated in 2020 and developed, if necessary
Mobile Power Washers	Possibly	Sediment, organics, metals, oil and grease	To be investigated in 2020 and developed, if necessary
Water used for Dust Control	Possibly	Sediment, chlorine	To be investigated in 2020 and developed, if necessary.

Appendix B. MS4 General Permit

GENERAL PERMIT
FOR
STORM WATER DISCHARGES ASSOCIATED WITH SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

PERMIT NUMBER MTR040000

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

AUTHORIZATION TO DISCHARGE UNDER THE MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES)

In compliance with Section 75-5-101 *et seq.,* Montana Code Annotated (MCA); Administrative Rules of Montana (ARM) 17.30.1101; 17.30.1301 *et seq.; and ARM* 17.30.601 *et seq.,* applicants with an authorization letter issued under this *General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (Small MS4s)* are permitted to discharge storm water resulting only from Small MS4s in accordance with effluent limitations, monitoring requirements, and other conditions set forth herein.

This Permit shall become effective January 1, 2017.

This Permit and the authorization to discharge shall expire at midnight, December 31, 2021.

FOR THE MONTANA DEPARTMENT
OF ENVIRONMENTAL QUALITY

Jon Kenning, Chief
Water Protection Bureau

Issuance Date: November 30, 2016

Contents

Part I. Permit Coverage

Discharges Authorized
Montana Pollutant Discharge Elimination System (MPDES) General Permit MTR040000 is a fourth-generation General Permit for storm water discharges associated with Small Municipal Separate Storm Sewer Systems (MS4s). Pursuant to 75-5-402, MCA and requirements found in ARM, Title 17, Chapter 30, Subchapters 11, 12, and 13, the Department of Environmental Quality (the Department or DEQ) regulates storm water discharges from Small MS4s. To elaborate, ARM 17.30.1105(1)(d) requires MPDES permit coverage for Small MS4s that are identified in ARM 17.30.1102(23) or designated pursuant to ARM 17.30.1107. Regulated Small MS4s are required to apply for, and obtain, authorization for the discharge of storm water into state waters per requirements of this General Permit.

Ineligibility for Coverage
This 2017 General Permit does not authorize, or supersede permitting requirements for "storm water discharge associated with industrial activity" as defined in ARM 17.30.1102(29), "storm water discharge associated with construction activity" as defined in ARM 17.30.1102(28), or storm water discharges required or covered under another MPDES permit. The 2017 General Permit does not relieve the permittee from any other statute, regulation, permits, or other regulatory requirements for activities occurring within their area and not associated with permitted storm water discharges with Small Municipal Separate Storm Sewer Systems.

Applicants
The Department may determine that a small MS4 applying for coverage does not qualify for authorization under the renewed 2017 General Permit for Storm Water Discharges associated with Small MS4s, citing that the specific source applying for authorization appears unable to comply with the one or more of the following requirements:

- effluent standards, effluent limitations, standards of performance for new sources of pollutants, toxic effluent standards and prohibitions, and pretreatment standards;
- water quality standards established pursuant to 75-5-301, MCA;
- prohibition of discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste;
- prohibition of any discharges to which the regional administrator has objected in writing;
- prohibition of any discharge which is in conflict with a plan or amendment thereto approved pursuant to section 208(b) of the Act;
- any additional requirements that the Department determines are necessary to carry out the provisions of 75-5-101, et seq., MCA.
- The storm water discharge is different in degree or nature from discharges reasonably expected from sources or activities within the category described in this MPDES General Permit (including pollutants from process wastewater streams).
- The MPDES permit authorization for the same operation has previously been denied or revoked.
- The discharge sought to be authorized under the 2017 General Permit is also included within an application or is subject to review under the Major Facility Siting Act, 75-20-101, et seq., MCA.

- The point source is, or will be, located in an area of unique ecological or recreational significance. Such determination must be based upon considerations of Montana stream classifications adopted under 75-5-301, MCA, impacts on fishery resources, local conditions at proposed discharge sites, and designations of wilderness areas under 16 USC 1132 or of wild and scenic rivers under 16 USC 1274.

If the Department determines ineligibility for a Small MS4, the Department shall proceed, unless the application withdrawn, to process the application through the Individual MPDES Permit requirements. The Department will contact the applicant regarding ineligibility and request more information and fees, as needed, for Individual MPDES Permit requirements.

Permittees
Per ARM 17.30.1341(9), the Department may require any Small MS4 authorized by the 2017 General Permit to obtain an Individual Permit instead. The Department may require a Small MS4 to get an Individual Permit citing one or more of the following reasons:

- a water quality management plan has been approved that contains requirements applicable to categories or subcategories of discharges or facilities covered in a general permit;
- the Department has determined that the Small MS4 is a significant contributor to pollution;
- a change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the Small MS4;
- the discharger is not in compliance with the conditions of the 2017 General Permit;
- circumstances have changed since the time of the request to be covered by the 2015 General Permit so that the Small MS4 is no longer appropriately controlled under the 2017 General Permit;
- effluent limitations guidelines have been promulgated for facilities covered under the 2017 General Permit; or
- a change in any condition that requires either a temporary or permanent reduction or elimination of the discharge authorized under the 2017 General Permit has occurred.

Public Notice
Prior to issuing a General Permit, the Department shall provide a public notice in accordance with the requirements of ARM 17.30.1372 and shall adhere to the requirements of ARM 17.30.1373 through 17.30.1377 regarding public comments and public hearings.

Application for Coverage
Per ARM 17.30.1111, owners or operators of Small MS4s must obtain coverage under a MPDES General Permit by completing a General Permit application or a MPDES Individual Permit by submitting an application for an Individual Permit, and complying with the application requirements set forth in ARM 17.30.1111(2).

In accordance with ARM 17.30.1341(4), a discharger who fails to submit a written application in accordance with the terms of this General Permit shall not be authorized to discharge under the permit. A complete and timely application to be covered in accordance with this General Permit's requirements fulfills the requirements for permit application for purposes of ARM

17.30.1105, 17.30.1111, 17.30.1313, 17.30.1322, and 17.30.1341. The application form, as provided by the Department, shall be completed and submitted to:

Montana Department of Environmental Quality
Water Protection Bureau
P.O. Box 200901
Helena, Montana 59620-0901

Authorization options for coverage under the 2017 General Permit are provided below.

New Authorizations (Not currently authorized under the 2015 General Permit)
Applicants seeking authorization under the 2017 General Permit shall submit a complete application package at least 30 days before the anticipated date of required permit coverage. If an applicant owns and operates Small MS4 areas throughout the state, the applicant can submit:

- application packages for each Small MS4 area separately,
- application packages for each Small MS4 area separately as a co-permittee with the interconnected Small MS4,
- application packages for each Small MS4 area to reflect both permittee and co-permittee statuses, as requested, or
- a single comprehensive application package to cover all Small MS4 areas in the state.

An application package includes:

- an application form, as provided by the Department,
- a storm water management program, and
- fees (renewal permit fees) as required under ARM 17.30.201.

If there are deficiencies with the application package, the Department may deny authorization under the permit or contact the MS4 for additional information necessary to ensure the application package meets requirements. If the request is denied, the Department may process the request as an Individual Permit (with additional fees); the applicant may withdraw the request; or the applicant may modify the MS4's operations to meet the conditions of the 2017 General Permit and re-apply for coverage under the 2017 General Permit.

Once determined adequate, the Department will issue an authorization letter to these MS4s confirming coverage under the 2017 General Permit beginning January 1, 2017 [ARM 17.30.1341(4)].

Continuing Authorizations issued under the 2015 General Permit
Permitted MS4s renewing authorizations under the 2017 General Permit shall submit a complete renewal application package at least 30 days in advance of the existing 2015 General Permit expiration.

A renewal application package includes:

- a renewal application form, as provided by the Department,
- a storm water management program, and
- fees (renewal permit fees) as required under ARM 17.30.201.

If there are deficiencies with the renewal application package, the Department may deny authorization under the permit or contact the MS4 for additional information necessary to ensure the application package meets requirements. If the request is denied, the Department may process the request as an Individual Permit (with additional fees); the applicant may withdraw the request; or the applicant may modify the MS4's operations to meet the conditions of the 2017 General Permit and re-apply for coverage under the 2017 General Permit.

Once determined adequate, the Department will issue an authorization letter to these MS4s confirming coverage under the 2017 General Permit beginning January 1, 2017 [ARM 17.30.1341(4)].

Co-permittees Authorizations (New or Continuing Authorizations)
When multiple Small MS4s apply for coverage under a single permit authorization number, they shall be considered co-permittees and shall be jointly responsible for compliance under the 2017 General Permit as set forth at ARM 17.30.1111(3) and (7). Each co-permittee must submit a separate application package to obtain authorization. Co-permittee authorizations may occur under the 2017 General Permit as a renewal authorization with continuing coverage status from the 2015 General Permit or a new authorization. Co-permittees will be subject to the requirements above based on their status: new or continuing.

Other Permitting Requirements
Submittal of the application package and receipt of an authorization letter from the Department does not eliminate a permittee's obligation to obtain other necessary permits to include MS4-related activities that utilize the storm sewer systems as a conveyance for non-storm water discharges to a receiving waterbody.

Permit Area of Permitted MS4s Under the 2015-Issued General Permit
This permit covers areas pursuant to ARM 17.30.1102(23) that are served by, or contribute to, municipal separate storm sewers owned or operated by the permittee that discharges to State waters as follows:

- Cities: Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula.

  For cities required to maintain coverage under this renewed permit, the geographic area of permit coverage will include the U.S. Census designated urbanized areas in accordance with the 2010 census for cities listed in ARM 17.30.1102(23)(a) and the entirety of the municipal incorporated boundary for cities listed in ARM 17.30.1102(23)(b). For the purposes of the 2017 General Permit, these permittees are referred to as Traditional MS4s.

- Counties: Cascade, Missoula, and Yellowstone.

  For counties required to maintain coverage under this renewed permit, the geographic area of permit coverage will include the U.S. Census designated urbanized areas in accordance with the 2010 census for counties listed in ARM 17.30.1102(23)(a). For the purposes of the 2017 General Permit, these permittees are referred to as Traditional MS4s.

- Other: Malmstrom Air Force Base, Montana State University, and University of Montana (Missoula).

  For all other permitted MS4s as identified in accordance with ARM 17.30.1102(23)(d) and required to maintain coverage under this renewed permit, the geographic area of permit coverage is the portion of the permittee's jurisdiction that is within permitted Traditional MS4s. For the purposes of the 2017 General Permit, these permittees are referred to as Non-Traditional MS4s.

Effluent Limitations
Effective immediately upon issuance of an authorization under the 2017 General Permit and lasting through the expiration date, the following conditions apply to all Small MS4s covered under this General Permit. There must be no discharge of pollutants via storm water runoff to State Waters except as provided for below.

A. Implementation of Best Management Practices (BMPs) consistent with the provisions of the Storm Water Management Program (SWMP) and the requirements in this General Permit shall constitute compliance with the requirement of reducing pollutants to the maximum extent practicable (MEP). Discharges of storm water containing pollutants associated with Small MS4s covered under this General Permit will be controlled through the development, implementation, and enforcement of a SWMP designed to reduce the discharge of pollutants from the permitted Small MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Montana Water Quality Act (MWQA).

B. For regulated Small MS4s which have been designated through ARM 17.30.1102(23) and had initial authorization under the preceding January 1, 2005 to December 31, 2009 General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System, the permittee was required to develop, implement, and enforce a SWMP, as stated in Part II of the 2005 General Permit, no later than the December 31, 2009 expiration date. This requirement is still valid and binding under this reissued January 1, 2017 to December 31, 2021 General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4), although for the new inclusions or revisions to the SWMP as stated in the reissued 2017 General Permit, the permittee must develop, implement, and enforce those additional or revised components as per the implementation timeframe specified.

C. For any regulated Small MS4s which have been designated through ARM 17.30.1102(23) or 17.30.1107 or an unregulated MS4 seeking coverage that has not been previously authorized, the permittee must develop, implement, and enforce a SWMP in accordance with the 2017 General Permit, no later than five years from the initial date of permit authorization.

D. If an individual MPDES permit is issued to any regulated Small MS4, coverage under the 2017 General Permit is terminated on the effective date of the final individual MPDES permit.

No discharge of storm water containing pollutants from process wastewater streams may occur under this General Permit.

No discharge of storm water containing pollutants from Small MS4s covered under this General Permit may cause or contribute to a violation of water quality standards.

Part II. Storm Water Management Program

A. Requirements

The permittee must develop, document, and maintain a SWMP which includes management practices, control techniques, systems, designs, good standard engineering practices, and such other provisions necessary to reduce the discharge of pollutants from the permitted Small MS4 to the MEP. This section describes required BMPs and implementation schedules or deadlines for each BMP. DEQ requires BMPs that are ***selected, designed, installed, implemented, inspected, and maintained*** (or replaced based on inspections) in accordance with good engineering, hydrologic, and pollution control practices. DEQ provides the flexibility for permittees to choose appropriate BMPs based on their location-specific discretion to self-determine appropriate BMPs to control pollutant sources. If applicable, retain documentation, specifications, and/or standard operating procedures used for BMP selection.

Pursuant to ARM 17.30.1111(6), the permittee shall effectively manage a storm water program inclusive of the six minimum control measures: Public Education and Outreach; Public Involvement and Participation; Illicit Discharge Detection & Elimination; Construction Site Storm Water Management; Post-Construction Site Storm Water Management in New and Redevelopment; and Pollution Prevention/Good Housekeeping for Permittee Operations.

The permittee shall effectively implement a coordinated storm water program inclusive of the development of a storm water management team comprised of persons responsible for implementation of the SWMP and the establishment of formal mechanisms for communication and coordination between team members (e.g. meetings, email updates, etc.) to ensure cooperation necessary to facilitate permit compliance and timely reporting.

Within 60 Days of the permit effective date and then reviewed annually, all permittees must develop a storm water management team, including a primary SWMP coordinator, and organizational chart which identifies the position responsible for implementing each minimum measure. Any updates to this information shall be submitted with Annual Reports.

During the entire permit term, all permittees must establish, document, and execute formalized mechanisms for regular communication between storm water management team members to allow for exchange of information and submittal of information necessary for permit compliance tracking and reporting.

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
1. PUBLIC EDUCATION AND OUTREACH The permittee shall implement a storm water public education program to develop or adapt, distribute, and evaluate educational materials and outreach activities to key target audiences in the MS4 that raise awareness about the impacts of storm water discharges on waterbodies, educate audiences about the behaviors and activities that have the potential to pollute storm water discharges, and motivate action to change behaviors to reduce pollutants in storm water runoff.			
a. Determine key target audiences most appropriate for storm water outreach.	All	i. • Analyze which business types and/or residential behaviors are common sources of illicit discharges, spills, and dumping. • Develop a list, description, and rationale for selecting these key target audiences based on business and residential groups associated with illegal discharges and improper disposal of waste to the MS4. • List the pollutants associated with each key target audience. • Submit with 1st Annual Report.	End of 1st Permit Year
	All	ii. • Develop and advertise a storm water website for access by key target audiences, other interested stakeholders, and the general public. • At a minimum, the storm water website must include: o a copy of this General Permit; or o a link to the permittee's webpage containing ▪ the permit, ▪ access to outreach materials, ▪ outreach event information (most recent and current), ▪ storm water management program documents and updates, ▪ annual reports (or an equivalent summary or document providing an annual overview, and the availability	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		for the general public to request the annual report), and ▪ an effective mechanism for providing continued public input for the SWMP. • The website must also include: o information regarding how to identify sources of illicit discharges; o procedures on how to report an illicit discharge; o a summary of the permittee's requirements for covered construction activities; and o how to submit construction project complaints. • The website shall be available to the public on the internet.	
b. Develop and utilize the permittee's website for public outreach and involvement.	All	i. • Develop outreach messages which promote benefits of non-polluting behaviors to the key target audience as well as benefits to storm water discharges. • Submit with 2nd Annual Report.	End of 2nd Permit Year
c. Develop a tailored outreach strategy for each key target audience and specific storm water polluting behavior.	All	i. • Identify and, as needed, develop outreach formats and distribution channels for messages developed for each key target audience and associated storm water polluting behavior. • Formats and distribution channels should be tailored to key target audiences and can utilize other existing formats and distribution channels, such as existing community newsletters. • Submit a description of formats, distribution channels and schedule for each key target audience in 2nd Annual Report.	End of 2nd Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
	All	ii. • Distribute outreach materials to target audiences • Describe distribution in Annual Reports.	During the 3rd, 4th, and 5th Permit Years

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
2. PUBLIC INVOLVEMENT AND PARTICIPATION The permittee shall develop a strategy to involve key target audiences in the development and implementation of the SWMP that complies with state and local public notice requirements.			
a. Identify approaches for involving key target audiences in SWMP development and implementation.	All	i. • Identify approaches for involving the key target audiences (identified under Part II.A.1.a.i.) in the development and implementation of the SWMP over the five year permit term. • For each key audience, describe: o the approach; o the target date(s) for implementation; and o purpose of the involvement approach (e.g. raise awareness, change behavior, and improve the SWMP). • Wherever possible, identify existing organizations with membership that represent some or all of the key target audiences and describe opportunities for partnering to involve membership in SWMP development and implementation. • Document collaboration with existing organizations if this is an approach for involving key target audiences. • Submit a description of public involvement approach, and schedule for each key audience in 1st Annual Report.	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
	All	ii. • Implement identified involvement approaches for each key target audience. • Document participation and key target audience feedback on the approach in the SWMP and in each Annual Report.	During the 2nd, 3rd, 4th, and 5th Permit Years
b. Develop and utilize the permittee's website for public involvement.	All	i. • Develop and advertise a storm water website for soliciting input from key target audiences, other interested stakeholders, and the general public. At a minimum, the storm water website must include: o access to outreach materials; o most recent or current outreach event information; o SWMP planning documents; o annual reports (or an equivalent summary or document providing an annual overview, and the availability for the public to request the annual report); o a mechanism for collecting public input for the SWMP; and o illicit discharge and construction project complaints. • Website shall be available to the public on the internet.	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
3. ILLICIT DISCHARGE DETECTION & ELIMINATION The permittee shall develop, implement and enforce a program to detect and eliminate illicit discharges (as defined in ARM 17.30.1102(7)) into the permitted Small MS4.			
a. Address the following more frequent categories of non-storm water discharges or flows (i.e., illicit discharges) if identified as significant contributors of pollutants to the Small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined in ARM 17.30.1102(8)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (discharges or flows from firefighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to state waters). These more frequent non-storm water discharges must be reasonably expected (based on information available to the permittee) to not be significant sources of	All	i. • Evaluate and include, in each Annual Report: o a list of non-storm water discharges that the permittee has identified as significant contributors of pollutants; o the pollutants associated with each non-storm water significant contributor; and o document any local controls or conditions placed on these discharges.	Annually

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
pollutants to the Small MS4, because of either the nature of the discharges or conditions the permittee established for not allowing these discharges to the Small MS4.			
b. Develop a list of other similar occasional incidental non-storm water discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-storm water discharges must not be reasonably expected (based on information available to the permittee) to be significant sources of pollutants to the Small MS4, because of either the nature of the discharges or conditions the permittee established for allowing these discharges to the Small MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs for the wash water, etc.).	All	i. • Evaluate and include, in each Annual Report: o a list of occasional incidental non-storm water discharges that the permittee has determined will not be addressed as illicit discharges; o the pollutants associated with each non-storm water occasional incidental; and o document any local controls or conditions placed on these discharges.	Annually
	All	ii. • Include a provision prohibiting any occasional incidental non-storm water discharge that is determined to be contributing significant amounts of pollutants to the Small MS4 in appropriate ordinances, regulatory mechanism or memoranda of agreements.	End of 2nd Permit Year
c. Inventory storm water sewer infrastructure to thoroughly track illicit discharges, contain spills, and determine high priority areas. When determining high priority areas, permittees must document and consider, at a minimum, the following: industrial areas, previous areas with illicit discharges, known illegal dumping areas, the oldest portions of	All	i. • Update existing map showing: o the location and number of all outfalls (as defined in ARM 17.30.1102(14) and Part VIII of this General Permit); and o the names and location of all surface waters that receive discharges from those outfalls. • Development of this map to accommodate the provisions of a comprehensive illicit discharge detection and elimination (IDDE) program and	End of 1st Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
	MS4 storm sewer infrastructure, any areas with onsite sewage disposal systems, and areas that discharge to an impaired waterbody.		the SWMP would typically include mapping storm sewer system components including: o inlets; o open channels; o subsurface conduits/pipes; o dry wells (discharges to ground water directly); and o other similar discrete conveyances. • List, label, or highlight determined high priority areas. • Update the storm sewer map regularly and make available for review by the Department upon request.	
d.	To the extent allowable under State, or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-storm water discharges (except those listed under Part II.A.3.a.) into the regulated storm sewer system and implement appropriate enforcement procedures and actions.	Traditional MS4s	i. • If not done previously, adopt an ordinance or other regulatory mechanism to prohibit illicit discharges • Submit with 2nd Annual Report.	End of 2nd Permit Year
		Non-Traditional MS4s	ii. • If not done previously, adopt an ordinance or other regulatory mechanisms to prohibit illicit discharges. • Permittees without legal authority to enact an ordinance or other regulatory mechanism shall ensure that written policies and procedures are in place to exert authority (to the extent allowable) over MS4 users such as: o employees, o the traveling public, o contractors, etc. • Submit a summary of legal authority, written policy, and written procedures with the 2nd Annual Report.	End of 2nd Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
	All	iii. • Solicit assistance from neighboring MS4s as necessary to detect and eliminate illicit discharges that may originate within the neighboring MS4 and formalize in cooperative agreements, i.e. memoranda of understanding. • Agreements should specify investigation and enforcement responsibilities and these agreements should be described in each permittee's Enforcement Response Plan (ERP) (Part II.A.3.d.iv.) and Illicit Discharge Investigation and Corrective Action Plan (Part II.A.3.f.). • Formalize cooperative agreements, i.e. memoranda of understanding, with all neighboring MS4s as necessary to implement the IDDE program described in Part II.A.3. • Submit a summary of the cooperative agreements with the 2nd Annual Report.	End of 2nd Permit Year
	All	iv. • Develop a formal ERP for illicit discharges. The ERP must describe: o legal authority – through ordinance, formal policies or memoranda of understanding – to eliminate and abate illicit discharges; o identify staff with enforcement authority; o enforcement actions available; o enforcement escalation process; and o schedule to be utilized to quickly and consistently eliminate the source of the discharge, abate any damages and prevent recurrence. • The ERP must include informal, formal, and judicial responses. o Informal responses may include:	End of 2nd Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		▪ telephone notification; ▪ verbal notice; ▪ notice of violation; and ▪ meetings. o Formal responses may include: ▪ administrative order; ▪ compliance schedule; ▪ order to show cause; ▪ monetary penalty (administrative); and ▪ suspended service. o Judicial responses may include: ▪ injunctive relief; ▪ consent decree; ▪ civil penalties; and ▪ criminal penalties. • Submit the ERP with the 2nd Annual Report.	
	All	v. • Implement ERP.	End of 2nd Permit Year
e. Proactively inspect, during dry weather, all outfalls to detect illicit discharges and connections into the MS4 and identify high priority outfalls.	All	i. • Inspect and screen all of the permittee's outfalls during dry weather using the outfall field screening protocol developed by the *Center for Watershed Protection* or equivalent process. • This process shall be completed by the end of the permit cycle.	Completed by the end of the 5th year. Progress documented in the Annual Reports.
	All	ii. • Using inspection and screening results, storm sewer maps, and other appropriate data, determine high priority outfalls. • Priority is to be determined by the permittee and shall be based on potential water quality impact. When determining high priority outfalls, permittees must consider, at a minimum, outfalls:	End of 2nd Permit Year Reevaluate during 3rd, 4th, and 5th Permit Years

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		○ which drain industrial areas (as identified by the Small MS4s zoning regulations or growth policy); ○ where illicit discharges have been detected during past permit terms; ○ which drain areas prone to incidents of illegal dumping; ○ which drain the oldest portions of the Small MS4s storm sewer infrastructure; ○ which serve areas primarily served by onsite sewage disposal systems; and/or ○ which discharge into an impaired water body. • Submit the list of high-priority outfalls with each 2nd – 5th Annual Reports. The 3rd-5th Year lists may reflect updated priority outfalls based on screening results.	
	All	iii. • Inspect and screen high priority outfalls during dry weather a minimum of once per year. • Submit a summary of screening results with each 3rd – 5th Annual Report.	During 3rd, 4th, and 5th Permit Years
f. Consistently and effectively investigate suspected illicit discharges and connections and track subsequent compliance actions.	All	i. • Develop an Illicit Discharge Investigation and Corrective Action Plan. This plan will describe the process that will be used to: ○ locate the source of an illicit discharge and ○ select the appropriate corrective action, i.e. enforcement action, abatement, etc. ○ At a minimum, this plan shall include processes to: ▪ investigate all illicit discharges within 7 calendar days. Document circumstances that prevented this timeframe;	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		▪ prioritize non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated for investigation first; ▪ confirmed illicit connections must be eliminated within a goal timeframe of 6 months. Document circumstances that prevented this timeframe; ▪ notify Montana DEQ and appropriate agencies of dry weather flows believed to be an immediate threat to human health or the environment; ▪ document that a good faith effort was made to find the source of the dry weather discharge and document each phase of the investigation in a case file; and, ▪ resolve and document the conclusion of all investigations. ▪ The outfall where any illicit discharge is detected shall continue to be considered high priority and should be investigated as required in the permit. ▪ The plan should refer to the permittee's ERP for execution of appropriate enforcement actions. ▪ Submit the plan with the 1st Annual Report.	
	All	ii. • Implement an Illicit Discharge Investigation and Corrective Action Plan.	End of 2nd Permit Year
	Traditional MS4s	iii. ▪ Maintain documentation which describes the investigations conducted and corrective actions taken per the Illicit Discharge Investigation	During 2nd, 3rd, 4th, and 5th Permit Years

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		and Corrective Action Plan during dry weather screening or through other detection methods, e.g. public complaints. ▪ Submit summary with each Annual Report.	
	Non-Traditional MS4s	iv. ▪ Maintain documentation which describes the investigations conducted and corrective actions taken per the Illicit Discharge Investigation and Corrective Action Plan by the permittee or a neighboring MS4 for all illicit discharges – detected on the permittee's property that originates outside of the permittee's property – during dry weather screening or through other detection methods, e.g. public complaints. ▪ Submit summary with each Annual Report.	During 2nd, 3rd, 4th, and 5th Permit Years

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
4. CONSTRUCTION SITE STORM WATER MANAGEMENT The permittee shall develop, implement, and enforce a program to reduce pollutants in storm water runoff to the permitted Small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If the Department waives its permitting requirements for storm water discharges associated with construction activity that disturbs less than five acres of total land area in accordance with ARM 17.30.1105(5), the Small MS4 permittee is not required to develop, implement, and/or enforce a program to reduce pollutant discharges from such sites.			
a. To the extent allowable under State, or local law, effectively require, through ordinance, or other regulatory mechanism, erosion and sediment controls and controls of other construction-related pollutant sources	Traditional MS4s	i. • If not completed previously, adopt an ordinance or other mechanism to require construction storm water controls on private and permittee-owned regulated projects. • At a minimum the ordinance or other regulatory mechanism must:	End of 3rd Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
on regulated construction projects (construction storm water controls) and implement appropriate enforcement procedures and actions.		○ require the construction storm water management minimum standards described as Non-Numeric Technology-Based Effluent Limits in the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity to be implemented on all regulated construction projects, and ○ provide the permittee the authority to inspect privately-owned construction storm water management controls. • Submit with 3rd Annual Report.	
	Non-Traditional MS4s	ii. • If not completed previously, at a regulatory minimum, adopt formal policies or other mechanisms to the extent allowable, such as contractual requirements applicable to contractors performing construction work requiring construction storm water controls on permittee-owned/operated projects. The permittee must consider and document private development projects regardless of legal authority. • Submit authority summary, written policy, and written procedures with the 3rd Annual Report.	End of 3rd Permit Year
	All	iii. • Develop a formal ERP to ensure compliance with the construction storm water management regulatory mechanisms on regulated projects including private property. The sanctions and enforcement mechanisms to be used to ensure compliance will be included.	End of 3rd Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		• The ERP must describe how the permittee will: o eliminate and abate illegal construction discharges; o identify staff with enforcement authority; o enforcement actions available and enforcement escalation process and include a schedule to be utilized to quickly, and consistently eliminate the source of the discharge; and o abate any damages and prevent recurrence. • The ERP must include informal, formal, and judicial responses. o Informal responses may include telephone notification, verbal notice, notice of violation, and meetings. o Formal responses may include administrative order, compliance schedule, order to show cause, monetary penalty (administrative), and suspended service. o Judicial response may include injunctive relief, consent decree, civil penalties, and criminal penalties. • In addition, the ERP must also include non-monetary construction project-specific penalties such as stop work orders, bonding requirements, and/or permit denials for non-compliance. • Submit documentation of progress towards creation of ERP with the 1st Annual Report. • Submit adopted ERP with the 3rd Annual Report.	

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
	All	iv. • Implement ERP.	End of 4th Permit Year
b. Require that all regulated construction projects submit a construction storm water management plan prior to construction which is consistent with state and local requirements and which incorporates consideration of potential water quality impacts including storm water pollution prevention through appropriate erosion, sediment, and waste control BMPs. The storm water pollution prevention plan (SWPPP) developed pursuant to the MPDES General Permit for Storm Water Discharges Associated With Construction Activity (Permit Number MTR100000) may substitute for this site plan for projects where a SWPPP is developed.	Traditional MS4s	i. • Develop a construction storm water management plan review checklist that documents, at a minimum, that the requirements described in the Non-Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity have been included on all regulated project construction storm water management plans. • The construction storm water management plan review checklist shall be used to ensure consistent review of submitted plans and to determine and document compliance with state and local requirements. • Submit with the 1st Annual Report.	End of 1st Permit Year
	Traditional MS4s	ii. • Implement construction storm water management plan review checklist.	End of 1st Permit Year
	Non-Traditional MS4s	iii. • Develop and implement a plan review checklist which documents, at a minimum, that the requirements described in the Non-Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity have been included on all permittee-owned/operated project site plans. The permittee may modify the plan review checklist based on the maximum extent of contractual agreements with documentation. • The plan review checklist shall be used to ensure consistent review of submitted plans for permittee-owned/operated projects and	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		to determine and document compliance with state and local requirements. • Submit with the 1st Annual Report.	
c. Ensure that all construction storm water management controls are installed, operated and maintained in order to function as designed.	Traditional MS4s	i. • Develop an inspection form or checklist to ensure consistent and thorough regulated project inspections. • The checklist shall include, at a minimum, the requirements described in the Non-Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity. • Submit with the 1st Annual Report.	End of 1st Permit Year
	Non-Traditional MS4s	ii. • Develop an inspection form or checklist to ensure consistent and thorough regulated project inspections. • The checklist shall include, at a minimum, the requirements described in the Non-Numeric Technology-Based Effluent Limits of the most current Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity. The permittee may modify the plan review checklist based on the maximum extent of contractual agreements with documentation. • Submit with the 1st Annual Report.	End of 1st Permit Year
	All	iii. • Conduct inspections using inspection form.	End of 1st Permit Year
	All	iv. • Develop and maintain/update a regulated project inventory to include, at a minimum, if the project is covered under the Montana DEQ General Permit for Storm Water Discharges Associated with Construction Activity and associated authorization number, the location, size, topography of site and proximity to	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		waterbodies for each project.	
	All	v. • Develop an inspection frequency determination protocol based upon the priority of the project. • Priority is to be determined using specific criteria to include – at a minimum: o project size; o proximity to a water body; o steepness of project site slopes; o discharge to waterbodies impaired for pollutants expected from active construction projects; and o past record of non-compliance by the operator of the construction site. • The protocol shall establish the following minimum inspection frequency for all high priority projects: o once at commencement of construction after BMPs have been implemented; o once within 48-hours after each rain event of 0.25 inches or greater; o once within 48-hours after each occurrence of runoff from snowmelt due to thawing conditions that causes visible surface erosion at the site; and o once at the conclusion of the project prior to finalization (i.e. release of bond, issuance of certificate of occupancy, etc.). • In addition, the inspection frequency shall include: o recidivism reduction measures such as incentives; o disincentives; or	End of 1st Permit Year

Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
		○ increased inspection frequency at non-compliant operator's sites.	

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
5.	POST-CONSTRUCTION SITE STORM WATER MANAGEMENT IN NEW AND REDEVELOPMENT The permittee shall develop, implement, and enforce a program to address storm water 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 of development or sale, that discharge into the permitted Small MS4. This program must ensure that controls are in place that would prevent or minimize water quality impacts.			
a.	To the extent allowable under State, or local law, effectively require, through ordinance, or other regulatory mechanism, post-construction storm water management controls and on regulated projects and implement appropriate enforcement procedures and actions.	Traditional MS4s	i. • If not completed previously, adopt an ordinance or other mechanism to require post-construction storm water management controls on regulated projects that, at a minimum, include the performance standard described in Part II.A.5.b.iii. • Submit with 4th Annual Report	End of 4th Permit Year
		Non-Traditional MS4s	ii. • If not completed previously, at a regulatory minimum, adopt formal policies or other mechanisms to the extent allowable, such as contractual requirements applicable to contractors performing construction work requiring post-construction storm water controls on permittee-owned/operated projects. The permittee must consider and document private development projects regardless of legal authority. • Submit authority summary, written policy, and written procedures with the 4th Annual Report	End of 4th Permit Year
		All	iii. • Develop a formal ERP to ensure compliance with installation, operation and maintenance	End of 4th Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			requirements for post-construction storm water management controls on regulated projects including private property. • The ERP must include informal, formal, and judicial responses. o Informal responses may include: ▪ telephone notification; ▪ verbal notice; ▪ notice of violation; and ▪ meetings. o Formal responses may include: ▪ administrative order; ▪ compliance schedule; ▪ order to show cause; ▪ monetary penalty (administrative); and ▪ suspend service. o Judicial responses may include: ▪ injunctive relief; ▪ consent decree; ▪ civil penalties; and ▪ criminal penalties. • The ERP must describe: o legal authority to require inspection and maintenance of controls; o identify staff with enforcement authority; o the enforcements actions available; o enforcement escalation process; and o schedule to be utilized to quickly and consistently ensure compliance with post-construction requirements. • Submit the ERP with the 4th Annual Report.	
		All	iv. • Implement ERP.	End of 5th Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
b.	Require that all regulated development projects submit a site plan which is consistent with state and local post-construction requirements which incorporates consideration of potential water quality impacts including appropriate post-construction storm water management controls.	Traditional MS4s	i. • Develop and implement a plan review checklist to ensure consistent review of submitted plans and to determine and document compliance with state and local post-construction requirements • Submit with the 1st Annual Report.	End of 1st Permit Year
		Non-Traditional MS4s	ii. • Develop and implement a plan review checklist to ensure consistent review of plans for permittee-owned/operated projects and to determine and document compliance with state and local post-construction requirements. The permittee may modify the plan review checklist based on the maximum extent of contractual agreements with documentation. • Submit the checklist with the 1st Annual Report	End of 1st Permit Year
		All	iii. • Require that all regulated projects implement post-construction storm water management controls that are designed to infiltrate, evapotranspire, and/or capture for reuse the post-construction runoff generated from the first 0.5 inches of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation. For projects that cannot meet 100% of the runoff reduction requirement, the remainder of the runoff from the first 0.5 inches of rainfall must be either: a. Treated onsite using post-construction storm water management control(s) expected to remove 80 percent total suspended solids (TSS); b. Managed offsite within the same sub-watershed using post-construction storm	End of 1st Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			water management control(s) that are designed to infiltrate, evapotranspire, and/or capture for reuse; or c. Treated offsite within the same sub-watershed using post-construction storm water management control(s) expected to remove 80 percent TSS. • Permittees allowing offsite treatment shall do the following: a. Develop and apply criteria for determining the circumstances under which offsite treatment may be allowed. • The criteria must be based on multiple factors, including but not limited to: i. technical or logistic infeasibility (e.g. lack of available space; ii. high groundwater; iii. groundwater contamination; iv. poorly infiltrating soils; v. shallow bedrock; vi. prohibitive costs; and vii. a land use that is inconsistent with capture and reuse or infiltration of storm water). • Determinations may not be based solely on the difficulty and/or cost of implementation. • The permittee must develop a formal review and approval process for determining projects eligible for offsite treatment. • The offsite treatment option is to be used only after all onsite options have	

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			been evaluated and documented through the permittee's developed formal review and approval process. b. Create and maintain an inventory of regulated projects which utilize offsite treatment of post-construction storm water runoff. The inventory must include the following information pertaining to each approved project: • Geographic location of the project; • Location of the offsite treatment facility which the project drains to; and • Documentation of the rationale for approval of offsite treatment. • Submit adopted performance standards with the 1st Annual Report.	
c.	Ensure that all post-construction storm water management controls are installed, operated and maintained in order to function as designed.	Traditional MS4s	i. • Develop and implement an inspection form or checklist to ensure consistent and thorough inspections of post-construction storm water management controls. • Submit with 2nd Annual Report.	End of 2nd Permit Year
		Non-Traditional MS4s	ii. • Develop and implement an inspection form or checklist to ensure consistent and thorough inspections of post-construction storm water management controls. • The permittee may modify the inspection form or checklist based on the maximum extent of contractual agreements with documentation. • Submit with 2nd Annual Report.	2nd Permit Year
		All	iii. • Develop and maintain/update an inventory (including at a minimum, a description and location) of all **new** permittee-owned and	End of 2nd Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			private post-construction storm water management controls installed since the effective date of the permit.	
		Traditional MS4s	iv. • Develop and maintain/update an inventory (including at a minimum, a description and location) of all **existing** permittee-owned and private high priority post-construction storm water management controls installed prior to the effective date of the permit. • Priority is to be determined by the permittee and should be based on potential water quality impact using specific criteria which may include: o operation and maintenance needs of the practices; o proximity to water body; o drainage area treated; o land use type; and o location within an impaired waterbody watershed.	End of 3rd Permit Year
		Non-Traditional MS4s	v. • Develop and maintain/update an inventory (including a description and location) of all existing permittee-owned post-construction BMPs.	End of 3rd Permit Year
		All	vi. • Develop an inspection frequency determination protocol based upon the priority of the post- construction storm water management control. • Priority is to be determined by the permittee and should be based on potential water quality impact using specific criteria which may include: o operation and maintenance needs	End of 2nd Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			of the practices; o proximity to water body; o drainage area treated; o land use type; and o location within an impaired waterbody watershed. • Submit protocol with 2nd Annual Report.	
		Traditional MS4s	vii. • Develop a program to either: o conduct inspections of high-priority post-construction storm water management controls at least annually, OR o to require self-inspection and reporting by owners at least annually. o Submit program description with 2nd Annual Report.	End of 2nd Permit Year
		All	viii. • Inspect permittee-owned high priority post-construction storm water management controls annually and document findings and resulting compliance actions.	During the 3rd, 4th, and 5th Permit Years
		Traditional MS4s	ix. • Inspect or have inspected all high priority privately-owned post-construction storm water management controls annually • Document findings and resulting compliance actions.	During the 3rd, 4th, and 5th Permit Years
d.	Incorporate recommendations and requirements into plans, policies and ordinances which allow and support the utilization of LID concepts on public and private property.	All	i. • Convene appropriate staff and conduct a discussion to evaluate existing barriers to implementing LID infrastructure in the permittee's codes, ordinances and policies. • The outcome of this discussion must identify opportunities for change and address the potential inconsistencies between policies. • Appropriate staff must include member(s) of various departments, some of which may	End of 4th Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			include: o Parks and Recreation; o Public Works; o Planning; o Environmental Protection; o Utilities; and o Transportation. • Submit a summary of the discussion outcomes with the 4th Annual Report.	

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
6.	POLLUTION PREVENTION /GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS The permittee shall develop and implement an operation and maintenance program which includes a training component, and has the ultimate goal of preventing or reducing pollutant runoff from permittee operations.			
a.	Identify the operation and maintenance program to prevent or reduce pollutant runoff from permittee-owned/operated facilities and field activities.	All	i • Create an inventory of permittee-owned/operated facilities and activities that have the potential to release contaminants to the MS4. The inventory should include, at a minimum, the following: 1. Facilities: • maintenance and storage yards; • waste handling and disposal areas; • vehicle fleet or maintenance shops with outdoor storage areas; • salt/sand storage locations; and • snow or dredge material disposal areas operated by the permittee. 2. Activities: • park and open space maintenance;	End of 1st Permit Year

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			• parking lot maintenance; • building maintenance; • road maintenance/deicing; and • storm water system maintenance including catch basin cleaning. • List the possible contaminant(s) from each facility/activity and list the local department(s) and position(s) responsible for pollution prevention with each facility/activity. • Update the inventory annually.	
		All	ii. • Develop a map that identifies the locations of facilities and known locations of activities identified in 6.a.i. • Update the map annually.	During the 2nd, 3rd, 4th, and 5th Permit Years
		All	iii. • Organize similar facilities and activities identified in 6.a.i. into categories, label the categories, and develop standard operating procedures (SOPs) for all categories. • Development of the SOPs must include documented inspections and communication with relevant department personnel of 2 facilities/activities per category prior to SOP category completion. • The SOPs must identify storm water pollution controls (structural and non-structural controls, and operation improvements) to be installed, implemented, and/or maintained to minimize the discharge of contaminants. • The permittee must complete, at a minimum, the	During the 2nd, 3rd, 4th, and 5th Permit Years

	Minimum Measure	Permittee	Required BMP	Deadline/ Implementation Schedule
			required SOPs according to the following schedule: o one-fourth by the end of the 2nd permit year; o one-half by the end of the 3rd permit year; o three-fourths by the end of the 4th permit year; and o all by the end of the 5th permit year. • Submit the completed SOPs annually starting with the 2nd Annual Report.	
		All	iv. • Develop and internally document storm water pollution prevention training in conjunction with the development of the SOPs for each category.	During the 2nd, 3rd, 4th, and 5th Permit Years
		All	v. • Conduct annual storm water pollution prevention training for all permittee staff directly involved with implementing SOPs. • Trainings will be conducted during the next permit year after development of each SOP. ***Example: SOP and training developed in 2nd Permit Year. Training conducted in 3rd Permit Year.*** • Retain records of completed trainings and attendance.	During the 3rd, 4th, and 5th Permit Years

B. Training

The permittee is required to conduct and/or coordinate the following training and track/document of all municipal staff participation in each:

1. Conduct comprehensive training during the 1st year of the permit term for all members of the storm water management team to educate them about the new permit, the updated SWMP and implementation responsibilities for the upcoming permit term. New members of the storm water management team must receive the equivalent amount of training within 90 days of the hire date.
2. Conduct storm water awareness training, at a minimum, during 1st and 4th years of the permit term for all appropriate permittee field staff (and pretreatment inspection staff) and staff who work at permittee facilities. The training must provide education regarding storm water impacts, the MS4 permit, the detection and elimination of illicit discharges and the implementation of the ERP, and specifically address BMPs necessary to minimize discharges of pollutants during permittee activities or the operation of permittee facilities. Appropriate new field staff and staff who work at permittee facilities must receive the equivalent amount of training within 90 days of the hire date.
3. Conduct training, at a minimum, during the 1st and 4th years of the permit term for all inspectors and plan reviewers responsible for implementation of the Construction Site Storm Water Management Control Minimum Measure. Inspector training shall include inspection protocol and the implementation of the ERP upon development. New inspectors and plan reviewers must receive the equivalent amount of training within 90 days of the hire date.
4. Conduct training, at a minimum, during the 1st and 4th years of the permit term for all inspectors and plan reviewers responsible for implementation of the Post-Construction Storm Water Management in New Development and Redevelopment Minimum Measure. Inspector training shall include inspection protocol and the implementation of the ERP. New inspectors and plan reviewers must receive the equivalent amount of training within 90 days of the hire date.
5. Conduct training, at the schedule outlined within Part II.6.a.v, for storm water staff responsible for implementing Standard Operating Procedures (SOPs) developed as a requirement of the Pollution Prevention/Good Housekeeping Minimum Measure. Training must be oriented to staff involved with the SOP-specific duties. New storm water staff responsible for implementing SOPs must receive the equivalent amount of training within 90 days of the hire date.

C. Sharing Responsibility

In accordance with 17.30.1111(7), a small MS4 may share responsibility to implement the minimum control measures with another entity in order to satisfy their MPDES permit obligations to implement a minimum control measure. Shared responsibility is allowed only if the other entity implements the control measure, and the particular control measure, or component thereof, to a degree at least as stringent as the corresponding MPDES permit requirement. The other entity must agree to implement the control

measure on behalf of the owners and operators of the regulated small MS4. Written acceptance of this obligation is required. This obligation must be maintained as part of the description of the permittee's SWMP. In annual reports, the owners and operators must specify that they are relying on another entity to satisfy some of their permit obligations, unless the other entity is responsible to file the reports. The MS4 remains responsible for compliance with its permit obligations if the other entity fails to implement the control measure (or component thereof).

The MS4 should enter into a legally binding agreement with the other entity in order to minimize uncertainty about compliance with the MPDES permit.

D. Qualifying Local Program

If the application indicates a Qualifying Local Program requires a Small MS4 to implement one or more of the six minimum control measures as stated in ARM 17.30.1111 (9), and the permittee elects to do this in the application, then the permittee is directed to follow that qualifying program's requirements rather than the applicable storm water management program requirements stated in Part II.A.

E. Transfer of Ownership, Operational Authority, or Responsibility for SWMP Implementation

The permittee must implement the SWMP on all new areas added to the permittee's portion of the Small MS4 (or for which the permittee becomes responsible for implementation of storm water quality controls) as expeditiously as possible. Implementation may be accomplished as part of a phased plan to allow additional time for controls that cannot be implemented immediately.

Within 90 days of a transfer of ownership, operational authority, or responsibility for SWMP implementation, the permittee must have a plan for implementing the SWMP on all newly added areas. The plan may include schedules for implementation. Information on all new annexed areas and any resulting updates required to the SWMP must be included in the Annual Report.

F. Storm Water Management Program Updates Required by the Department

The Department may require changes to the SWMP as needed to:

1. Address impacts on receiving water quality caused, or contributed to, by discharges from the Small MS4;

2. Include more stringent requirements necessary to comply with new federal statutory or regulatory requirements; or

3. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the Montana Water Quality Act.

4. Update BMPs as necessary to improve program effectiveness per information and data submitted in permittees' Annual Reports.

5. Changes requested by the Department must be made in writing, set forth the time schedule for the permittee to develop the changes and update their program, and offer the permittee the opportunity propose alternatives to their program to meet the objective of the requested changes.

Part III. Special Conditions

A. Water Quality Controls for Storm Discharges to Impaired Waterbodies Pre-Total Maximum Daily Load (TMDL) Approval

The permittee's Storm Water Management Program (SWMP) must identify all outfalls that discharge to impaired waterbodies, the impaired waterbodies, and the associated pollutant(s) of impairment. Information on impaired waterbodies may be obtained from the Department or from the Montana DEQ Clean Water Act Information Center website: http://cwaic.mt.gov/. This information will be submitted with each Annual Report.

The permittee's SWMP must include a section that describes BMPs that target and reduce discharges of the identified pollutant(s) of impairment to impaired waterbodies without an approved TMDL. *The permittee should only identify pollutants of impairment from **Table 1** in Part IV.* The permittee's Annual Report must contain a summary of BMPs implemented over the reporting period and a schedule of BMPs planned for the following year.

B. Water Quality Controls for Storm Discharges to Impaired Waterbodies with Approved TMDL Wasteload Allocations (WLAs)

Addressing TMDLs in the SWMP

Appendix A of the permit contains a list of TMDLs with WLAs assigned to MS4s approved by the Department and EPA as of the effective date of this permit. The permittee's SWMP must identify all outfalls that discharge to impaired waterbodies with an approved MS4 WLA, the impaired waterbodies, and the associated pollutant(s) of impairment. This information will be submitted with each Annual Report.

The permittee must include in its SWMP a section identifying the measures and BMPs it plans to implement, describing the MS4's impairment priorities and long term strategy, and outlining interim milestones (i.e., a completion schedule for action items) for controlling the discharge of the pollutants of concern and making progress towards meeting the TMDL. **TMDL-Related Monitoring**, below, will be incorporated into this section.

The TMDL section of the SWMP must be submitted with the 4th year Annual Report for approval. The permittee will begin to implement the approved section no later than the start of the 5th permit year. The section must be annually evaluated based on monitoring results, revised as needed, and resubmitted with Annual Reports beginning with the 5th year Annual Report. Rationale must be provided for any revisions to this section. Revisions must be approved by the Department.

TMDL-Related Monitoring

The permittee must supplement the Self-Monitoring Requirements in Part IV with additional monitoring targeted at further evaluating MS4 loading to impaired waterbodies (Option 1) or at evaluating the effectiveness of BMPs selected for reducing MS4 loading to impaired waterbodies (Option 2). The same sample sites may be used for Self-Monitoring and TMDL Monitoring. Each permittee must inform the Department of its preferred Monitoring Option (1 or 2) with application for coverage under this renewed General Permit. Monitoring will begin no later than March 1 of the 2nd permit year.

Monitoring Option 1

1. At a minimum, the MS4 will select four sampling locations that discharge to impaired waterbodies. The location of these outfalls should consider the largest drainage areas, the surrounding land uses which could contribute to impairments, and high priority areas as identified by the IDDE minimum control measure. The permittee must submit a Sampling Plan to the Department for approval with the first Annual Report. The Sampling Plan should include strategy rationale, monitoring frequency, monitoring parameters, and monitoring locations. After the Sampling Plan is approved by the Department, the Permittee must provide a mechanism for public review of the plan.

2. Monitoring will be conducted semi-annually. Specific monitoring parameters will include pollutant(s) listed as a source of impairment specific to the receiving waterbody from the MS4. Monitoring data must be collected following procedures in 40 CFR Part 136, unless other test procedures have been specified in this General Permit.

Monitoring Option 2

1. As determined by the permittee and approved by the Department, Monitoring Option 2 provides the flexibility for a MS4-specific monitoring strategy that will provide the data required to track and evaluate effectiveness of BMPs. The permittee must submit a Sampling Plan to the Department for approval with the first Annual Report. The Sampling Plan should include strategy rationale, monitoring frequency, monitoring parameters, and monitoring locations. After the Sampling Plan is approved by the Department, the Permittee must provide a mechanism for public review.

Part IV. Monitoring, Recording and Reporting Requirements

A. Self-Monitoring Requirements

Storm water monitoring requirements must initiate: (1) on the effective date of authorization issued under this General Permit, (2) as outlined by Part IV.A.4., or (3) as otherwise directed by the Department. The Department reserves the right to require additional storm water sampling, testing, and reporting on a case-by-case basis.

1. Storm Water Discharge Monitoring

All permittees are required to perform sampling, testing, and reporting of storm water discharges for their Small MS4s under this General Permit, or as otherwise required by the Department.

2. Specific Monitoring Parameters

The required monitoring parameters are listed in Table 1.

Table 1. Small MS4 Monitoring Requirements

Parameter[1][2]	**Frequency**	**Type**[3]
Total Suspended Solids (TSS), mg/L	Semi-annual	Grab or Composite
Chemical Oxygen Demand (COD), mg/L	Semi-annual	Grab or Composite
Total Phosphorus, mg/L	Semi-annual	Grab or Composite
Total Nitrogen, mg/L	Semi-annual	Grab or Composite
pH, standard units	Semi-annual	Instantaneous
Copper, mg/L	Semi-annual	Grab or Composite
Lead, mg/L	Semi-annual	Grab or Composite
Zinc, mg/L	Semi-annual	Grab or Composite
Estimated Flow, gpm	Semi-annual	Instantaneous[4]
Oil and Grease[5], mg/L	Semi-annual	Grab

(1) Detection limits are pursuant to levels defined in Circular DEQ-7.
(2) Total recoverable methods to be used on all metals.
(3) See Definitions in Part VI. of this General Permit.
(4) Estimated flow rates are appropriate in cases where measurement gauges are not installed.
(5) Hexanes extraction (EPA Method 1664A).

3. Monitoring Locations

Permittees will choose from the two monitoring location options below and submit their selected option to the Department with their application for General Permit coverage:

a. Monitoring Option 1

For each semi-annual monitoring period, MS4 permittees must sample at the following locations within the permitted geographic area during a storm event with a measurable amount of discharge:

- 2 discharge points which represent storm water runoff drainage areas from a relatively commercial and/or industrial area; and,
- 2 discharge points which represent storm water runoff drainage areas from a relatively residential area.

Monitoring locations must be consistently identified as "001A" and "001B" for the industrial/commercial locations, and "002A" and "002B" for the residential locations. If a new monitoring location is added or used to replace an existing monitoring location, the new location will be identified according to the numeric alphabet scheme above.

b. Monitoring Option 2

For each semi-annual monitoring period, MS4 permittees must establish a network of at least four (4) monitoring locations and sample during a storm event with a measurable amount of discharge. At least one (1) monitoring location shall contain storm water runoff from a predominantly commercial and/or residential area and one (1) monitoring location shall contain storm water runoff from a predominantly residential area. At least one (1) monitoring location may be upstream, outside the MS4 boundary to evaluate water quality entering the MS4.

Monitoring locations must be consistently identified using a naming scheme of the permittee's choice, but the permittee can only use a chosen name once. If a new monitoring location is added or used to replace an existing monitoring location, a new name must be selected for the new location.

4. Storm Water Discharge Monitoring Schedule

Permittees authorized under the 2015 General Permit that were not required to monitor and obtain coverage under the 2017 General Permit are required to self-monitor starting January 1, 2018.

New authorizations under the 2017 General Permit (not authorized under the 2015 General Permit) are required to self-monitor starting three years from the date of authorization. These prescribed monitoring schedules provide flexibility for the permittee to establish a self-monitoring program.

5. Impaired Waterbodies Monitoring

Permittees with a storm water discharge to an impaired waterbody must conduct storm water discharge monitoring according to Part III. Special Conditions. Permittees must comply with all requirements associated with the TMDLs.

New authorizations under the 2017 General Permit (not authorized under the 2015 General Permit) will apply Part III.A requirements to both storm water discharges to impaired waterbodies with pre-total maximum daily load (TMDL) approval and approved TMDL wasteload allocations. Part III. B is not applicable during this permit cycle.

6. Monitoring Frequency

a. Sampling, testing, and reporting must be conducted at least semi-annually (two times per year) for each of the parameters listed in Table 1 above during a storm event with a measurable amount of discharge. One sample at each monitoring location must be taken between January 1st and June 30th of each permitted calendar year and the other sample between July 1st and December 31st.

b. If a permittee is not able to dependably obtain a sample at the identified required sampling outfall during a six-month monitoring period, rationale must be recorded in the corresponding annual report on why the collection of a sample was impracticable and the permittee must collect a substitute sample during the subsequent six-month monitoring period in addition to the required sample for that six-month monitoring period. The substitute sample and required six-month sample may be collected from back to back storm events with at least 48 hours of no measurable precipitation.

c. If a permittee fails to obtain the required sample for a six-month monitoring period, the permittee may request to replace the monitoring location outfall with appropriate rationale prior to the next calendar year. The Department must approve such requests prior to replacing a monitoring location. The new, approved outfall monitoring location will be identified with an unused outfall name/number. The permittee may not request to replace approved replacement monitoring locations again during the same permit cycle.

7. Monitoring Procedures

   Monitoring must be conducted according to test procedures approved under Part 136, Title 40 of the Code of Federal Regulations, unless other test procedures have been specified in this General Permit.

8. Penalties for Tampering

   The Montana Water Quality Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $25,000, or by imprisonment for not more than six months, or both.

B. Reporting and Evaluation of Monitoring Results

1. Monitoring results shall be submitted to the Department with each annual report.

2. Each annual report shall include a calculation of the long-term median concentration of each parameter in Table 1 of Part IV.A. The long-term median shall be calculated from all known monitoring results for each parameter at a monitoring location.

3. Monitoring results shall be used by permittees to self-evaluate measures taken to improve the quality of storm water discharges. Each annual report shall include an evaluation of the monitoring results relative to the long-term median. The evaluation must include (1) comparisons between monitoring locations, (2) discuss determinations for trends and outliers in monitoring results compared to the calculated long-term median, and results outside a pH range of 6.0 to 9.0 standard units, and (3) a schedule and rationale for BMPs planned to improve water quality of storm water discharges based on monitoring results.

C. Monitoring Records

The following information must be recorded and maintained at the office of the contact person/position for all storm water discharges which are sampled:

1. Date, exact place, and time of sampling;
2. Estimated duration (in hours) of the storm event(s) sampled;
3. Total rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff;
4. Name(s) of the individuals which performed the sampling or measurements; and
5. Analytical laboratory test result data and reports for storm water samples, and/or records, which minimally indicate:
   a. The date(s) analyses were performed;
   b. The time analyses were initiated;
   c. The initials or name(s) of individual(s) who performed the analyses;

d. References and written procedures, when available, for the analytical techniques or methods used; and
e. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc. used to determine these results.

D. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this General Permit, and records of all data used to complete the application for this General Permit, for a period of at least three years from the date of sample, measurement, report, or application.

E. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained an any compliance schedule of the permit must be submitted to DEQ in either electronic or paper format and be postmarked no later than 14 days following each schedule date unless otherwise specified in the permit.

F. Annual Report

1. The permittee (or co-permittee if co-permitted under one permit authorization number) shall prepare and submit an annual report to the Department for each calendar year within the General Permit term.
2. The permittee shall electronically submit the signed copy of the annual report form and required attachments to the Department by March 1st of each year for the preceding calendar year. Electronic submission is through NetDMR.
3. Each co-permittee shall submit an annual report form pertaining to their respective permitted Small MS4(s) unless formal written shared responsibilities allow another entity to complete the annual report form obligations.
4. The Department has provided an annual report form for use by all permittees or co-permittees.
5. If additional information is requested with the annual report form, then the permittee must submit this additional information at the same time as the form.
6. Monitoring results and evaluations, as required in Part IV.B of the General Permit, must be attached to the annual report form.
7. If the permittee or co-permittee has made any updates, changes, or improvements to their Storm Water Management Program during the prior calendar year, then an attachment to the annual report must provide a date and description of these updates, changes, or improvements.
8. Full-size, hard-copies of storm sewer system maps, including updates, must be submitted directly to the Department by March 1st of each year if the map(s) was developed or modified during the calendar year for which the annual report pertains.
9. The completion of this annual report must initiate for the calendar year in which authorization under the General Permit was issued.

10. The annual report must comply with the signatory and certification requirements as stated in Part VI.
11. Updates or revisions to submitted documents after the initial required submittal per development of the SWMP as outlined in Part II shall be retained onsite with the last revision date, and documents must be available upon request.

G. Changes in Storm Water Coordinator

The application identifies a formal Storm Water Coordinator for each permittee or co-permittee. Should the Storm Water Coordinator person/position, mailing address, email address, or telephone number identified on the Application Form change, the permittee or co-permittee must notify the Department in writing of this change within 15 calendar days of the change. This written notification must specifically reference that there is a "change of the Storm Water Coordinator", specifically identify the permit authorization number, and specifically identify the formal "Small MS4 Name" as identified on the application. The written notification letter for a change in the Storm Water Coordinator must be signed by a person meeting the signatory requirements of Part VI.

H. Records For Inspection

A copy of the General Permit, permit authorization letter, required SWMP documents, Annual Reports, Discharge Monitoring Reports (if required), and other pertinent records required by the General Permit shall be maintained by the Storm Water Coordinator for their respective Small MS4, and shall be made available to Department inspectors upon request for all permittees and co-permittees.

I. Inspection and Entry

The permittee shall allow the head of DEQ or the Regional Administrator, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment) practices, operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance, any substance or parameters at any location.

J. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any serious incident of noncompliance affecting the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the Water Protection Bureau at (406) 444-3080 or the Office of Disaster and

Emergency Services at (406) 324-4777. The following examples are considered serious incidents:

a. Any noncompliance which may seriously endanger health or the environment;
b. Any unanticipated bypass which exceeds any effluent limitation in the permit; or
c. Any upset which exceeds any effluent limitation in the permit.

2. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
   a. A description of the noncompliance and its cause;
   b. The period of noncompliance, including exact dates and times;
   c. The estimated time noncompliance is expected to continue if it has not been corrected already; and
   d. DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Protection Bureau, by phone, (406) 444-3080.
   e. Reports shall be submitted to the following address:
   DEQ Water Protection Bureau, PO Box 200901, Helena, MT 59620.

K. Other Required Reporting

1. The permittee shall report any serious incident of illicit discharge within permitted MS4 boundaries that affects the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the Water Protection Bureau at (406) 444-3080.

2. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
   a. A description of the illicit discharge and its cause/origin;
   b. The period of illicit discharging, including exact dates and times;
   c. The estimated time for correction of the illicit discharge if it has not been corrected already; and
   d. DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Protection Bureau, by phone, (406) 444-3080.
   e. Reports shall be submitted to the following address:
   DEQ Water Protection Bureau, PO Box 200901, Helena, MT 59620.

Part V. Compliance Responsibilities

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Montana Water Quality Act and is grounds for enforcement action; for termination under the General Permit; or for denial of coverage under this General Permit renewal. The permittee shall give the Department advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance.

B. Penalties for Violations of Permit Conditions

The Montana Water Quality Act provides that any person who violates a permit condition of the Act is subject to civil or criminal penalties not to exceed $25,000 per day or one year in prison, or both, for the first conviction, and $50,000 per day of violation or by imprisonment for not more than two years, or both, for subsequent convictions. MCA 75-5-611(a) also provides for administrative penalties not to exceed $10,000 for each day of violation and up to a maximum not to exceed $100,000 for any related series of violations. Except as provided in permit conditions "Bypass of Treatment Facilities" and "Upset Conditions", nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard.

Part VI. General Requirements

A. Planned Changes

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition could significantly change the nature or increase the quantity of pollutant discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit.

B. Anticipated Noncompliance

The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The reapplication must be submitted at least 90 days before the expiration date of this permit.

E. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

F. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in an application, or submitted incorrect information in an application or any report to the Department, it shall promptly submit such facts or information with a narrative explanation of the circumstances of the omission or incorrect submittal and why they weren't supplied earlier.

G. Signatory Requirements

All applications, reports or information submitted to the Department or the EPA shall be signed and certified.

1. All permit notices of intent shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is considered a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Department; and

   b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or an individual occupying a named position.

3. Changes to authorization. If an authorization described above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the above requirements must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports

The Montana Water Quality Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $25,000 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by the Clean Water Act, applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

K. Property Rights

The issuance of this permit does not convey any property or water rights of any sort, or any exclusive privileges.

L. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers

This permit is not transferable to a new permittee. A new owner or operator of a facility must apply according to the standard application procedures 30 days prior to taking responsibility for the facility.

N. Fees

The permittee is required to submit payment of an annual fee as set forth in ARM 17.30.201. If the permittee fails to pay the annual fee within 90 days after the due date for the payment, the Department may:

1. Impose an additional assessment computed at the rate established under ARM 17.30.201: and,

2. Suspend the processing of the application for a permit or authorization or, if the nonpayment involves an annual permit fee, suspend the permit, certificate or authorization for which the fee is required. The Department may lift suspension at any time up to one year after the suspension occurs if the holder has paid all outstanding fees, including all penalties, assessments and interest imposed under this sub-section. Suspensions are limited to one year, after which the permit will be terminated.

O. Reopener Provisions

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different permit conditions than contained in this permit.

2. Water Quality Standards are Exceeded: If it is found that water quality standards or trigger values in the receiving stream are exceeded either for parameters included in the permit or others, the Department may modify the permit conditions or water management plan.

3. TMDL or Wasteload Allocation: TMDL requirements or a wasteload allocation is developed and approved by the Department and/or EPA for incorporation in this permit.

4. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Toxic Pollutants: A toxic standard or prohibition is established under Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit.

Part VII. Definitions

1. The "Act" means the Federal Clean Water Act.

2. "Best Management Practices" ("BMPs") means schedule of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of state waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

3. "Control measure" as used in this General Permit, means any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to state waters.

4. The "Department" means the Montana Department of Environmental Quality.

5. "Flow-weighted composite sample" means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

6. "Grab Sample" for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

7. "Green Infrastructure" means vegetation, soils, and natural processes used to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to storm water management systems that mimic nature by soaking up and storing water.

8. "Hazardous substance" means any substance designated under 40 CFR Part 116 pursuant to section 311 of the federal Clean Water Act.

9. "Illicit Connection" means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

10. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to an MPDES permit (other than the MPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities.

11. "MEP" is an acronym for "Maximum Extent Practicable", the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by the Clean Water Act, Section 402(p). A discussion of MEP as it applies to Small MS4s is found in ARM 17.30.1111(5). The MEP standard requires the development, implementation, and enforcement of measures including BMPs, control techniques, system design, engineering methods, and other

provisions that the Department determines to be appropriate for the control of such pollutants. MEP is an iterative, dynamic, flexible standard that the permittee shall evaluate and update continuously, as necessary, to better tailor or expand the program based on its effectiveness in reducing pollutant discharge load.

12. "MS4" means a municipal separate storm sewer system.

13. "Municipal separate storm sewer" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that discharges to surface waters and is: (a) owned or operated by the state of Montana, a governmental subdivision of the state, a district, association, or other public body created by or pursuant to Montana law, including special districts such as sewer districts, flood control districts, drainage districts and similar entities, and designated and approved management agencies under section 208 of the federal Clean Water Act, which has jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, and is:
    a. designed or used for collecting or conveying storm water;
    b. not a combined sewer; and
    c. not part of a publicly owned treatment works (POTW) as defined in ARM Title 17, chapter 30, subchapter 13.

14. "Non-Traditional MS4" means MS4s which are designated as Small MS4s but are not cities or counties, such as drainage districts, transportation agencies, municipal utility districts, military bases, prisons and universities.

15. "Outfall" means the physical location where these conveyance structures discharge pollutants or storm water into surface water or where they leave the boundary of the designated MS4.The term does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances that connect segments of the same stream or other surface waters and that are used to convey surface waters.

16. "Owner or operator" means a person who owns, leases, operates, controls, or supervises a point source. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

17. "Process wastewater" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

18. "Small municipal separate storm sewer system" means:
    a. small MS4s, and portions of them, that are located in the following urbanized areas in Montana as determined by the latest decennial census by the United States census bureau:
        i. the city of Billings and Yellowstone County;
        ii. the city of Missoula and Missoula County; and
        iii. the city of Great Falls and Cascade County;
    b. the following small MS4s serving a population of at least 10,000 as determined by the latest decennial census by the United States census bureau and that are located outside of an urbanized area:
        i. MS4s located in the city of Bozeman;
        ii. MS4s located in the city of Butte;
        iii. MS4s located in the city of Helena; and
        iv. MS4s located in the city of Kalispell;
    c. MS4s designated by the department pursuant to 17.30.1107; and
    d. systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large educational, hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

19. "Small MS4" means a small municipal separate storm sewer system.

20. "State waters" is defined at 75-5-103, MCA.

21. "Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

22. "Storm Water Management Program" or "SWMP" means a comprehensive program to manage the quality of storm water discharged from the Small municipal separate storm sewer system.

23. "Surface waters" means any waters on the earth's surface including, but not limited to, streams, lakes, ponds, and reservoirs, and irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir, or other surface water. Water bodies used solely for treating, transporting, or impounding pollutants shall not be considered surface water.

24. "Time-weighted composite sample" means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

25. "Total Maximum Daily Load" or "TMDL" is defined at 75-5-103, MCA.

26. “Traditional MS4” means all cities and counties covered by this General Permit.

27. "Waste Load Allocation" or "WLA" means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources.

Appendix A: TMDLs with MS4 Approved WLAs

Basin: Upper Missouri

Affected MS4s: City of Helena
Pollutants of Concern: Total Phosphorus (TP), Total Nitrogen (TN), Total Suspended Solids (TSS)
MS4 WLA: None specified for Nutrients and Sediment in Prickly Pear Creek and Ten Mile Creek.
Assumptions and Actions Specified by the TMDL: The Department recognized that regulated storm water contributes only a small fraction of the total nutrient load and total sediment load. No additional requirements were imposed for permitted storm water facilities. However, to meet the intent of the TMDL goals and future recommendations, Helena MS4 must follow their permit requirements, evaluate potential impacts to impaired receiving waters, and utilize monitoring to implement an adaptive management approach to minimize pollutant loads.
Name and Date of TMDL: Framework Water Quality Restoration Plan and Total Maximum Daily Loads (TMDLs) for the Lake Helena Watershed Planning Area: Volume II – Final Report (August 2006)
Status of the TMDL: Final
Link to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/M09-TMDL-02a.pdf

Affected MS4s: City of Great Falls
Pollutants of Concern: Total Phosphorus (TP), Total Nitrogen (TN), and Sediment
MS4 WLA: None specified in the Lower Sun River.
Assumptions and Actions Specified by the TMDL:
In 2004, the MS4 was not considered a significant point source and no MS4 WLAs were developed. However, the Department recognized that urban areas have the potential to impact nutrient and sediment loading and future analysis is needed. To meet the intent of the TMDL goals and future recommendations, Great Falls MS4 must follow their permit requirements, evaluate potential impacts to impaired receiving waters, and utilize monitoring to implement an adaptive management approach to minimize pollutant loads.
Name and Date of TMDL: Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River Planning Area (December 2004)
Status of the TMDL: Final
Link to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/M13-TMDL-01a.pdf

Affected MS4s: City of Bozeman, Montana State University-Bozeman
Pollutants of Concern: Total Suspended Solids (TSS), Total Phosphorus (TP), Total Nitrogen (TN), E.coli
MS4 WLAs as follows: Note that WLAs apply to all MS4s that were co-permittees at the time of TMDL development; therefore, WLAs are aggregated and not individually assigned to each MS4.
TSS: The WLA is 137 tons of sediment per year for the Bozeman Creek watershed, which is a 37% reduction from the estimated existing load (218 tons/year). Because of the limited amount of data for Bear Creek, the Bear Creek WLA is also a 37% reduction (3.4 tons/year).
TSS Assumptions and Actions Specified by the TMDL: Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. WLAs are met by adhering to the permit requirements to minimize pollutant loads. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Nutrients: Since the storm water system should not be actively discharging during typical summer low flow conditions, both the existing load and WLA are defined as 0 (zero) for Bozeman Creek (Total Nitrogen), East Gallatin River (Total Nitrogen & Total Phosphorus); Bridger Creek (Nitrate), and Mandeville Creek (Total Nitrogen & Total Phosphorus).
Nutrient Assumptions and Actions Specified by the TMDL: When the storm water system is activated, the WLAs are met by adhering to the permit requirements and that monitoring can be used to implement an adaptive management approach to minimize pollutant loads. The MS4 is assigned a wasteload allocation of zero when the storm water system is not activated or functioning during storm events. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve this WLA, which requires the permittees to regularly update the storm sewer system map, showing the location and number of outfalls.
Escherichia coli (E. coli): The MS4 will be assigned a wasteload allocation of 0 (zero) in Bozeman Creek when the storm water system is not activated.
E. coli Assumptions and Actions Specified by the TMDL: When the storm water system is activated, the WLAs are met by adhering to the permit requirements and that monitoring can be used to implement an adaptive management approach to minimize pollutant loads. The MS4 is assigned a wasteload allocation of zero when the storm water system is not activated or functioning during storm events. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve this WLA, which requires the permittees to regularly update the storm sewer system map, showing the location and number of outfalls.
Name and Date of TMDL: Lower Gallatin Planning Area TMDLs & Framework Water Quality Improvement Plan (March 2013)
Status of the TMDL: Final
Link to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/M05-TMDL-02a.pdf

Basin: Columbia Basin

Affected MS4s: Butte-Silver Bow (BSB)
Pollutants of Concern: Total Phosphorus (TP), Total Nitrogen (TN), Total Suspended Solids (TSS), Metals (Arsenic, Cadmium, Copper, Lead, Mercury, and Zinc)
MS4 WLAs as follows:
TSS: The WLA is 179 tons of sediment per year from the BSB MS4 to Silver Bow Creek. (A 76% reduction from the current estimated load of 746 tons/yr.) The WLA comprises 8.5% of the Silver Bow Creek sediment TMDL.
TSS Assumptions and Actions Specified by the TMDL: Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Nutrients: The MS4 will be assigned a WLA of zero (0) lbs/day TN and TP in Silver Bow Creek when the storm water system is not activated.
Nutrient Assumptions and Actions Specified by the TMDL: When the storm water system is activated, the WLAs are met by adhering to the permit requirements and that monitoring can be used to implement an adaptive management approach to minimize pollutant loads. The MS4 is assigned a wasteload allocation of zero when the storm water system is not activated or functioning during storm events. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve this WLA, which requires the permittees to regularly update the storm sewer system map, showing the location and number of outfalls.
Metals: The Butte-Silver Bow MS4 and the Butte Area Superfund Site are presently addressed in Silver Bow Creek via a composite wasteload allocation (WLA_{Butte}) because the sections of these areas overlap.
WLA_{Butte}
Arsenic: 2.38 lbs/day
Cadmium: 0.07 lbs/day
Copper: 2.85 lbs/day
Lead: 1.09 lbs/day
Mercury: 0.01 lbs/day
Zinc: 36.6 lbs/day
Metals Assumptions and Actions Specified by the TMDL: The WLAs are met by adhering to the permit requirements because the Superfund site has the goal of meeting water quality targets in Silver Bow Creek with direction from the CERCLA program.
Name and Date of TMDL: Upper Clark Fork Phase 2 Sediment and Nutrients TMDLs and Framework Water Quality Improvement Plan (April 2014)
Status of the TMDL: Final
Link to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/C01-TMDL-04a.pdf

Affected MS4s: City of Kalispell
Pollutants of Concern: Total Phosphorus (TP), Total Nitrogen (TN), Nitrate + Nitrite, Dissolved Oxygen (DO), Sediment, Temperature
MS4 WLAs as follows:
Nutrients: The TP WLAs are Middle Ashley Creek 15 lbs/growing season (44% reduction), Spring Creek 13 lbs/growing season (44% reduction), and Lower Ashley Creek 54 lbs/growing season (44% reduction). The TN WLAs are Middle Ashley Creek 292 lbs/growing season (30% reduction), Spring Creek 269 lbs/growing season (30% reduction), and Lower Ashley Creek 1030 lbs/growing season (30% reduction). The TN TMDL for Lower Ashley Creek provides a surrogate TMDL and allocations to address the Nitrate + Nitrite impairment. Water quality improvements that address excess TN loading will adherently result in decreased Nitrate + Nitrite loading and concentrations.
Nutrient Assumptions and Actions Specified by the TMDL: The Kalispell MS4 does not continuously discharge, and it only sporadically discharges during the dry summer growing season. Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Dissolved Oxygen: None specified for Ashley Creek and Spring Creek.
Dissolved Oxygen Assumptions and Actions Specified by the TMDL: Water quality improvements addressed in Nutrient TMDLs will result in improved DO concentrations. Therefore, the DO concentrations will increase by adhering to the permit requirements and discharge volumes. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Sediment: The Sediment WLAs are Middle Ashley Creek 15.4 tons/year (62% reduction), Lower Ashley Creek 46.5 tons/year (62% reduction), and Stillwater River 16.5 tons/year (62% reduction).
Sediment Assumptions and Actions Specified by the TMDL: Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Temperature: None specified for Ashley Creek and Whitefish River.
Temperature Assumptions and Actions Specified by the TMDL: The discharge temperatures will be consistent with naturally occurring conditions by the City of Kalispell MS4 adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Name and Date of TMDL: Flathead-Stillwater Planning Area Nutrient, Sediment, and Temperature TMDLs and Water Quality Improvement Plan (December 2014) which references Flathead Lake Nutrient TMDL Document (Phase 1, 2002)
Status of the TMDL: Final

Link to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/TMDL/PDF/FlatheadStillwater/C11-TMDL-02a.pdf

Affected MS4s: City of Missoula
Pollutants of Concern: Total Nitrogen (TN), Sediment, Metals (Arsenic, Cadmium, Copper, Lead, Iron, and Zinc)
MS4 WLAs as follows:
Nutrients: The TN WLA for Grant Creek is 0.0 lbs/day.
Nutrient Assumptions and Actions Specified by the TMDL: Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. The MS4 is assigned a wasteload allocation of zero when the storm water system is not activated or functioning during storm events. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve this WLA, which requires the permittees to regularly update the storm sewer system map, showing the location and number of outfalls. When the storm water system is activated, the WLAs are met by adhering to the permit requirements and that monitoring can be used to implement an adaptive management approach to minimize pollutant loads.
Sediment: The Sediment WLA for Grant Creek 7.8 tons/year (53% reduction).
Sediment Assumptions and Actions Specified by the TMDL: Percent reduction allocations were developed, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Temperature: None specified for Grant Creek and Bitterroot River.
Temperature Assumptions and Actions Specified by the TMDL: No MS4 WLAs (except during periods of non-storm water runoff) were developed for Grant Creek or the Bitterroot River. To meet the intent of the TMDL goals and future recommendations, the MS4 must follow their permit requirements, evaluate potential impacts to impaired receiving waters, and implement Low Impact Development practices. The MS4 is assigned a wasteload allocation of zero when the storm water system is not activated or functioning during storm events. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve this WLA. When the storm water system is activated, the WLAs are met by adhering to the permit requirements and that monitoring can be used to implement an adaptive management approach to minimize pollutant loads.
Metals: The Clark Fork River (MT76M001_030, Blackfoot River to Rattlesnake Creek) WLAs include a 55% reduction to metal loads, applicable to arsenic, cadmium, copper, iron, lead, and zinc. This reduction equates to 0.009 lbs/day of copper, 0.0045 lbs/day of lead, and 0.00004 lbs/day of zinc. No loads for arsenic, cadmium, or iron were calculated for this stream segment. The Clark Fork River (MT76M001_020, Rattlesnake Creek to Fish Creek) WLAs include a 40% reduction to metal loads, applicable to copper, iron, and lead. This reduction equates to 1.1 lbs/day of copper and 0.51 lbs/day of lead. No load for iron was calculated for this stream segment. The lead WLA for the Bitterroot River is 0.08 lbs/day (54% reduction).

Metals Assumptions and Actions Specified by the TMDL: Percent reductions and wasteload allocations were developed for the metals identified above in the Bitterroot River and Clark Fork River, but the WLAs are not intended to add load limits to the permit. The WLAs are met by adhering to the permit requirements. As identified in the permit, monitoring data should continue to be evaluated to assess BMP performance and help determine whether and where additional BMP implementation may be necessary.
Name and Date of TMDL: Silver Bow Creek and Clark Fork River Metals TMDLs (May 2014); Bitterroot Watershed Total Maximum Daily Loads and Water Quality Improvement Plan (December 2014); Bitterroot Temperature and Tributary Sediment Total Maximum Daily Loads and Framework Water Quality Improvement Plan (August 2011); and Central Clark Fork Basin Tributaries TMDLs and Water Quality Improvement Plan (September 2014).
Status of the TMDL: All final.
Links to Main TMDL Document:
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/C01-TMDL-05a.pdf
http://deq.mt.gov/Portals/112/Water/WQPB/TMDL/PDF/Bitterroot/C05-TMDL-04a.pdf
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/C05-TMDL-03a.pdf
http://deq.mt.gov/Portals/112/Water/WQPB/CWAIC/TMDL/COL-TMDL-01a.pdf

Appendix C. MCM 1 & 2 – Public Education, Outreach, Participation & Involvement

Storm Water Pollution Prevention Information

Help protect our rivers, lakes, and streams by implementing the following guidelines

1. **Clean up** pet waste on your property and when out in public with your pets.
2. **Don't pour** household chemicals down the drain or into the storm drain system.
3. **Sweep** grass clippings and dispose of in trash cans.
4. **Direct downspouts** onto lawns away from paved surfaces.
5. **Wash vehicles** on the lawn or over a landscaped area.
6. **Clean up spills** when working on vehicles, landscaping equipment, or farming equipment.

Storm water pollution from residential areas can damage the water quality of Montana's streams, rivers, and lakes. Common pollutants include pet waste, household chemicals, vehicles fluids, and landscaping materials. Help prevent storm water pollution by maintaining your community, reporting illegal dumping into the storm drainage system, and encouraging your community members to help prevent storm water pollution.

Keep it Clean and Protect our Streams

What is Illegal Dumping?

Illegal dumping takes place when any waste material is accidentally or purposely dumped into a surface water gutter, or storm drain. Illegal dumping can affect water quality, make swimming unsafe, and damage fish habitat.

Examples of Illegal Dumping:

- Dumping household chemicals
- Dumping vehicle fluids
- Trash & debris
- Sanitary waste water (sewage)

To report illegal dumping of liquids or other materials into the storm drainage system in Yellowstone County or the City of Billings, please contact

- Yellowstone County Public Works: (406) 256-2735
- City of Billings Environmental Division: (406) 247-8517

Storm Water Pollution Prevention at Construction Sites

Storm water runoff from construction sites is a common source of pollution for Montana's waterbodies. Construction related activities such as earthwork, concrete pouring, paving, and equipment maintenance can generate pollutants such as sediment, concrete waste, hazardous materials, and trash. Implement storm water pollution prevention measures and follow local development requirements to help protect our rivers, lakes, and streams.

- Designate and utilize **concrete washout** stations.
- Design, install, and maintain **temporary construction storm water** BMPs.
- Ensure that post-construction storm water BMPs are **stabilized before use**.
- Practice **good house-keeping** techniques by cleaning up trash and debris.
- Designate an area for machine maintenance and keep a **spill kit** on site.
- **Educate** your team about the importance of storm water pollution prevention.

To request more information or report construction related pollution concerns in Yellowstone County or the City of Billings, please contact

- Yellowstone County Public Works: (406) 256-2735
- City of Billings Environmental Division: (406) 247-8517

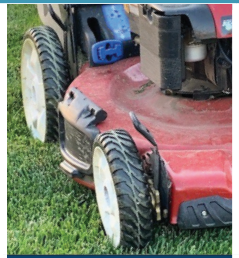
Construction Site Storm Water Management Resources:

- City of Billings Storm Water Management Website
- Yellowstone County Storm Water Management Website
- City of Billings Storm Water Management Manual
- Montana DEQ Storm Water Construction General Permit
- Montana DEQ Storm Water Management Construction Field Guide
- Montana Post-Construction Storm Water BMP Design Guidance Manual

Construction Best Management Practices (BMP) Considerations

Temporary BMP	Purpose, Benefits & Uses	Key Considerations
Silt Fence	• Reduce sediment runoff from site • Should be used as secondary BMP • Well suited for perimeter control • Can act as a sediment barrier	• Stake & secure fencing perpendicular to expected flow path • Embed bottom of fence into ground to prevent undercutting • Avoid areas with concentrated flows • Remove large sediment deposits when necessary
Straw Wattle	• Pond or pool runoff from site • Should be used with other BMPs • Suitable for areas with minor runoff • Simple installation	• Routine maintenance is required • Properly stake & secure wattles • Avoid areas with steep slopes & high velocities • Can create debris if wattle breaks
Erosion Control Blanket	• Temporarily stabilizes sloped surfaces • Protects and promotes vegetation growth • Reduces sheet flow on embankment slope	• Anchor entire blanket at top & bottom of slope • Avoid driving on blanket • Not Intended as a permanent slope stabilization measure
Vehicle Track Pad	• Commonly installed at site entrances & exits • Reduces sediment tracking onto roadways • Removes soil & mud from tires	• Can use rock pads, rumble strips, or cattle guards • Keep pads in place until end of construction • Maintain pad by removing soil/mud deposits

How Does Landscaping Impact Storm Water and the Yellowstone River?



Lawn Maintenance

Lawn clippings can clog the storm sewer system and degrade water quality.

Landscape Debris

Unmanaged leaf piles or yard debris can release harmful materials to local waterways.

Material Stockpiles

Storm water runoff from material stockpiles can contribute small sediments and other debris.

Fertilizers & Pesticides

Residual chemicals from fertilizers and pesticides can enter the storm sewer system and harm local waterways.

Equipment Maintenance

Fuel and oil spills can pollute storm water if not managed or cleaned up.

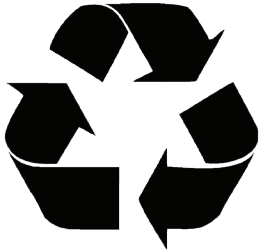
Creative Landscaping

Rain gardens and other creative landscaping techniques can promote infiltration and reduce storm water pollution.

Uncovered Loads

Trash and debris from uncovered loads can pollute storm water and clog the storm sewer system.

Tips to Prevent Storm Water Pollution:



1. **Sweep** and dispose of grass clippings in trash cans.
2. Create **waste piles** for landscaping debris that are located away from streets and storm sewer systems.
3. Locate and **maintain material stockpiles** to prevent the release of storm water pollutants.
4. Practice **good housekeeping** techniques by using and storing fertilizers and pesticides appropriately.
5. Designate and use **equipment maintenance areas** and have spill kits readily available.
6. **Avoid** application of fertilizers, pesticides and herbicides within 20 feet of storm drainage facilities and surface waters.
7. Ensure that all truck and trailer loads are **secured** with tarps or blankets.

To request more information or report landscaping related pollution concerns in Yellowstone County or the City of Billings, please contact

- Yellowstone County Public Works: (406) 256-2735
- City of Billings Environmental Division: (406) 247-8517

Can Automotive Maintenance Pollute Storm Water and the Yellowstone River?

Car Wash

Potential Storm Water Pollutants: Sediment, Toxic Chemicals, Detergents, Oil & Grease

Gas Station

Potential Storm Water Pollutants: Sediment, Fuel, Detergents, Oil & Grease, Trash & Debris

Parts Store

Potential Storm Water Pollutants: Sediment, Fuel, Oil & Grease, Toxic Chemicals, Trash & Debris

Repair Shop

Potential Storm Water Pollutants: Sediment, Toxic Chemicals, Oil & Grease, Trash & Debris

KEEP IT CLEAN

DRAINS TO YELLOWSTONE RIVER

Tips to Prevent Storm Water Pollution:

1. Clean up trash and debris.
2. Learn about storm water management at your facility and assist with operation and maintenance procedures.
3. Develop and implement a spill prevention and control plan and provide training for employees or co-workers.
4. Designate areas for machine maintenance and have spill kits readily available.
5. Use non-toxic cleaning products when possible.
6. Use and maintain chemical collection systems and don't pour chemicals down the drain or into the storm drain system.
7. Wash your vehicle(s) on the grass rather than on the street or driveway.

To request more information or report automotive related pollution concerns in Yellowstone County or the City of Billings, please contact

- Yellowstone County Public Works: (406) 256-2735
- City of Billings Environmental Division: (406) 247-8517

Appendix D. MCM 3 – Illicit Discharge Detection and Elimination

Yellowstone County MS4 Storm Water Sewer Inventory

2019 Field Investigation Summary Report

Date Prepared: October 2019
Prepared By: HDR

Executive Summary

HDR conducted a storm sewer system field investigation and data analysis in 2019 to identify and map storm sewer features associated with Yellowstone County's (County) Municipal Separate Storm Sewer System (MS4). The primary objectives of the investigation were to:

- Identify all known surface waters flowing through the County's MS4 area;
- Identify all known County MS4 outfalls;
- Identify all known surface waters that receive discharges from the County's MS4 outfalls;
- Identify all known storm sewer system components in the County's MS4 area;
- Identify all known post-construction storm water management facilities;
- Identify/designate high priority areas; and,
- Document all data in an organized GIS database.

Preliminary mapping activities were performed in the spring of 2019 to prepare for the field investigation. These activities consisted of developing a storm sewer system inventory database (ArcGIS Online) and performing a desktop analysis of the County's storm sewer system. Once these activities were completed, the results of the desktop analysis were used by field personnel to identify, verify, and map the location of storm sewer features. Field activities were conducted between June and August of 2019. Following the field investigation, the data was reviewed as part of the field data analysis. A brief summary of the field investigation results is provided in the table below.

2019 Storm Water Sewer Field Investigation Results Summary

Storm Sewer Feature	Types of Facilities		Number of Features Identified
Outfalls	▪ Culvert ▪ Storm Sewer	▪ Open Channel	58
Surface Waters	▪ Stream ▪ Lake ▪ Pond	▪ Reservoir ▪ Irrigation ▪ Drainage System	139
Open Conveyances	▪ Swale ▪ Ditch	▪ Valley Gutter ▪ French Drain	698
Closed Conveyances	▪ Culvert	▪ Storm Sewer	746
Inlets, Manholes, Drywells	▪ Inlet	▪ Manhole	521
Post-Construction Facilities	▪ Infiltration Basin ▪ Bioretention ▪ Permeable Pavement ▪ Dispersion ▪ Biofiltration Swale	▪ Extended Detention Basin ▪ Wet Detention Basin ▪ Proprietary Treatment Device ▪ Drywell ▪ Other	91
High Priority Areas	▪ N/A		12
		Total Number of Features Identified	*2,265*

Significant progress was made in 2019 to further develop the inventory of the County's storm sewer system. However, the team identified several locations that require additional information to

complete the inventory. Private ownership and lack of public access to several areas limited data gathering in some locations. It is recommended that the County thoroughly review the updated inventory to confirm and/or correct the findings. Additionally, it is recommended that the County submit the inventory as an interim deliverable to DEQ with the 2019 MS4 Annual Report.

Contents

Tables

Figures

Appendices

1 Introduction

1.1 Background Information and Permit Requirements

Yellowstone County's storm water sewer system is regulated by Montana's General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4), Permit Number MTR040000 (General Permit). The General Permit provides authorization to discharge storm water to waters of the state under the Montana Pollutant Discharge Elimination System (MPDES). As one of the foundational program components, the County is required to inventory storm sewer infrastructure within the MS4 boundary. A summary of the specific inventory requirements is provided in Table 1-1.

Table 1-1. Summary of General Permit Requirements for Storm Sewer Inventories

Minimum Measure (Part II.A.3.c)	Required BMP (Part II.A.3.c.i)
Inventory storm water sewer infrastructure to thoroughly track illicit discharges, contain spills, and determine high priority areas. When determining high priority areas, permittees must document and consider, at a minimum, the following: ▪ Industrial areas; ▪ Previous areas with illicit discharges; ▪ Known illegal dumping areas; ▪ The oldest portions of the MS4 storm sewer infrastructure; ▪ Any areas with onsite sewage disposal systems; and, ▪ Areas that discharge to an impaired waterbody.	▪ Update existing map showing: o the location and number of outfalls (as defined in ARM 17.30.1102(14) and Part VIII of the General Permit; and, o the names and locations of all surface waters that receive discharges from those outfalls. ▪ Development of this map to accommodate the provisions of a comprehensive illicit discharge detection and elimination (IDDE) program and the SWMP would typically include mapping storm sewer system components including: o inlets; o open channels; o subsurface conduits/pipes; o dry wells (discharges to ground water directly); and, o other similar discrete conveyances. ▪ List, label, or highlight determined high priority areas. ▪ Update the storm sewer map regularly and make available for review by the Department upon request.

The 2018 inspection by Montana Department of Environmental Quality (DEQ) determined that the County storm sewer inventory was deficient and did not satisfy permit requirements. In September of 2018, the County developed an inventory analysis plan and schedule to perform a system-wide storm sewer inventory. The plan, schedule, and current status is provided in Attachment A.

1.2 Purpose and Objectives

The purpose of the 2019 field investigation was to identify all known storm sewer system features within the MS4 boundary there were safely accessible from public right-of-way (ROW) limits. More specifically, the objectives were to:

- Identify all known surface waters flowing through the County's MS4 area;
- Identify all known County MS4 Outfalls;
- Identify all known surface waters that receive discharges from the County's MS4 Outfalls;
- Identify all known storm sewer system components in the County's MS4 area;
- Identify all known post-construction storm water management facilities;
- Identify/designate high priority areas; and,
- Document all data in an organized GIS database.

1.3 Team Composition

The County Public Works Department is responsible for implementing and enforcing the General Permit requirements. The work discussed in this document represents the work conducted under contract with the County. Contract employees identified and mapped storm sewer infrastructure and to maintain the data until the roles and responsibilities transition back to County staff members prior to the end of this General Permit term. The organizational chart provided in Figure 1 identifies the key team members and responsibilities associated with the field investigation.

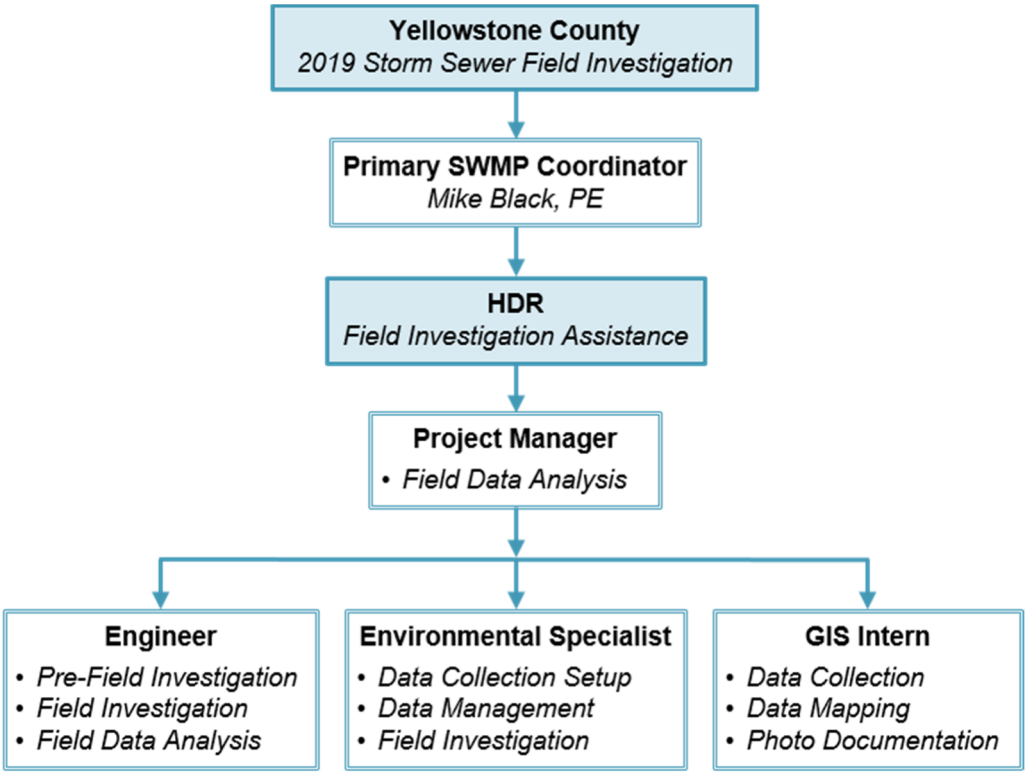


Figure 1. Organizational Chart of Field Investigation Personnel

2 Field Investigation Processes

A strategic process was implemented to prepare for the field investigation and to improve data management techniques. The primary phases of this process included preliminary mapping efforts, the field investigation, and the field data analysis. The following sections describe these phases and the supplemental activities performed during each phase.

2.1 Preliminary Mapping Efforts

Preliminary mapping activities were performed in the spring of 2019 to assess the County storm sewer system and to prepare for the field investigation. These activities consisted of creating the inventory database (ArcGIS Online), preparing the field equipment, and performing a desktop analysis of the County storm sewer system.

2.1.1 Inventory Database

The inventory database was created using ArcGIS Online and consists of seven primary components. These components are feature-class shapefiles with attribute tables organized such that various infrastructure characteristics could be documented (e.g. pipe diameter, type of surface water, conveyance feature, etc.). A summary of the database components is provided in Table 2-1.

Table 2-1. Summary of Inventory Database Components

Database Components (Feature Classification)	Feature Type to be Identified	
Outfalls	▪ Culvert ▪ Storm Sewer	▪ Open Channel
Surface Waters	▪ Stream ▪ Lake ▪ Pond	▪ Reservoir ▪ Irrigation ▪ Drainage System
Open Conveyances	▪ Swale ▪ Ditch	▪ Valley Gutter ▪ French Drain
Closed Conveyances	▪ Culvert	▪ Storm Sewer
Inlets, Manholes, Drywells	▪ Inlet	▪ Manhole
Post-Construction Facilities	▪ Infiltration Basin ▪ Bioretention ▪ Permeable Pavement ▪ Dispersion ▪ Biofiltration Swale	▪ Extended Detention Basin ▪ Wet Detention Basin ▪ Proprietary Treatment Device ▪ Drywell ▪ Other
High Priority Areas	▪ N/A	

2.1.2 Field Equipment

Field data was collected using an Apple iPad Mini, the ArcGIS Collector Application, and a GPS tracker. The aforementioned shapefiles were developed to be compatible with the ArcGIS Collector Application and the online database. Detailed procedures for creating the feature-class shapefiles and preparing the field equipment are described in the Data Management Plan located in Attachment C.

2.1.3 Desktop Analysis

A desktop analysis of the County storm sewer system was performed to establish a baseline for the field investigation. The analysis consisted of reviewing available hard-copy and digital data to identify potential storm water features and associated infrastructure. The following sources were reviewed during the analysis:

- Existing Yellowstone County MS4 Storm Sewer Map
- Clean Water Act Information Center
- National Hydrography Dataset
- City of Billings Integrated Storm Water Study

The data collected from these sources was incorporated into the respective shapefiles and supplemented with information obtained from ESRI aerial imagery and Google Street View.

2.1.4 Investigation Areas

Once the desktop analysis was completed, the results were reviewed and the entire County's MS4 area was divided into six data collection areas. These six areas were delineated to improve efficiency during field activities and to help manage the anticipated volume of data to be collected. The data collection areas are summarized in Table 2-2 and shown on the overview map in Figure 2.

Table 2-2. Summary of Field Investigation Areas

Investigation Area	MS4 Area (acres)	Approximate Length of Roads (miles)	Approximate Length of Water (miles)
Northwest Area	2,079	15.0	7.2
Southwest Area	324	3.3	2.0
I-90 West Area	1,343	10.0	5.9
I-90 East Area	1,547	9.4	9.5
Northeast Area	1,162	18.2	5.0
Lockwood Area	3,665	64.8	18.2

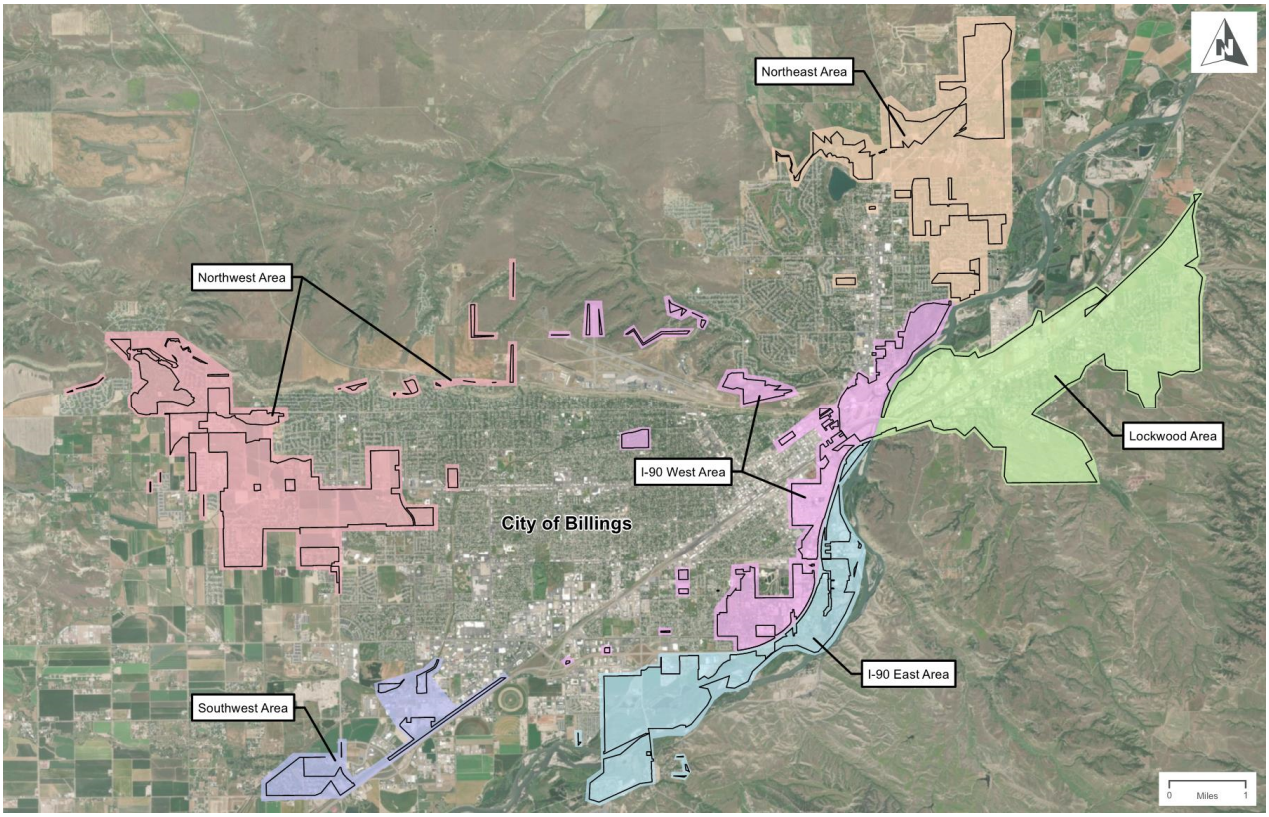


Figure 2. Field Investigation Area/MS4 Area Overview Map

2.2 Field Investigation

The field investigation occurred from June to August of 2019. During that time period, field personnel walked and drove approximately 120 miles within accessible public ROW and spent approximately 270 hours in the field collecting data. The location of visible storm sewer features were mapped; when possible, photographs and storm sewer feature characteristics were documented including feature type, material, and size. In total, 2,265 storm sewer system features were identified and mapped. Figure 3 through Figure 8 highlight some of the storm sewer features collected during the field investigation.

Figure 3. Roadside Ditch and Culvert Mapped in Residential Area

Figure 4. Grass Swale Mapped in Residential Area

Figure 5. Storm Water Pond Mapped in Residential Area

Figure 6. Storm Sewer Inlet Mapped on Shiloh Road

Figure 7. Potential Outfall Location Mapped in Industrial Area

Figure 8. Potential Outfall Location Mapped near Highway 312

2.3 Field Data Analysis

The field data were analyzed to verify that applicable storm sewer features were correctly identified and to identify additional information to be collected by field personnel. A preliminary review was performed using the ArcGIS Online database and field personnel performed a follow-up investigation to collect additional information. A comprehensive review was performed after the follow-up investigation and the data was confirmed and data gap locations (see Section 3.3) were identified. The storm sewer features identified during the field investigation are shown on the provisional Storm Sewer System Inventory Maps provided in Attachment B and selected shapefile attribute tables are provided in Attachment D. The entire provisional inventory is also available to be reviewed using ArcGIS Online or the ArcGIS Desktop Application. The results of field investigation are summarized in Table 2-3.

Table 2-3. Field Investigation Results

Storm Sewer Feature	Number of Features Identified
Outfalls	58
Surface Waters	139
Open Conveyances	698
Closed Conveyances	746
Inlets, Manholes, Drywells	521
Post-Construction Facilities	91
High Priority Areas	12
Total Features	2,265

3 Data Gaps and Future Considerations

Multiple areas were identified during the field data analysis where additional information is needed to correctly identify storm sewer features. Additionally, the field data analysis revealed that there are limitations with the current data which should be addressed prior to finalizing the inventory. The

following sections summarize the data gaps, limitations associated with the current data, and future recommendations to finalize the inventory.

3.1 Data Gaps

A portion of the County storm sewer features and associated infrastructure are located below ground or on private property. Therefore, field personnel were not able to confirm the presence or characteristics of storm sewer features at certain locations. These locations have been classified as data gaps. A total of 56 data gap locations were identified throughout the County's MS4 area.

To better manage data gap locations, a unique naming convention was developed based on respective investigation areas. A summary of the naming conventions and the number of data gaps per investigation area is provided in Table 3-1. A comprehensive table of the data gap locations with brief descriptions is provided in Attachment E along with a data gap map that shows respective locations.

Table 3-1. Summary of Data Gaps

Investigation Area	Naming Convention	Number of Identified Data Gaps
Northwest Area	NW-DG-(#)	6
Southwest Area	SW-DG-(#)	4
I-90 West Area	I90W-DG-(#)	8
I-90 East Area	I90E-DG-(#)	4
Northeast Area	NE-DG-(#)	1
Lockwood Area	LCKWD-DG-(#)	33

3.2 Data Limitations and Future Considerations

The information provided in the inventory database is preliminary because there are several items that should be reviewed and considered by the County prior to finalizing the analysis. The field inventory team made certain assumptions in order to complete the 2019 investigation within the allotted time. These assumptions along with data limitations and recommendations are summarized in Table 3-2.

Table 3-2. Summary of Data Constraints and Recommendations

Data Feature	Data Constraint	Recommendations to the County
Ownership	▪ An ownership and ROW analysis has not been performed and multiple storm water features are likely privately owned or owned by an adjacent MS4. Several facilities in the current inventory (including outfalls) may be located in MDT ROW.	▪ Perform a ROW and ownership analysis to confirm ownership of all storm sewer features which will clarify County responsibilities (this could result in a reduction of County MS4 outfalls). A discussion with MDT and/or DEQ to discuss ownership and ROW implications may also be warranted.

Table 3-2. Summary of Data Constraints and Recommendations

Data Feature	Data Constraint	Recommendations to the County
Open Conveyances and Surface Waters	▪ The field investigation team made conservative assumptions when identifying open conveyances such as ditches and swales (i.e., it was assumed that most roadside ditches are part of the storm water conveyance system). It is likely that a portion of the open conveyances identified are minor irrigation laterals.	▪ Review and confirm or revise the current database to confirm open conveyances and surface waters.
High Priority Areas and High Priority Outfalls	▪ High priority areas and high priority outfalls identified during the field investigation are suggestions based on the field investigation team's limited understanding of the County's MS4 areas.	▪ Review and confirm or revise these areas based on the County's understanding of the MS4 storm sewer system and General Permit requirements.
Data Gaps	▪ Field personnel identified, but did not map, multiple areas that receive storm water runoff from impervious surfaces but do not convey storm water on a routine basis. *(Example: roadside depressions and residential approach culverts.)*	▪ Review these areas to determine whether additional mapping is required.
Post-Construction Storm Water Management Facilities	▪ The field investigation team made conservative assumptions when identifying post-construction facilities. *(Example: It was assumed that most ponds are post-construction storm water management facilities.)*	▪ Review and confirm or revise the current database for post-construction storm water management facilities.
Attribute Fields (e.g., pipe diameter, type of surface water, etc.)	▪ When possible, the field investigation team populated attribute fields with readily available information. However, not all attribute fields were populated during the field investigation and data analysis.	▪ Consider populating additional attribute fields to better track and prioritize capital improvement projects.

4 Conclusion

The 2019 field investigation and data analysis resulted in significant progress towards developing an inventory of the County's storm sewer system. The following recommendations are offered to proceed with the storm sewer inventory process:

- Review the data gaps presented in Attachment E and consider potential solutions to address each data gap.
- Thoroughly review the updated storm water system inventory and consider the limitations and recommendations presented in Table 3-2.
- Submit the current database and provisional maps as an interim or preliminary inventory with the 2019 Annual Report. Include an explanation of the work conducted in 2019 and the plans to finish the inventory.
- Conduct an additional storm sewer system inventory phase in 2020 to finalize the inventory.

5 References

1. City of Billings Integrated Storm Water Study, Sanderson Stewart, October 2013.
2. ESRI, ArcGIS Basemap Aerial Imagery, 2015.
3. Google, Inc., Google Maps: Street View, https://www.google.com/maps/, accessed March through September 2019.
4. Montana Department of Environmental Quality, Clean Water Act Information Center, http://deq.mt.gov/water/resources/CWAIC, accessed March 2019.
5. United States Geological Survey, National Hydrography Dataset, accessed March 2019.

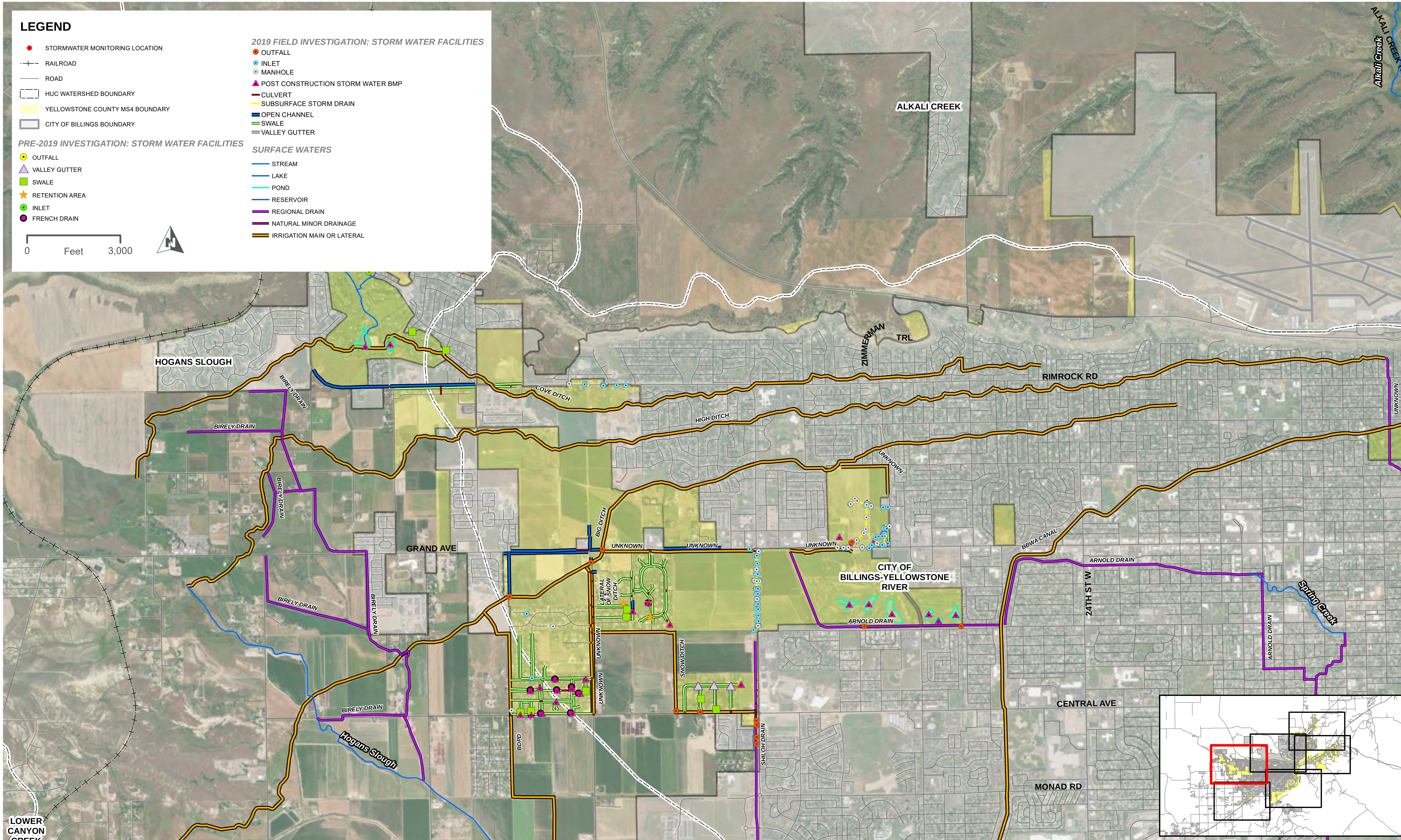
This page is intentionally left blank.

Attachment A. Inventory Plan and Schedule

Storm Sewer Inventory Analysis Plan and Schedule

Task	Description	Dates
1. Confirm area to be mapped (County MS4 boundary)	Identify 2010 U.S. Census designated urbanized area and City of Billings MS4 boundaries	Sept 2018 (*completed*)
2. Identify items to be mapped	**Items to be mapped:** *MCM 3*: outfalls, surface waters that receive discharges from outfalls, inlets, open channels, subsurface conduits/pipes, dry wells, conveyances, high priority areas *MCM 5:* High priority existing post-construction storm water management controls, all new (post 2017) storm water management controls *MCM 6:* Location of permittee owned facilities and known activities that have the ability to release contaminants to the MS4	Sept 2018 (*completed*)
3. Desktop analysis and interviews	Review available hard-copy and digital data and interview field staff to create preliminary base map. Identify areas and data to be gathered during field investigation.	Nov 2018 to Apr 2019 (*completed*)
4. Submit preliminary map to DEQ	Results of desktop analysis with description of upcoming field investigation will be submitted with 2018 annual report	Mar 2019 (*completed*)
5. Field investigation (phase 1)	County and/or consultant staff will collect storm water inventory data using handheld GPS units. Use of intern(s) will be considered to maximize efficient use of funds. GPS data will be GIS compatible for integration with the County's GIS mapping platform.	May 2019 to Aug 2019 (*completed*)
6. Field data analysis (phase 1)	Field data will be added to the preliminary base map by County or consultant staff. Preliminary high priority areas will be identified. Additional field investigation needs will be identified, if necessary.	Sept 2019 to Apr 2020 (*completed*)
7. Submit updated map to DEQ	Results of phase 1 mapping analysis will be submitted with 2019 annual report. Description of upcoming field investigation will also be provided (if necessary).	Mar 2020
8. Field investigation (phase 2) (if necessary)	County and/or consultant staff will collect remaining items for storm water inventory data.	May 2020 to Aug 2020
9. Field data analysis (phase 2) (if necessary)	Field data will be added to the base map by County or consultant staff. High priority areas will be updated.	Sept 2020 to Apr 2021
10. Submit completed map to DEQ	Results of phase 2 inventory analyses will be submitted with 2020 annual report.	Mar 2021

Attachment B. 2019 Storm Sewer Inventory Maps


LEGEND
STORMWATER MONITORING LOCATION
RAILROAD
ROAD
HUC WATERSHED BOUNDARY
YELLOWSTONE COUNTY MS4 BOUNDARY
CITY OF BILLINGS BOUNDARY
PRE-2019 INVESTIGATION: STORM WATER FACILITIES
OUTFALL
VALLEY GUTTER
SWALE
RETENTION AREA
INLET
FRENCH DRAIN
0
Feet
3,000
N
2019 FIELD INVESTIGATION: STORM WATER FACILITIES
OUTFALL
INLET
MANHOLE
POST CONSTRUCTION STORM WATER BMP
CULVERT
SUBSURFACE STORM DRAIN
OPEN CHANNEL
SWALE
VALLEY GUTTER
SURFACE WATERS
STREAM
LAKE
POND
RESERVOIR
REGIONAL DRAIN
NATURAL MINOR DRAINAGE
IRRIGATION MAIN OR LATERAL
ALKALI CREEK
ALKALI CREEK RD
Alkali Creek
ZIMMERMAN
TRL
HOGANS SLOUGH
BIRELY DRAIN
COVE DITCH
RIMROCK RD
HIGH DITCH
UNKNOWN
BIG DITCH
GRAND AVE
CITY OF BILLINGS-YELLOWSTONE RIVER
BBWA CANAL
ARNOLD DRAIN
24TH ST W
Spring Creek
LATERAL OF SNOW DITCH
SNOW DITCH
SHILOH DRAIN
BDPD
Hogans Slough
CENTRAL AVE
MONAD RD
LOWER CANYON CREEK

NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY

PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP

FIGURE DM-1

PAGE 1 OF 6

PATH: I:\PROJECTS\YELLOWSTONE_COUNTY\10145212_DESKTOP_STORMWATER_INVENTORY_ANALYSIS\MAP_DOCS\WORKING\YELLOWSTONE_COUNTY_STORMWATER_SEWER_INVENTORY_DETAILED_MAPS.MXD - USER: SGRIFFIN - DATE: 10/22/2019

LEGEND

- STORMWATER MONITORING LOCATION
- RAILROAD
- ROAD
- HUC WATERSHED BOUNDARY
- YELLOWSTONE COUNTY MS4 BOUNDARY
- CITY OF BILLINGS BOUNDARY

PRE-2019 INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- VALLEY GUTTER
- SWALE
- RETENTION AREA
- INLET
- FRENCH DRAIN

0 Feet 3,000

2019 FIELD INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- INLET
- MANHOLE
- POST CONSTRUCTION STORM WATER BMP
- CULVERT
- SUBSURFACE STORM DRAIN
- OPEN CHANNEL
- SWALE
- VALLEY GUTTER

SURFACE WATERS

- STREAM
- LAKE
- POND
- RESERVOIR
- REGIONAL DRAIN
- NATURAL MINOR DRAINAGE
- IRRIGATION MAIN OR LATERAL

CENTRAL AVE
MONAD RD
KING AVE E
SNOW DITCH
SHILOH DRAIN
DANFORD DRAIN
CITY/COUNTY DRAIN
HOGANS SLOUGH
Hogans Slough
SBMACANAL
UNKNOWN
LATERAL OF CANYON CREEK DITCH
SUBURBAN DITCH
GREY EAGLE DITCH
Blue Creek
LOWER CANYON CREEK
Canyon Creek
CANYON CREEK DITCH
ZOO DR
CITY OF BILLINGS-YELLOWSTONE RIVER
Yellowstone River
BROCKWAY COULEE-YELLOWSTONE RIVER
Yellowstone River

NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY
PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP
FIGURE DM-1

LEGEND

- STORMWATER MONITORING LOCATION
- RAILROAD
- ROAD
- HUC WATERSHED BOUNDARY
- YELLOWSTONE COUNTY MS4 BOUNDARY
- CITY OF BILLINGS BOUNDARY

PRE-2019 INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- VALLEY GUTTER
- SWALE
- RETENTION AREA
- INLET
- FRENCH DRAIN

0 Feet 3,000

2019 FIELD INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- INLET
- MANHOLE
- POST CONSTRUCTION STORM WATER BMP
- CULVERT
- SUBSURFACE STORM DRAIN
- OPEN CHANNEL
- SWALE
- VALLEY GUTTER

SURFACE WATERS

- STREAM
- LAKE
- POND
- RESERVOIR
- REGIONAL DRAIN
- NATURAL MINOR DRAINAGE
- IRRIGATION MAIN OR LATERAL

FIVE MILE
FIVE MILE CREEK
FIVE MILE
REEK RD
KALI CREEK
Alkali Creek
Five Mile Creek
HIGHWAY 87 N
ROLLINGS DRAIN
MARY STREET DRAIN
FIVE MILE CREEK
LAKE ELMO DR
BBWA - BARRETT LATERAL?
UNKNOWN
UNKNOWN
BENCH BLVD
WICKS LN
W WICKS LN
UNKNOWN
UNKNOWN
SEVENMILE CREEK-YELLOWSTONE RIVER
HILLTOP RD
ARONSON AVE
E ALKALI CREEK RD
Yellowstone River
UNKNOWN
COULSON DITCH
Unnamed
OLD HARDIN RD
COVE DITCH
HIGH DITCH
RIMROCK RD
BBWA CANAL
6TH AVE N
001A
LOCKWOOD DITCH
UNKNOWN
002B
002A
LOCKWOOD DITCH
UNKNOWN
BIG DITCH
UNKNOWN
24TH ST W
CITY OF BILLINGS-YELLOWSTONE RIVER
UNKNOWN
YEGEN DRAIN
YEGAN DRAIN
GRAND AVE
UNKNOWN
ZIMMERMAN TRL
ARNOLD DRAIN
Spring Creek
ARNOLD DRAIN
ARNOLD DRAIN

NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY
PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP
FIGURE DM-1

LEGEND

- STORMWATER MONITORING LOCATION
- RAILROAD
- ROAD
- HUC WATERSHED BOUNDARY
- YELLOWSTONE COUNTY MS4 BOUNDARY
- CITY OF BILLINGS BOUNDARY

PRE-2019 INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- VALLEY GUTTER
- SWALE
- RETENTION AREA
- INLET
- FRENCH DRAIN

0 Feet 3,000

2019 FIELD INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- INLET
- MANHOLE
- POST CONSTRUCTION STORM WATER BMP
- CULVERT
- SUBSURFACE STORM DRAIN
- OPEN CHANNEL
- SWALE
- VALLEY GUTTER

SURFACE WATERS

- STREAM
- LAKE
- POND
- RESERVOIR
- REGIONAL DRAIN
- NATURAL MINOR DRAINAGE
- IRRIGATION MAIN OR LATERAL

FIVE MILE CREEK
BBWA CANAL
Five Mile Creek
UNKNOWN
MOCKING
MARY STREET DRAIN
HOLLING DR AIN
BBWA - BARRETT LATERAL?
LAKE ELMO DR
BENCH BLVD
WICKS LN
W WICKS LN
HILLTOP RD
ALKALI CREEK
Alkali Creek
ALKALI CREEK RD
ARONSON AVE
Yellowstone River
SEVENMILE CREEK-YELLOWSTONE RIVER
Unnamed
COULSON DITCH
LOCKWOOD DITCH
LOCKWOOD DR
NOBLEWOOD DR
Dry Creek
001B
BECRAFT LN

NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY

PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP

FIGURE DM-1

PATH: I:\PROJECTS\YELLOWSTONE_COUNTY\10145212_DESKTOP_STORMWATER_INVENTORY_ANALYSIS\MAP_DOCS\WORKING\YELLOWSTONE_COUNTY_STORMWATER_SEWER_INVENTORY_DETAILED_MAPS.MXD - USER: SGRIFFIN - DATE: 10/22/2019

LEGEND

- STORMWATER MONITORING LOCATION
- RAILROAD
- ROAD
- HUC WATERSHED BOUNDARY
- YELLOWSTONE COUNTY MS4 BOUNDARY
- CITY OF BILLINGS BOUNDARY

PRE-2019 INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- VALLEY GUTTER
- SWALE
- RETENTION AREA
- INLET
- FRENCH DRAIN

0 Feet 3,000

2019 FIELD INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- INLET
- MANHOLE
- POST CONSTRUCTION STORM WATER BMP
- CULVERT
- SUBSURFACE STORM DRAIN
- OPEN CHANNEL
- SWALE
- VALLEY GUTTER

SURFACE WATERS

- STREAM
- LAKE
- POND
- RESERVOIR
- REGIONAL DRAIN
- NATURAL MINOR DRAINAGE
- IRRIGATION MAIN OR LATERAL

6TH AVE N
YEGEN DRAIN
Yellowstone River
Dry Creek
Unnamed
SEVENMILE CREEK-YELLOWSTONE RIVER
YEGAN DRAIN
UNKNOWN
UNKNOWN
UNKNOWN
UNKNOWN
UNKNOWN
CITY OF BILLINGS-YELLOWSTONE RIVER
MONAD RD
KING AVE W
KING AVE E
DANFORD DRAIN CITY/COUNTY DRAIN
GREY EAGLE DITCH
GREY EAGLE DITCH
UNKNOWN
UNKNOWN
UNKNOWN
Hogans Slough
HOGANS SLOUGH
SUBURBAN DITCH
Yellowstone River
Bitter Creek
Blue Creek
LOWER BLUE CREEK

NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY
PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP
FIGURE DM-1

PATH: I:\PROJECTS\YELLOWSTONE_COUNTY\10145212_DESKTOP_STORMWATER_INVENTORY_ANALYSIS\MAP_DOCS\WORKING\YELLOWSTONE_COUNTY_STORMWATER_SEWER_INVENTORY_DETAILED_MAPS.MXD - USER: SGRIFFIN - DATE: 10/22/2019

LEGEND

- STORMWATER MONITORING LOCATION
- RAILROAD
- ROAD
- HUC WATERSHED BOUNDARY
- YELLOWSTONE COUNTY MS4 BOUNDARY
- CITY OF BILLINGS BOUNDARY

PRE-2019 INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- VALLEY GUTTER
- SWALE
- RETENTION AREA
- INLET
- FRENCH DRAIN

0 Feet 3,000

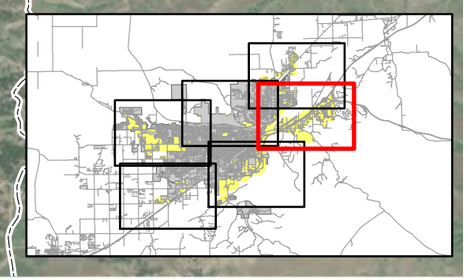
2019 FIELD INVESTIGATION: STORM WATER FACILITIES

- OUTFALL
- INLET
- MANHOLE
- POST CONSTRUCTION STORM WATER BMP
- CULVERT
- SUBSURFACE STORM DRAIN
- OPEN CHANNEL
- SWALE
- VALLEY GUTTER

SURFACE WATERS

- STREAM
- LAKE
- POND
- RESERVOIR
- REGIONAL DRAIN
- NATURAL MINOR DRAINAGE
- IRRIGATION MAIN OR LATERAL

Five Mile Creek
WA - BARRETT LATERAL?
UNKNOWN
Unnamed
OLD HARDIN RD
NOBLEWOOD DR
LOCKWOOD DITCH
BBWA CANAL
HILLTOP RD
Yellowstone River
COULSON DITCH
001B
BECRAFT LN
SEVENMILE CREEK-YELLOWSTONE RIVER
ALKALI CREEK RD
Alkali Creek
ARONSON AVE
ALKALI CREEK
E ALKALI CREEK RD
LOCKWOOD DITCH
002B
002A
6TH AVE N
001A
YEGEN DRAIN
CITY OF BILLINGS-YELLOWSTONE RIVER
GREY EAGLE DITCH
Dry Creek



NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY
PROVISIONAL STORM WATER SYSTEM INVENTORY DETAILED MAP
FIGURE DM-1

Attachment C. Data Management Plan

Storm Water Sewer Inventory: Preliminary Data Management Plan

Introduction

HDR is assisting Yellowstone County (County) with development of their Storm Water Management Program (SWMP). A critical component of the SWMP is the development and maintenance of a storm water sewer inventory that identifies the surface waters and storm sewer system features in the County's Municipal Separate Storm Sewer System (MS4) regulated areas. As part of this process, HDR performed a storm water sewer inventory field investigation during the summer of 2019 (2019 Field Investigation) to identify publicly accessible storm sewer infrastructure in the County's MS4 boundary. The purpose of this document is to describe the field inventory data acquisition procedures and recommendations for ongoing management and maintenance of data associated with the storm water sewer inventory.[1]

Data Acquisition Procedures

Collection Devices

The following devices were used to collect data during the 2019 Field Investigation:

1. Apple iPad Mini (hereafter referred to as iPad)
2. SX Blue 2 Bluetooth GPS Tracker

Device Setup

The iPad and GPS tracker were configured prior to the field investigation by downloading and installing mobile application software (Apps). The following Apps were downloaded to the iPad:

1. Collector for ArcGIS (Aurora)
2. Survey123 for ArcGIS
3. GNSS Status

The GPS tracker was synced to the GNSS Status App and the ArcGIS Apps were linked to HDR's ArcGIS Enterprise Online Account (this allowed the project team to access and review data through ArcGIS Online).

Data Configuration

Data collected during preliminary mapping activities and during the field investigation was configured as follows:

1. *ArcGIS Shapefiles* – Feature-class shapefiles with attribute fields for collection of storm sewer facility characteristics (e.g., pipe diameter, pipe material, etc.) were developed to be compatible with ArcGIS Online and the Collector for ArcGIS App. This allowed the data to be collected in the field using the Collector for ArcGIS App in offline mode and uploaded to the ArcGIS online inventory database at the end of each field day to add the newly collected data to the master inventory. The feature-class shapefiles were developed for the following items:
    a. Surface waters (polyline shapefile)
    b. Outfalls (point shapefile)
    c. Closed conveyance features (polyline shapefile)

[1] Refer to the *Yellowstone County Storm Water Sewer Inventory: 2019 Field Instigation Summary Report* for additional information about the storm water sewer inventory process and results.

   d. Open conveyance features (polyline shapefile)
   e. Inlets, catch basins, manholes and drywells (point shapefile)
   f. Post-construction management facilities (point shapefile)
2. *Survey123 Smart Forms* – An ArcGIS Survey123 smart form template was developed to consistently document outfall dry-weather screenings. The Survey123 App template was configured to export the results from each outfall dry-weather screening to a word document in a format similar to the outfall screening protocol developed by the Center for Watershed Protection (per the MS4 General Permit's requirements).

Data Acquisition and Management Procedures

The following procedures were used to manage and acquire data during the 2019 Field Investigation:

1. Pre-Field Investigation Activities
   a. An ArcGIS Online account was established to store, view, and manage field data.
   b. The feature-class shapefiles (described above) were published to the ArcGIS Online account and data collection maps were created.
   c. Map tiles were downloaded to the iPad for offline use within the Collector for ArcGIS App.
2. Field Investigation Activities
   a. Field personnel walked and drove through each investigation area and used the Collector for ArcGIS App (on the iPad) and the GPS tracker to document surface waters and storm water sewer features.
   b. Field personnel used the Survey123 App to conduct dry-weather outfall screenings on outfalls that were accessible from public right-of-way limits. When completing each survey, field personnel populated pre-defined fields in the Survey123 smart form template, collected photos, documented the date and time of each screening, and mapped the outfall location (i.e., latitude and longitude).
   c. At the end of each day, the data collected in the field (i.e., offline data) was synced to the ArcGIS Online account.
3. Post Field Investigation Activities
   a. Data from the field investigation was reviewed and revised (to correct errors) by project engineers using the ArcGIS Online account.
   b. The updated feature-class shapefile datasets were downloaded and stored in an ArcGIS file geodatabase.
   c. The results from the outfall dry-weather screenings collected using the Survey123 App were exported to individual Microsoft Word documents for review and completion.

Data Management and Maintenance Considerations

The data collected during the 2019 Field Investigation is currently stored in the following formats:

1. The feature-class shapefiles that define the County's storm water sewer inventory are stored in an ArcGIS file geodatabase. These files can be viewed using ArcGIS Desktop and can be configured for use in an online viewer application (such as ArcGIS Online).
2. The outfall dry-weather screening results are stored as Microsoft Word documents (.docx file format) and PDF files.

As discussed in the *Yellowstone County Storm Water Sewer Inventory: 2019 Field Instigation Summary Report*, the storm water sewer inventory is preliminary and should be updated and finalized in 2020. The 2019 Field Investigation data will be provided to the County in the formats described above, if requested.

It is recommended that the current feature-class shapefiles be used as the basis to update the finalize the Storm Water Sewer Inventory. Note that the data (both feature-class shapefiles and outfall dry-weather screenings) is configured so that the County could implement similar data collection procedures to those used in the 2019 Field Investigation to document any future changes or additions to the system.

Attachment D. Shapefile Attribute Tables

Yellowstone County MS4 – Outfall Attributes

Outfall ID	Conveyance Type	Owner	Diameter (in)	Receiving Waterbody Type	Receiving Waterbody Name	Drainage Basin	High Priority	Dry Screening Date	Condition	Condition Date
E-I90-OF-001			-			City of Billings Yellowstone River				
E-I90-OF-002	Open Channel		N/A	Lake	Lake Josephine	City of Billings Yellowstone River		7/15/2019 21:44	Good	7/15/2019 21:44
E-I90-OF-003	Culvert		16	Drainage System	Danford Drain	City of Billings Yellowstone River		7/18/2019 16:42	Good	7/18/2019 16:42
E-I90-OF-004	Culvert		24	Drainage System	Danford Drain	City of Billings Yellowstone River		7/18/2019 16:50	Good	7/18/2019 16:50
E-I90-OF-005	Culvert			Drainage System	Danford Drain					
LKWD-OF-001	Open Channel		N/A	Irrigation	Coulson Ditch	Sevenmile Creek Yellowstone River		7/22/2019 20:18	Good	7/22/2019 20:18
LKWD-OF-002	Culvert		8	Irrigation	Lockwood Ditch	Sevenmile Creek Yellowstone River		7/23/2019 22:00	Good	7/23/2019 22:00
LKWD-OF-003	Open Channel		N/A							
LKWD-OF-004	Open Channel		N/A							
LKWD-OF-005	Open Channel		N/A	Irrigation	Lockwood Ditch	Sevenmile Creek Yellowstone River		7/29/2019 20:36	Good	7/29/2019 20:37
LKWD-OF-006	Culvert		15	Irrigation	Lockwood Ditch	Sevenmile Creek Yellowstone River		7/30/2019 21:15	Good	7/30/2019 21:22
LKWD-OF-007	Open Channel		N/A							
LKWD-OF-008	Culvert			Stream	Unknown	Sevenmile Creek Yellowstone River				
LKWD-OF-009	Open Channel		N/A	Stream	Unnamed					
LKWD-OF-010	Open Channel		N/A	Stream	Dry Creek					
LKWD-OF-011	Open Channel		N/A	Stream	Unnamed	Sevenmile Creek Yellowstone River				
LKWD-OF-012	Open Channel		N/A	Stream	Unnamed	Sevenmile Creek Yellowstone River				
LKWD-OF-013	Culvert			Stream	Unnamed	Sevenmile Creek Yellowstone River				
LKWD-OF-014	Culvert			Stream	Unnamed	Sevenmile Creek Yellowstone River				
LKWD-OF-015	Open Channel		N/A							
LKWD-OF-016	Open Channel		N/A							
LKWD-OF-017	Open Channel		N/A							
LKWD-OF-018	Open Channel		N/A	Irrigation	Lockwood Ditch	Sevenmile Creek Yellowstone River				
NE-OF-001	Culvert		36	Stream	Five Mile Creek	Five Mile Creek		6/26/2019 17:29	Good	6/26/2019 17:29
NE-OF-002	Culvert		24	Stream	Five Mile Creek	Five Mile Creek		6/26/2019 16:28	Good	6/26/2019 16:28
NE-OF-003	Culvert		12	Stream	Five Mile Creek	Five Mile Creek		6/26/2019 18:56	Poor	6/26/2019 18:56
NE-OF-004	Open Channel		N/A	Irrigation	BBWA Canal	Sevenmile Creek Yellowstone River				6/26/2019 16:23
NE-OF-005	Culvert		18	Irrigation	BBWA Canal					
NE-OF-006	Culvert		96	Drainage System	Unnamed	Sevenmile Creek Yellowstone River				
NE-OF-007	Culvert		12	Stream	Five Mile Creek	Five Mile Creek				
NE-OF-008	Culvert		12	Stream	Five Mile Creek	Five Mile Creek				
NE-OF-009	Culvert		24	Stream	Alkali Creek	Alkali Creek				
NW-OF-001	Open Channel		N/A	Irrigation	Snow Ditch	City of Billings Yellowstone River		7/1/2019 21:00	Good	7/1/2019 20:54
NW-OF-002	Culvert		24	Irrigation	Snow Ditch	City of Billings Yellowstone River		7/1/2019 18:05	Poor	7/1/2019 18:05
NW-OF-003	Culvert		15	Drainage System	Shiloh Drain					
NW-OF-004	Culvert		15	Drainage System	Arnold Drain	City of Billings Yellowstone River		7/2/2019 16:45	Good	7/2/2019 16:46
NW-OF-005	Culvert			Drainage System	Shiloh Drain					
NW-OF-006	Culvert		15	Drainage System	Shiloh Drain	City of Billings Yellowstone River		7/1/2019 20:11	Good	7/1/2019 20:12
NW-OF-007	Open Channel		N/A	Irrigation	Big Ditch	City of Billings Yellowstone River				
NW-OF-008	Culvert		15	Drainage System	Shiloh Drain	City of Billings Yellowstone River		7/1/2019 20:42	Good	7/1/2019 20:43
NW-OF-009	Culvert		15	Drainage System	Arnold Drain	City of Billings Yellowstone River		7/2/2019 17:33	Good	7/2/2019 17:33

Yellowstone County MS4 – Outfall Attributes

Outfall ID	Conveyance Type	Owner	Diameter (in)	Receiving Waterbody Type	Receiving Waterbody Name	Drainage Basin	High Priority	Dry Screening Date	Condition	Condition Date
NW-OF-010	Culvert		18	Irrigation	Big Ditch	City of Billings Yellowstone River		7/2/2019 19:33	Good	7/2/2019 19:31
NW-OF-011	Culvert		18	Pond	Water retention area	City of Billings Yellowstone River		7/3/2019 14:30	Good	7/3/2019 14:32
NW-OF-012	Culvert		32	Pond	Water detention area	City of Billings Yellowstone River		7/3/2019 14:30	Good	7/3/2019 14:33
NW-OF-013	Culvert			Irrigation	Big Ditch					
SW-OF-001	Open Channel		N/A	Stream	Lower Canyon Creek	Lower Canyon Creek		7/3/2019 20:41	Good	7/3/2019 20:40
SW-OF-002	Culvert			Stream	Canyon Creek					
SW-OF-003	Culvert		8	Stream	Canyon Creek Ditch	Hogan's Slough		7/3/2019 19:56	Good	7/3/2019 19:55
W-I90-OF-001	Culvert		16	Drainage System	Yegen Drain	City of Billings Yellowstone River		7/18/2019 20:21	Good	7/18/2019 20:21
W-I90-OF-002	Culvert		16	Stream	Alkali Creek	Alkali Creek		7/19/2019 20:10	Good	7/19/2019 20:10
W-I90-OF-003	Culvert		18	Stream	Yellowstone River	City of Billings Yellowstone River		7/19/2019 20:53	Good	7/19/2019 20:54
W-I90-OF-004	Culvert		12	Stream	Yellowstone River	City of Billings Yellowstone River		7/19/2019 21:01	Good	7/19/2019 21:01
W-I90-OF-005	Open Channel		N/A	Stream	Yellowstone River	City of Billings Yellowstone River		7/19/2019 21:12	Good	7/19/2019 21:13
W-I90-OF-006	Culvert		12	Stream	Alkali Creek	Alkali Creek		7/19/2019 21:47	Good	7/19/2019 21:47
W-I90-OF-007	Open Channel		N/A	Stream	Yellowstone River	Sevenmile Creek Yellowstone River		7/22/2019 17:29	Good	7/22/2019 17:29
W-I90-OF-008	Open Channel		N/A	Stream	Yegen Drain	City of Billings Yellowstone River				
W-I90-OF-009	Culvert			Stream	Yegen Drain					
YC_OF_001	Culvert		48	Stream	Alkali Creek	Alkali Creek				
NW-OF-001	Open Channel		N/A	Irrigation	Snow Ditch	City of Billings Yellowstone River		7/1/2019 21:00	Good	7/1/2019 20:54
NW-OF-002	Culvert		24	Irrigation	Snow Ditch	City of Billings Yellowstone River		7/1/2019 18:05	Poor	7/1/2019 18:05
NW-OF-003	Culvert		15	Drainage System	Shiloh Drain					
NW-OF-004	Culvert		15	Drainage System	Arnold Drain	City of Billings Yellowstone River		7/2/2019 16:45	Good	7/2/2019 16:46

Yellowstone County MS4 – Surface Water Attributes

Unique ID	Name	Type	Receiving Waterbody	NHD Watershed	Owner	Impaired	TMDL
1	Cove Creek	Stream	TBD	Hogan's Slough		No	No
2	Cove Ditch	Irrigation	No	Hogan's Slough, COB-YR		No	No
3	Cove Creek Minor	Stream	No	Hogan's Slough		No	No
4	High Ditch	Irrigation	No	Hogan's Slough, COB-YR		No	No
5	Snow Ditch	Irrigation	Yes	City of Billings-Yellowstone River		No	No
6	Big Ditch	Irrigation	Yes	COB-YR	Big Ditch Company	No	No
7	Unknown	Drainage System	No	COB-YR		No	No
8	Canyon Creek	Stream	Yes	Lower Canyon Creek		Yes	No
9	Hogan's Slough	Stream	No	Hogan's Slough		No	No
10	Canyon Creek Ditch	Irrigation	No	Brockway Coulee, Lower Canyon Creek, Hogan's Slough, COB-YR	Canyon Creek Ditch Company	No	No
11	Shiloh Drain	Drainage System	Yes	City of Billings-Yellowstone River		No	No
12	Suburban Ditch	Irrigation	No	COB-YR		No	No
13	Arnold Drain	Drainage System	Yes	City of Billings-Yellowstone River		No	No
14	Danford Drain City/County Drain	Drainage System	Yes	COB-YR		No	No
15	Spring Creek	Stream	No	COB-YR		No	No
16	Grey Eagle Ditch	Irrigation	No	COB-YR	Grey Eagle Ditch Company	No	No
17	Yegen Drain	Drainage System	Yes	COB-YR		No	No
18	Dry Creek	Stream	TBD	Sevenmile Creek-YR		No	No
19	BBWA - Barrett Lateral?	Irrigation	Yes	Five Mile Creek	BBWA?	No	No
20	Five Mile Creek	Stream	Yes	Five Mile Creek		No	No
21	BBWA Canal	Irrigation	Yes	Sevenmile Creek-YR, Five Mile Creek, COB-YR	Billings Bench Water Association	No	No
22	Alkali Creek	Stream	Yes	Alkali Creek		No	No
23	Bitter Creek	Stream	No	Bitter Creek		No	No
24	Yellowstone River	Stream	Yes			Yes	No
25	Blue Creek	Stream	TBD	Lower Blue Creek		No	No
26	Lockwood Ditch	Irrigation	Yes	Sevenmile Creek-YR		No	No
27	Birely Drain	Drainage System	No	Hogan's Slough		No	No
28	Coulson Ditch	Irrigation	Yes	Sevenmile Creek-YR		No	No
29	BDPD	Irrigation	No	Hogan's Slough		No	No
30	Lockwood Ditch	Irrigation	Yes	Sevenmile Creek-YR		No	No
31	Unnamed	Stream	Yes	Sevenmile Creek-YR		No	No
32	Unnamed	Stream	Yes	Sevenmile Creek-Yellowstone River		No	No
33	Unnamed	Stream	Yes	Sevenmile Creek-YR		No	No
34	Unnamed	Stream	No	Sevenmile Creek-YR		No	No
35	Unnamed	Stream	No	Sevenmile Creek-YR		No	No
36	Unnamed	Stream	No	Five Mile Creek		No	No
37	Tired Man Road Pond	Pond	No			No	No
38	Peter Yegen Golf Course - Pond 2	Pond	No			No	No
39	Peter Yegen Golf Course - Pond 3	Pond	No			No	No
40	Peter Yegen Golf Course - Pond 1	Pond	No			No	No
41	Peter Yegen Golf Course - Pond 6	Pond	No			No	No

Yellowstone County MS4 – Surface Water Attributes

Unique ID	Name	Type	Receiving Waterbody	NHD Watershed	Owner	Impaired	TMDL
42	Peter Yegen Golf Course - Pond 5	Pond	No			No	No
43	Peter Yegen Golf Course - Pond 4	Pond	No			No	No
44	Unnamed	Pond	No			No	No
45	Unnamed	Natural Minor Drainage	TBD	Sevenmile Creek-Yellowstone River		No	No
48	Unnamed	Natural Minor Drainage	No	Five Mile Creek		No	No
49	Holling Drain	Drainage System	No	Five Mile Creek		No	No
50	Mary Street Drain	Drainage System	No	Five Mile Creek		No	No
53	Montana Audubon Center - Pond 1	Pond	No			No	No
54	Montana Audubon Center - Pond 2	Pond	No			No	No
61	Lake Josephine	Lake	Yes			No	No
62	Unnamed	Pond	No			No	No
66	Yegen Drain	Drainage System	Yes			No	No
68	Unnamed	Natural Minor Drainage	TBD			No	No
69	Unknown	Irrigation	No			No	No
71	Unknown	Irrigation	No			No	No
73	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
74	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
75	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
76	Unknown	Irrigation	No	City of Billings-Yellowstone River		No	No
77	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
78	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
79	Unnamed	Natural Minor Drainage	TBD			No	No
80	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
81	Unknown	Irrigation	No	Five Mile Creek	BBWA	No	No
82	Unknown	Irrigation	No	Five Mile Creek		No	No
83	Unknown	Irrigation	No	Five Mile Creek		No	No
84	Unknown	Irrigation	No	Five Mile Creek		No	No
85	Unknown	Irrigation	No	Five Mile Creek	BBWA	No	No
86	Unknown	Irrigation	No	Five Mile Creek		No	No
87	Unknown	Irrigation	No	Five Mile Creek	BBWA	No	No
88	Unknown	Irrigation	No	Five Mile Creek		No	No
89	Unknown	Irrigation	No	Five Mile Creek		No	No
90	Unknown	Irrigation	No	Five Mile Creek		No	No
92	Unknown	Pond	No	Sevenmile Creek-Yellowstone River		No	No
93	Unknown	Pond	No	Sevenmile Creek-Yellowstone River		No	No
94	Unknown	Pond	No	Sevenmile Creek-Yellowstone River		No	No
95	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
96	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
97	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
98	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
99	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No

Yellowstone County MS4 – Surface Water Attributes

Unique ID	Name	Type	Receiving Waterbody	NHD Watershed	Owner	Impaired	TMDL
100	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
101	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
102	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
103	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
104	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
105	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
108	Unknown	Natural Minor Drainage	TBD	Sevenmile Creek-Yellowstone River		No	No
109	Unknown	Drainage System	No	Hogan's Slough		No	No
110	Unknown	Irrigation	No	City of Billings-Yellowstone River		No	No
111	Unknown	Irrigation	No	City of Billings-Yellowstone River		No	No
112	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
113	Unknown	Irrigation	No	Sevenmile Creek-Yellowstone River		No	No
114	Unknown	Irrigation	Yes	Sevenmile Creek-Yellowstone River		No	No
115	Unknown	Irrigation	No	City of Billings-Yellowstone River		No	No
116	Unknown	Irrigation	No			No	No
117	Yellowstone Country Club - Pond 2	Pond	No			No	No
118	Unnamed	Pond	No			No	No
119	Unnamed	Pond	No			No	No
120	Unnamed	Pond	No			No	No
121	Unnamed	Pond	No			No	No
122	Unknown	Irrigation	No		BBWA	No	No
123	Unknown	Irrigation	No	Five Mile Creek		No	No
124	Unknown	Irrigation	No			No	No
125	Unknown	Irrigation	No			No	No
126	Unknown	Irrigation	No			No	No
127	Unknown	Irrigation	No			No	No
128	Unknown	Irrigation	No			No	No
129	Unknown	Irrigation	No			No	No
130	Unknown	Irrigation	No			No	No
131	Unknown	Irrigation	No			No	No
132	Unknown	Irrigation	No			No	No
133	Unknown	Irrigation	TBD			No	No
134	Unknown	Irrigation	No			No	No
135	Unknown	Irrigation	No			No	No
136	Lateral of Snow Ditch	Irrigation	No			No	No
137	Unknown	Irrigation	No			No	No
138	Unknown	Irrigation	No			No	No
139	Unknown	Irrigation	No			No	No
140	Unknown	Irrigation	No			No	No
141	Unknown	Irrigation	No			No	No
142	Lateral of Canyon Creek Ditch	Irrigation	No			No	No

Yellowstone County MS4 – Surface Water Attributes

Unique ID	Name	Type	Receiving Waterbody	NHD Watershed	Owner	Impaired	TMDL
143	Unknown	Irrigation	No			No	No
144	Unknown	Irrigation	No			No	No
145	Unknown	Irrigation	No			No	No
146	Unknown	Irrigation	No			No	No
147	Unknown	Irrigation	No			No	No
148	Unknown	Irrigation	No			No	No
149	Unknown	Irrigation	No			No	No
150	Unknown	Irrigation	No			No	No
151	Unknown	Irrigation	No			No	No
154	Unknown	Irrigation	No			No	No
155	Unknown	Irrigation	No			No	No
156	Unknown	Irrigation	No			No	No
157	Unknown	Irrigation	No			No	No
158	Unknown	Irrigation	No			No	No
159	Yellowstone Country Club - Pond 1	Pond	No			No	No
160	Coburn Lake	Lake	No			No	No

Yellowstone County MS4 – High Priority Area Attributes

Area ID	NHD Watershed	Receiving Water Body	General Description of Area
1	City of Billings-Yellowstone River		S 32nd St W and Hesper Rd, with Watkins & Shepard Trucking, Home Improvement Warehouse are located, need to verify infrastructure and where water goes.
2	City of Billings-Yellowstone River		Oil Refinery
3	City of Billings-Yellowstone River		Area has multiple industrial businesses including Owens Truck & Trailer Repairs, AJ's Auto Diesel Technologies, Pacific Steel - Billings, Nutra-Lix Inc., JE Williams Trucking, First Student Inc., Mountain West Holding, and General Shale.
4	City of Billings-Yellowstone River		Substation
5	City of Billings-Yellowstone River		MetraPark Area
6	City of Billings-Yellowstone River		Billings Wastewater Treatment Plant Area
7	Sevenmile Creek-Yellowstone River		Insurance Auto Auctions and Copart - Billings
8	Sevenmile Creek-Yellowstone River		Area includes Cen-Dak Leasing, S&P Supply, Wausau Supply Company, Big Sky Steel & Salvage - Recycling Yard, Superior Archery, Polar Service Center, Louie's & Dean's Montana Truck & Car Salvage, Blue Body & Paint, Exxon Mobil, United Rentals, Billings Livestock Commission, and Montana Lil's Casino.
9	Hogan’s Slough		Area includes Powder Coating Plus Northwest Inc., Billings Collision Repair, PowderKote Unlimited, and Economy Auto Sales. Businesses are in close proximity to surface waters.
10	Hogan’s Slough		Alliance Liquid Feeds
11	City of Billings-Yellowstone River		Area includes Industrial Communications, Trueline Autobody & Restoration, and CARQUEST Auto Parts.
12	Sevenmile Creek-Yellowstone River		Big Sky Steel Industrial Area, multiple pipes discharge into unnamed surface water near Lockwood Rd. bridge. Areas needs additional information, such as where pipes originate from and what is discharging into stream.

Yellowstone County MS4 – Post-Construction Facility Attributes

Unique ID	Type	Description	Flow Control	Water Quality	Year	Drainage Basin	Owner	Condition	Condition Date
1	Wet Detention Basin					Hogan's Slough			
2	Other					Hogan's Slough			
3	Bioretention					Hogan's Slough			
4	Drywell					City of Billings-Yellowstone River			
5	Infiltration Basin					Hogan's Slough			
6	Infiltration Basin					City of Billings-Yellowstone River			
7	*(To be determined)*					City of Billings-Yellowstone River			
8	Drywell					City of Billings-Yellowstone River			
9	Infiltration Basin					Hogan's Slough			
10	Infiltration Basin					Hogan's Slough			
11	Infiltration Basin					Hogan's Slough			
12	Drywell					Hogan's Slough			
13	Infiltration Basin					City of Billings-Yellowstone River			
14	Bioretention					City of Billings-Yellowstone River			
15	Biofiltration Swale					City of Billings-Yellowstone River			
16	Wet Detention Basin					City of Billings-Yellowstone River			
17	Wet Detention Basin					City of Billings-Yellowstone River			
18	Wet Detention Basin					City of Billings-Yellowstone River			
19	Wet Detention Basin					City of Billings-Yellowstone River			
20	Wet Detention Basin					City of Billings-Yellowstone River			
21	Extended Detention Basin					City of Billings-Yellowstone River			
22	*(To be determined)*					City of Billings-Yellowstone River			
23	*(To be determined)*					City of Billings-Yellowstone River			
24	*(To be determined)*					City of Billings-Yellowstone River			
25	Wet Detention Basin					City of Billings-Yellowstone River			
26	Drywell					City of Billings-Yellowstone River			
27	Drywell					City of Billings-Yellowstone River			
28	Drywell					City of Billings-Yellowstone River			
29	Drywell					City of Billings-Yellowstone River			
30	*(To be determined)*					*(To be determined)*			
31	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
32	Bioretention					Sevenmile Creek-Yellowstone River			
33	Infiltration Basin					Sevenmile Creek-Yellowstone River			
34	Wet Detention Basin					Alkali Creek			
35	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
36	Drywell					Sevenmile Creek-Yellowstone River			
37	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
38	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
39	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
40	Infiltration Basin					City of Billings-Yellowstone River			
41	Drywell					City of Billings-Yellowstone River			

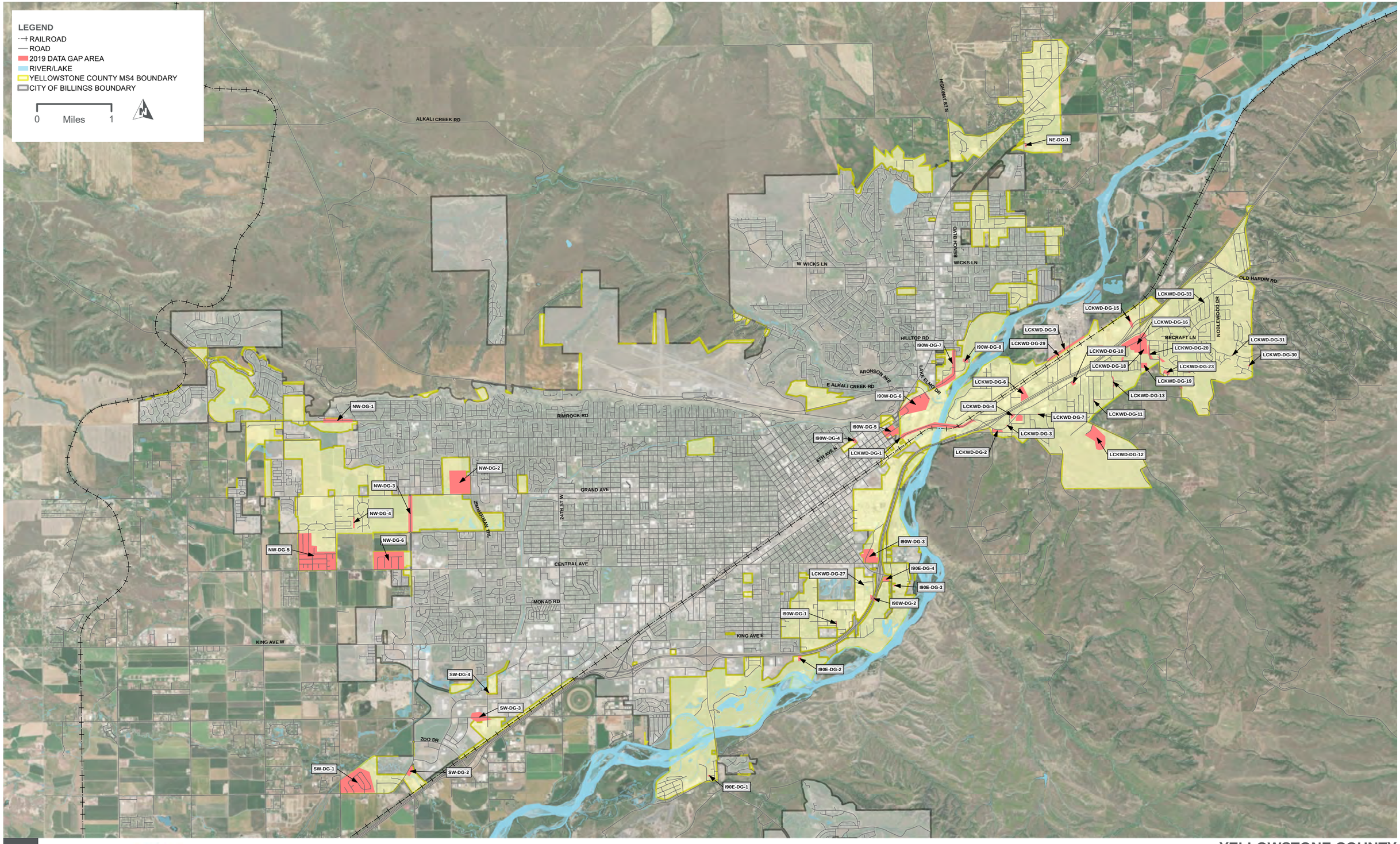
Yellowstone County MS4 – Post-Construction Facility Attributes

Unique ID	Type	Description	Flow Control	Water Quality	Year	Drainage Basin	Owner	Condition	Condition Date
42	Drywell					Hogan's Slough			
43	Infiltration Basin					Hogan's Slough			
44	Infiltration Basin					City of Billings-Yellowstone River			
45	Infiltration Basin					City of Billings-Yellowstone River			
46	Wet Detention Basin					City of Billings-Yellowstone River			
47	Infiltration Basin					City of Billings-Yellowstone River			
48	Infiltration Basin					Brockway Coulee-Yellowstone River			
49	Wet Detention Basin					City of Billings-Yellowstone River			
50	Wet Detention Basin					Alkali Creek			
51	Biofiltration Swale					Alkali Creek			
52	Wet Detention Basin					City of Billings-Yellowstone River			
53	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
54	Wet Detention Basin					Sevenmile Creek-Yellowstone River			
55	Wet Detention Basin					Sevenmile Creek-Yellowstone River			
56	Extended Detention Basin					Sevenmile Creek-Yellowstone River			
57	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
58	Extended Detention Basin					Sevenmile Creek-Yellowstone River			
59	Bioretention					Sevenmile Creek-Yellowstone River			
60	Infiltration Basin					Sevenmile Creek-Yellowstone River			
61	*(To be determined)*					Sevenmile Creek-Yellowstone River			
62	Bioretention					Sevenmile Creek-Yellowstone River			
63	Bioretention					Sevenmile Creek-Yellowstone River			
64	Bioretention					Sevenmile Creek-Yellowstone River			
65	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
66	Bioretention					Sevenmile Creek-Yellowstone River			
67	Bioretention					Sevenmile Creek-Yellowstone River			
68	Drywell					Sevenmile Creek-Yellowstone River			
69	Bioretention					Sevenmile Creek-Yellowstone River			
70	Wet Detention Basin					Sevenmile Creek-Yellowstone River			
71	Bioretention					City of Billings-Yellowstone River			
72	Infiltration Basin					City of Billings-Yellowstone River			
73	Infiltration Basin					City of Billings-Yellowstone River			
74	Infiltration Basin					City of Billings-Yellowstone River			
75	Biofiltration Swale					City of Billings-Yellowstone River			
76	*(To be determined)*					City of Billings-Yellowstone River			
77	Wet Detention Basin					Sevenmile Creek-Yellowstone River			
78	Biofiltration Swale					*(To be determined)*			
79	Drywell					Sevenmile Creek-Yellowstone River			
80	Biofiltration Swale					City of Billings-Yellowstone River			
81	Biofiltration Swale					Sevenmile Creek-Yellowstone River			
82	Drywell					Sevenmile Creek-Yellowstone River			

Yellowstone County MS4 – Post-Construction Facility Attributes

Unique ID	Type	Description	Flow Control	Water Quality	Year	Drainage Basin	Owner	Condition	Condition Date
83	Drywell					Sevenmile Creek-Yellowstone River			
84	Infiltration Basin					Sevenmile Creek-Yellowstone River			
85	Drywell					Sevenmile Creek-Yellowstone River			
86	Drywell					Sevenmile Creek-Yellowstone River			
87	Drywell					Sevenmile Creek-Yellowstone River			
88	Drywell					City of Billings-Yellowstone River			
89	Drywell					City of Billings-Yellowstone River			
90	Drywell					City of Billings-Yellowstone River			
91	Infiltration Basin					Hogan’s Slough			

Attachment E. Data Gap Information & Location Map



NOTE: THIS IS A PROVISIONAL STORM WATER SYSTEM INVENTORY MAP. FACILITIES REPRESENTED ON THIS MAP WERE IDENTIFIED DURING A DESKTOP ANALYSIS AND FIELD INVESTIGATION CONDUCTED IN 2019. THE INVENTORY WILL BE UPDATED FOLLOWING AN OWNERSHIP AND DATA VALIDATION ANALYSIS IN 2020.

YELLOWSTONE COUNTY

DATA GAP AREAS

Data Gap Location Summary Table

Data Gap ID	Receiving Waterbody	Comments
NW-DG-1		Storm sewer infrastructure is unknown.
NW-DG-2		Zimmerman Trail and Grand Ave. neighborhood and new gas station. Storm Sewer infrastructure was established by desktop and field observations, may not be the correct infrastructure.
NW-DG-3		Shiloh Rd. infrastructure must be verified.
NW-DG-4		Assumed flow near Woodhaven Ave (N & S) and South 46th St. discharges to open channel and then biofiltration swale/pond. Need to verify what is happening with storm water.
NW-DG-5		Subdivision does not have residential culverts that would storm water beneath roadway and driveways. The direction of flow was verified through desktop and field observations.
NW-DG-6		Subdivision does not have residential culverts that would storm water beneath roadway and driveways. The direction of flow was verified through desktop and field observations.
SW-DG-1		Outfall location for this neighborhood is unclear.
SW-DG-2		Lower Canyon Creek and Shiloh Rd. Mapped ditch/open conveyance & culvert from public ROW. Need additional information to determine location of culvert outlet that possibly discharges into Lower Canyon Creek. An assumed outfall has been added to the map, but needs to be confirmed.
SW-DG-3		Interaction of irrigation vs drainage facilities is unclear.
SW-DG-4		Underground storm drainage system is unclear.
I90W-DG-1		Cannot verify where storm inlets drain to.
I90W-DG-2		Unable to verify where surface water goes after crossing interstate to the East.
I90W-DG-3		Field mapped all inlets/drywells and approximate piping network. Need additional information to verify conveyance system and discharge location.
I90W-DG-4		Unable to verify where these inlets drain to.
I90W-DG-5		Inlets and storm sewer infrastructure is based on field and desktop observation.
I90W-DG-6		Where does all of the Metra Park storm sewer infrastructure outfall to?
I90W-DG-7		Bench Blvd. infrastructure, need to verify piping diameters, where the storm water goes, and verify infrastructure.
I90W-DG-8		This seems like a major outfall. Unable to verify what drains to this point.

Data Gap Location Summary Table

Data Gap ID	Receiving Waterbody	Comments
I90E-DG-1		Water flows into Sumac cul-de-sac and into inlet, then flows underground into residential private property. Possible outfall into Blue Creek, on private property, cannot confirm.
I90E-DG-2		Need additional information to map infrastructure.
I90E-DG-3		Unable to verify where these inlets drain to.
I90E-DG-4		Need to verify if these are inlets with piping to surface water or if they are drywells.
NE-DG-1	Yes	This is an outfall, where does the culvert originate?
LCKWD-DG-1		Is there underground storm sewer in this area? Is this MDT ownership?
LCKWD-DG-2		Cenex Zip Trip, A-1 Prorate Services, need to confirm infrastructure and where water goes.
LCKWD-DG-3		Do these ditches outfall/drain to the Lockwood Ditch? Also, is the owner MDT or the County?
LCKWD-DG-4		Private facilities? Where do these facilities outfall to?
LCKWD-DG-5		Does this pipe connect to a storm sewer system within property?
LCKWD-DG-6		Big Sky Steel Industrial Area, multiple pipes discharge into unnamed surface water near Lockwood Rd. bridge. Area needs additional information about where pipes are coming from and what is being discharged into the unnamed stream.
LCKWD-DG-7		Verify ownership, drainage patterns, and outfalls.
LCKWD-DG-8		Dry well?
LCKWD-DG-9		Exxon Mobile Canal, need to verify where this water goes.
LCKWD-DG-10		S Bar S Building Center
LCKWD-DG-11		Hemlock Rd. Need to verify where water goes.
LCKWD-DG-12		Hillside Village Home Park. Need to verify infrastructure and where the water goes.
LCKWD-DG-13		Is this all irrigation infrastructure? If so, outfall would be deleted
LCKWD-DG-14		Area near Farstad Oil, Wild West Diesel Repair, and Warren Transport, need to verify infrastructure and where water goes to.
LCKWD-DG-15		Outfall to unnamed creek in this area?
LCKWD-DG-16		Old Hardin Rd. and Johnson Ln. Intersection, significant amount of SW Infrastructure. Need additional information to verify piping networks and PCSMC (private and public).

Data Gap Location Summary Table

Data Gap ID	Receiving Waterbody	Comments
LCKWD-DG-17		Where does this drain to?
LCKWD-DG-18		Area includes Fly in Lube & Wash, Casey's Corner Store, Burger Kind, Town Pump Flying J, Town Pump Flying J Truck Stop, Magic Diamond Casino, and Lockwood Food Court. Need to verify infrastructure and where water goes.
LCKWD-DG-19		Lockwood Fire Department
LCKWD-DG-20		Confirm drainage patterns of unnamed creek
LCKWD-DG-21		Are these dry wells?
LCKWD-DG-22		Are there outfalls here? (Question for County and/or DEQ)
LCKWD-DG-23		Durango Pl. and La Paz Ct cul-de-sac. Need to verify where water goes and infrastructure.
LCKWD-DG-24		Outfall? (Question for County and/or DEQ)
LCKWD-DG-25		Are these outfalls (4 total)? (Question for County and/or DEQ)
LCKWD-DG-26		Add outfalls
LCKWD-DG-27		French drains/dry wells?
LCKWD-DG-28		Outfall to Coulson Ditch?
LCKWD-DG-29		Move MS4 outfall to inlet of RR pipes? Discuss with County and/or DEQ
LCKWD-DG-30		Are there outfalls here (4 total)? (Question for County and/or DEQ)
LCKWD-DG-31		Are there outfalls here? (Question for County and/or DEQ)
LCKWD-DG-32		Outfall or irrigation return flows? (ask County)
LCKWD-DG-33		Outfall? (discuss with County)
NW-DG-1		Storm sewer infrastructure unknown
NW-DG-2		Zimmerman Trail and Grand Ave. neighborhood and new gas station. Storm Sewer infrastructure was established by desktop and field observations, may not be the correct infrastructure.
NW-DG-3		Shiloh Rd. infrastructure must be verified.

2019 Dry Weather Screening Results Summary Table

2019 DRY WEATHER SCREENING RESULTS SUMMARY

Outfall ID	Screening Date	Flow Present?	IDDE Characterization	Follow-Up Needed?	Follow Up Schedule	Follow-Up Results
E-I90-OF-002	7/15/2019	Yes	Not Likely	No. The flows are from Grey Eagle Ditch (irrigation).	N/A	N/A
E-I90-OF-003	7/18/2019	No	Not Likely	No	N/A	N/A
E-I90-OF-004	7/18/2019	No	Not Likely	No	N/A	N/A
E-I90-OF-005						
LKWD-OF-001						
LKWD-OF-002						
LKWD-OF-003						
LKWD-OF-004						
LKWD-OF-005	7/29/2019	No	Not Likely	No	N/A	N/A
LKWD-OF-006	7/30/2019	Yes	Potential	A follow-up IDDE investigation is recommended to: #1) Determine the source of the discharge, #2) Determine if this is an illicit discharge, #3) Verify/determine if this is a storm water outfall (could be an irrigation facility).	Schedule for summer 2020	
LKWD-OF-007						
LKWD-OF-008						
LKWD-OF-009						
LKWD-OF-010						
LKWD-OF-011						
LKWD-OF-012						
LKWD-OF-013						
LKWD-OF-014						
LKWD-OF-015						
LKWD-OF-016						
LKWD-OF-017						
LKWD-OF-018						
NE-OF-001	6/26/2019	No	Not Likely	No	N/A	N/A
NE-OF-002	6/26/2019	Yes	Potential	On private residential open area, not able to access closely. A follow-up IDDE investigation is recommended to determine the source of flow.	Schedule for summer 2020	
NE-OF-003	6/26/2019	No	Not Likely	Culvert outlet end is crushed and water is limiting conveyance capacity. Consider repairing or replacing culvert.		
NE-OF-004						
NE-OF-005						
NE-OF-006						
NE-OF-007						
NE-OF-008						
NE-OF-009						
NW-OF-001						
NW-OF-002						

Outfall ID	Screening Date	Flow Present?	IDDE Characterization	Follow-Up Needed?	Follow Up Schedule	Follow-Up Results
NW-OF-003						
NW-OF-004	7/2/2019	No	Not Likely	No	N/A	N/A
NW-OF-005						
NW-OF-006	7/1/2019	No	Not Likely	No	N/A	N/A
NW-OF-007						
NW-OF-008	7/1/2019	No	Not Likely	No	N/A	N/A
NW-OF-009	7/2/2019	No	Not Likely			
NW-OF-010						
NW-OF-011						
NW-OF-012						
NW-OF-013						
SW-OF-001	7/3/2019	No	Not Likely	No	N/A	N/A
SW-OF-002						
SW-OF-003	7/3/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-001	7/18/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-002	7/19/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-003	7/19/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-004	7/19/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-005	7/19/2019	No	Potential	No. There is potential for illicit discharges that drain into the Yegen Drain, but checking for sources at this location would inefficient to trace.	N/A	N/A
W-I90-OF-006	7/19/2019	No	Not Likely	No	N/A	N/A
W-I90-OF-007						
W-I90-OF-008						
W-I90-OF-009						
YC_OF_001						

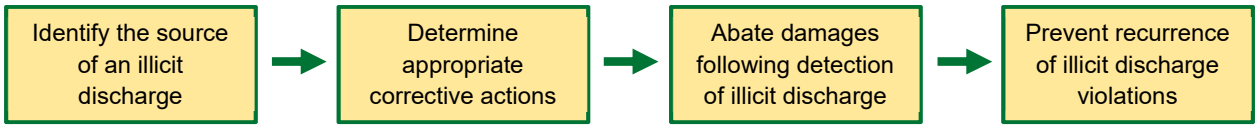
ILLICIT DISCHARGE INVESTIGATION AND CORRECTIVE ACTION PLAN WITHIN YELLOWSTONE COUNTY, MONTANA

January 2020

Introduction

In accordance with the General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4), issued by the Montana Department of Environmental Quality (DEQ), Yellowstone County (County) is required to develop and implement an Illicit Discharge Investigation and Corrective Action Plan. Illicit discharge as defined in the Administrative Rules of Montana (ARM) 17.30.1102(7) "means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to an MPDES permit (other than the MPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities." This plan provides guidelines for tracking potential illicit discharges and criteria by which County personnel can determine the most appropriate corrective action to eliminate an illicit discharge. *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, developed by the Center for Watershed Protection (CWP), was utilized to guide the development of this plan.

This plan has been developed with the following objectives in mind:



1 Source Detection and Investigation Procedures

Potential illicit discharges can be revealed through various sources such as outfall inspections, reports from County personnel, or public complaints. If the source of a potential illicit discharge is not immediately clear, the County will begin an illicit discharge investigation following the procedures outlined in this section. This investigation will be conducted within 7 calendar days of notification of a suspected illicit discharge.

In cases where the source of an illicit discharge is immediately known (e.g., when an illegal dumping or illicit discharge problem is directly observed by County personnel), it is generally not necessary to follow investigation procedures. In such cases, the procedures outlined in Sections 1.1 - 1.5 will be completed and County personnel will then refer to the corrective action procedures provided in Section 2.

1.1 Documentation

When a potential illicit discharge is identified, an investigation file will be started. An Illicit Discharge Investigation and Corrective Action Form which includes a creation date, case description, and any information related to the observed or suspected problem will be filled out. The County will keep an accurate log of labor, materials and costs associated with the investigation for invoicing the responsible party, if necessary. The form will be started prior to

completing any additional field work unless the nature of the discharge necessitates an immediate response. As the investigation proceeds, any field investigations, photographs, corrective actions, or other activities associated with the suspected problem area will be documented and saved on file as this becomes the County's official record of the illicit discharge detection and elimination (IDDE) investigation. Additional documentation may include the following:

- Copy of outfall inspection report
- Photographs
- Additional field notes
- Lab testing results
- Informal notices sent and responses received
- Correspondence (mail, email, telephone logs)
- Proof of corrected problems (clean field investigation report)

1.2 Site Visit

In cases where County staff did not discover the potential illicit discharge (e.g. the County was made aware via a public complaint), a site visit will be conducted to confirm the nature of the problem, assess applicability to County MS4 program authority, and determine the prioritization of the investigation.

1.3 Assess Applicability

The County currently has limited authority to enforce storm water regulations within the MS4 boundary. In cases where an illicit discharge is suspected to originate on private property, County personnel will coordinate with the property owner as allowed by state law to verify the source of the issue. If coordination by County personnel does not prove sufficient, the County will notify the appropriate agency by following the procedures provided in Section 1.5.

1.4 Prioritization

Each suspected illicit discharge has the potential to cause damage to the MS4 and receiving waters; however, certain situations may warrant more immediate attention than others and each investigation must be prioritized in order to protect public health and avoid serious threats to the environment or damage to property. The following items will be considered when determining the immediacy of the investigation:

- Discharges posing an immediate threat to human health
- Discharges near a surface or drinking water source
- Discharges containing substances with significant potential to cause immediate damage to the environment
- Large volume or continuous flow
- Potential threat of contaminating groundwater

1.5 Notification of Appropriate Agencies

Threat to Human Health or Environment:

Discharges and/or activities which are believed to be an immediate threat to human health or the environment will be reported to local emergency personnel, Montana DEQ, and/or the local health department. DEQ's Enforcement Division may assist in the investigation and corrective action process if necessary. Contact information for local emergency personnel and DEQ are as follows:

Local Emergency Personnel
Phone: 911

Montana DEQ Enforcement Division
Phone: (406) 444-0379
Website: https://deq.mt.gov/DEQAdmin/ENF

RiverStone Health is the local health department that helps protect people from health threats such as food-borne illnesses, natural and man-made disasters, toxic exposures, and preventable illness and injury. This includes hazardous spills near drinking water sources, parks with dogs and children, and potential to contaminant soils and groundwater. The phone number and website to access RiverStone Environmental Health Services are as follows:

Phone: (406) 256-2770
Website: https://riverstonehealth.org/our-organization/contact-us/

Hazardous Materials:

The City of Billings Fire Department or the Lockwood Fire Department will be contacted for situations requiring hazardous materials response. The phone number for the City of Billings Fire Department and the Lockwood Fire Department are as follows:

City of Billings Fire Department
Phone: (406) 657-8423

Lockwood Fire Department
Phone: (406) 252-1460

Limitations of Regulatory Authority

The County has limited regulatory authority to enforce corrective actions. If corrective actions coordinated by the County do not prove sufficient, the County will solicit assistance from other regulatory agencies including Montana DEQ, City of Billings Environmental Division, and Montana Department of Transportation (MDT). Contact information for respective agencies is provided below:

Montana DEQ Enforcement Division
Phone: (406) 444-0379

City of Billings Environmental Division
Phone: (406) 247-8517

MDT Environmental Services
Phone: (406) 252-4138

1.6 Select Appropriate Investigation Method

The County has limited authority to investigate suspected illicit discharges within the MS4 boundary. The investigation methods described in this section, and as allowed by state law, will be used by the County to investigate discharges that occur within public right-of-way (ROW), on County-owned property, or when private property owners allow access to County personnel. The four investigation methods which may be used to trace and identify the source of a suspected illicit discharge are as follows:

- Storm Drain Network Investigations
- Drainage Area Investigations
- On-Site Investigations
- Septic System Investigations

The County will review available information (e.g. initial documentation, previous investigations conducted in the vicinity, etc.) and select the appropriate method. Each method, as described by the CWP, is briefly discussed below. Once the appropriate method is selected and approved by the Public Works Director, Chapter 13 of the CWP's *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* will be consulted, which contains detailed guidance on how to efficiently conduct each investigation.

After the appropriate investigation method has been selected, the County will coordinate the appropriate resources to begin the investigation to trace and identify the source of the illicit discharge.

i.) Storm Drain Network Investigations

County personnel inspect manholes and other storm water conveyance system features within the area of the suspected illicit discharge and examine the conveyance system contents for chemical or physical indicators of contaminants in an effort to narrow the illicit discharge location to an isolated pipe segment between two manholes. Indicators may include odor, color, staining, unusual films, floatables, or samples which may be taken for chemical testing in a laboratory. The County's storm drainage system map will be helpful in determining which features to visit and inspect. After the conveyance system segment has been isolated, on-site investigations may be used to locate the exact location of the illicit discharge.

ii.) Drainage Area Investigations

When a specific or known contaminant is suspected or if the known contaminant points towards a short list of potential discharge sources, it is often most effective to survey the drainage area from the limits of public ROW and focus on sites which are known to produce and/or contain the contaminant which has been identified within the storm drain network. The primary methods for conducting drainage area investigations include windshield surveys and mapping analyses. While conducting the investigation, it is recommended to consult the mapped pipe network and compare this to maps of high priority businesses, land use types and zoning, and on-going construction projects.

iii.) On-Site Investigations

The on-site investigation diagnoses the exact location and source of an illicit discharge and should be performed after the illicit discharge has been isolated to a specific section of the storm drain network. Techniques such as dye testing the plumbing systems of households and buildings, video testing, and smoke testing may be necessary for this type of investigation. It is important to understand when a technique would work best for the application and to understand limitations that may deem the technique unusable.

iv.) Septic System Investigations

Some residential watersheds do not have sanitary sewer systems or storm water conveyance piping, but rather have septic systems and alternative practices for dealing with sanitary wastewater. Storm water conveyance systems consisting of swales, ditches, and ponds are common in these watersheds and illicit discharges often enter the storm water conveyance system through indirect discharges from septic systems or direct discharges from bypassed septic systems. Two separate types of analyses are typically employed in these areas: on-site septic investigations and detailed system inspections. On-site septic investigations typically include homeowner system audits or surface condition analyses. Detailed system inspections are more thorough, typically involve the use of infrared imagery, and are usually appropriate if the on-site investigations are not successful in locating the source of an illicit discharge.

1.7 Document Investigation Findings

Once the source of an illicit discharge has been identified, the County will document the findings and progress towards the corrective action process. Documentation may include but are not limited to:

- Investigation method(s)
- Photographs
- Additional field notes
- Lab testing results

2 Corrective Action Process and Procedures

After the source of an illicit discharge has been identified, the County will begin the corrective action process to eliminate the discharge. The minimum timeframe for correction of an illicit discharge is 6 months; however, high priority discharges will be corrected immediately. Where applicable, corrective actions will focus first on education to promote voluntary compliance and escalate to increasingly severe enforcement actions by coordinating with other regulatory agencies (as described in the County Enforcement Response Plan (ERP)).

2.1 Determine Type of Illicit Discharge

The type of an illicit discharge can be generalized as either behavioral or structural, each of which is discussed below.

i.) Behavioral

The nature of the illicit discharge is an action, operation, or conduct and the illicit discharge will be eliminated when this behavior is modified.

ii.) Structural

The illicit discharge is caused by a physical configuration or connection which requires modification of the system in order to eliminate the discharge.

2.2 Assign Responsibility

The party responsible to fix the illicit discharge will be identified based on the nature and location of the illicit discharge.

i.) Private Property Owner

The County will encourage a private property owner, as allowed by state law, to fix an illicit discharge if the following situations occur:

1. A discharge is observed or suspected to originate on private property and discharge directly into storm sewer infrastructure or waterbody that is associated with the County's MS4 system or that is within the public ROW.
2. An unapproved storm sewer connection is observed or suspected to originate on private property and connect to storm sewer infrastructure that is associated with the County's MS4 system or that is located within the public ROW.

ii.) County Public Works Department

The County will be responsible to fix an illicit discharge if the following situations occur:

1. A discharge within the MS4 boundary is observed or suspected to originate on County-owned property or within the limits of County ROW.
2. An unapproved storm sewer connection within the MS4 boundary is observed or suspected to originate on County-owned property and connect to storm sewer infrastructure that is associated with the County's MS4 system or that is located within the limits of County ROW.

iii.) Other Public Entity

A separate public entity, such as City of Billings or MDT, will be notified and encouraged to fix an illicit discharge if the following situations occur:

1. A discharge is observed or suspected to originate on property that is owned by a separate public entity and discharge directly into storm sewer infrastructure that is associated with the County's MS4 system or that is within the public ROW.
2. An unapproved storm sewer connection within the MS4 boundary is observed or suspected to originate on property that is owned by a separate public entity and connect to storm sewer infrastructure that is associated with the County's MS4 system or that is located within the limits of County ROW.

2.3 Select Appropriate Corrective Action

If deemed to be safe and within the County's authority and capabilities, the illicit discharge may be eliminated immediately using appropriate and available methods. For cases where a private property owner is responsible, the County will coordinate with the responsible party to determine

an appropriate method to eliminate the illicit discharge. When necessary, enforcement actions as listed in ERP will be used to help eliminate the illicit discharge in a timely manner.

Chapters 8 and 14 of the CWP's *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* provides a list of methods to remove and eliminate illicit discharges and will be used, when applicable and within the County's authority, to determine the appropriate corrective action.

2.4 Confirm and Document Elimination of Contamination Source

A site visit may be necessary to confirm the source has been eliminated, the corrected operations are sufficient, and/or the structural problem has been fixed according to the approved corrective action. In other cases it may be sufficient to allow a verbal confirmation from the property owner, a photograph of the modification, as-built drawings, or simply verify that all signs of the illicit discharge are gone. Once confirmed, the County will close the investigation and correction file by noting the elimination of the discharge within the Illicit Discharge Investigation and Corrective Action Form.

2.5 Enforcement Actions

In circumstances where the responsible party does not volunteer compliance, refuses compliance, or disputes responsibility, the County will take enforcement actions consistent with the ERP in order to pursue elimination of the discharge. Note that voluntary compliance in eliminating an illicit discharge may not preclude the responsible party from enforcement actions.

ATTACHMENT A
ILLICIT DISCHARGE INVESTIGATION & CORRECTIVE ACTION FORM

County Personnel Involved | Date

Type of Initial Notification (e.g. Phone call from public, observation by County personnel, Dry weather screening, etc.)

Location of Illicit Discharge (Address)

Responsible Party Name/Company | Telephone ( ) - | ☐ *Repeat Offender* | ☐ *High Priority Site*

Street | City | Zip

Description of Investigations Conducted and Investigation Findings:

Description of Corrective Action:

Enforcement Action (if applicable):

Level of Response | Selected Remedy | Date for Follow-Up

Additional Notes:

Confirmation of Resolution:

County Personnel | Date

Appendix E. MCM 4 – Construction Site Storm Water Management

YELLOWSTONE COUNTY, MONTANA
CONSTRUCTION SITE VISIT INSPECTION FORM

General Information

Project Name:

Location:

Date of Inspection: | Start/End Time:

Inspector's Name(s):

Inspector's Title(s):

Inspector's Contact Information (phone):

Describe Present Phase of Construction:

Type of Inspection:

❑ Beginning of Construction ❑ Pre-storm event ❑ During rain event

❑ Post-rain event ❑ Conclusion of Project ❑ Response to violation or complaint

Weather Information

Has it rained since the last inspection? ❑Yes ❑No

If yes, provide:

Storm Start Date & Time: Storm Duration (hrs): Approximate Rainfall (in):

Weather at time of this inspection:

❑ Clear ❑ Cloudy ❑ Raining ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds

❑ Other: Temperature:

Do you suspect that discharges may have occurred since the last inspection?

❑Yes ❑No

Are there any stormwater discharges at the time of inspection? ❑Yes ❑No

If yes, provide location(s) and a description of stormwater discharged from the site (presence of suspended sediment, turbid water, discoloration, and/or oil sheen:

Prohibited Discharges

Are there any prohibited discharges at the time of inspection? ❑Yes ❑No

If yes, provide location(s) and a description:

	BMP/Activity	Implemented?	Maintained?	Corrective Action Needed & Notes
Erosion and Sediment Controls				
1	Are stormwater volume and velocity controls being used to minimize soil erosion within the site? (e.g. check dams, fiber rolls, etc.)	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
2	Are stormwater volume and velocity controls being used to minimize soil erosion at discharge locations? (e.g. stilling basins, fiber rolls, etc.)	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
3	Are efforts being made to minimize the amount of soil exposed throughout the site?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
4	Are efforts being made to minimize the disturbance of steep slopes?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
5	Are perimeter controls and sediment barriers (e.g. silt fence) adequately installed (keyed into substrate) and maintained?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
6	Are storm drain inlets properly protected?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
7	Are discharge points and receiving waters free of sediment deposits? If no, provide locations.	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
8	Is there evidence of sediment being tracked into the street?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
9	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected by natural buffers, barriers, or similar BMPs?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
10	Are efforts being made to minimize soil compaction and preserve topsoil?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	

	BMP/Activity	Implemented?	Maintained?	Corrective Action Needed & Notes
Soil Stabilization				
11	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Dewatering				
12	Are discharges from dewatering activities being managed by appropriate controls?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Pollution Prevention Measures				
13	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
14	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
15	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
16	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
17	Are vehicle and equipment fueling, cleaning, material storage, and maintenance areas free of spills, leaks, or other harmful materials?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Surface Outlets and Miscellaneous				
18	When discharging from basins and impoundments, are outlet structures that withdraw water from the surface being used?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
19	Are there locations where additional BMPs appear to be necessary?	❑Yes ❑No ❑ N/A	❑Yes ❑No ❑ N/A	
Describe any incidents of non-compliance not described above:				

Inspector's Signature

Date

YELLOWSTONE COUNTY, MONTANA
PUBLIC WORKS DEPARTMENT
CONSTRUCTION SITE STORMWATER INSPECTION FREQUENCY DETERMINATION PROTOCOL

NAME OF PROJECT	PROJECT FILE NO.	ADDRESS

TOTAL PROJECT ACRES		TOTAL DISTURBED ACRES

OWNER	ADDRESS	PHONE NUMBER

Template Instructions: The following template contains example criteria which may be used to prioritize construction sites in order to determine inspection frequency. In accordance with the MS4 General Permit, high-priority sites are to be inspected a minimum of three times within the duration of a construction project. This template assumes that all other sites will be inspected at least once during a construction project's lifespan. Some of the criteria provided within the table below were taken directly from the General Permit. Criteria not required within the permit can be removed and/or additional criteria can be added, if desired. Rating values have not been provided because it is expected that each MS4 will utilized different rating values; therefore, rating values should be selected to meet the needs of your MS4 system.

YELLOWSTONE COUNTY PUBLIC WORKS

Instructions:

To determine the suggested inspection frequency of a given construction site, begin by filling out the Construction Site Rating Table below and add up all of the applied ratings. Then utilize the Inspection Frequency Determination Table to determine the priority and minimum inspection frequency for the site.

Construction Site Rating Table

Criteria	Rating System	Rating Value	Applied Rating for Each Criteria
Pre-determined priority of the control (if applicable)	Non High-Priority	0	
	High-Priority	X	
Project size	Less than 1 acre	X	
	1 to 5 acres	X	
	5+ acres	X	
Proximity to a surface water	1,000+ feet from site's outfall	X	
	200 to 1,000 feet from site's outfall	X	
	Direct discharge to surface water	X	
Steepness of project site slopes	Mostly Flat Ground	X	
	Slopes of 3:1	X	
	Slopes of 2:1 or steeper	X	
Discharge to a waterbody impaired for pollutants expected from active construction projects	No	X	
	Yes	X	
History of operator compliance	No history of non-compliant	X	
	Once non-compliant	X	
	2+ non-compliant	X	
Risk of Hazardous Material Spills/ Leaks	Low Risk: No hazardous materials stored on site	X	
	Medium Risk: Non-liquid hazardous materials stored on site	X	
	High Risk: Liquid hazardous materials stored on site	X	

Total = _____

The total of all the ratings will indicate the priority of the inspection for this construction site. The following is a suggested template which could be used to define inspection frequency based on site priority:

Inspection Frequency Determination Table

Total Rating Value	Priority	Inspection Frequency
0 to X	Low	1.
X to Y	Medium	1.
Y to Z	High	1. Once at commencement of construction after BMPs have been implemented
		2. Once within 48-hours after one rain event of 0.25 inches or greater
		3. Once at the conclusion of the project prior to finalization

Inspection Frequency for Construction Site

Site Priority: _____

Inspection Frequency:

DATE RECEIVED

YELLOWSTONE COUNTY, MONTANA
PUBLIC WORKS DEPARTMENT
CONSTRUCTION STORMWATER MANAGEMENT PLAN REVIEW CHECKLIST

NAME OF PROJECT	PROJECT FILE NO.	ADDRESS

TOTAL PROJECT ACRES	TOTAL DISTURBED ACRES

Latitude: Longitude:

GPS LOCATION OF CONSTRUCTION SITE

APPLICANT	ADDRESS	PHONE NUMBER

OWNER *(If different from Applicant)*	ADDRESS	PHONE NUMBER

Review History

First Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

Second Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

Third Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

REPORT OF TECHNICAL REVIEW

____ The Construction Stormwater Management Plan for the above named project or activity **includes** the necessary components identified within the attached checklist.

____ The Construction Stormwater Management Plan for the above named project or activity **does not include** the necessary components identified within the attached checklist through failure to include the following:

_____

_____

_____

Review by: _____

Signature: _____ **Date:** _____

Project Name: _____ Applicant: _____

General Information	Complete	Incomplete	N/A
1. Describe the project location (address, parcel number, etc…)			
a. Description of project activity			
2. Areas (ac)			
a. Total disturbed area			
b. Existing impervious area			
3. Construction schedule/sequence			
4. Identify site features			
a. Limits of improvements relative to neighbors or a Vicinity Map			
b. Limits of clearing and grading			
c. Existing vegetation delineated			
d. Existing and proposed site topography			
e. Existing and proposed runoff direction			
f. Surface waters and storm conveyance systems within 200' of project			
g. Description of outfall and receiving surface waters			
h. Protection of waterways, receiving surface waters and natural resources			
i. Construction Stormwater Management Plan is phased with construction			
j. Stockpile locations, staging areas and access points defined			
k. Show all areas of construction, including but not limited to: structures, retaining walls, roads, drives, utilities, trenches, scaffolds, catch basins, etc.			
l. Description of site soil			
m. Description of watershed tributary to site			
5. Maintenance Plan for Control Facilities			
6. Copies of Design Waivers or Variances			
7. Copy of NOI and SWPPP as submitted to DEQ, if applicable			
Erosion and Sediment Controls			
1. Design considerations and erosion control BMPs are specified to:			
a. Control stormwater volume and velocity within the site to minimize soil erosion through use of controls such as check dams, fiber rolls, etc.			
b. Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion through use of controls such as stilling basins, fiber rolls, etc.			
c. Minimize the amount of soil exposed during construction activity			
d. Minimize the disturbance of steep slopes			

Project Name: _____ Applicant: _____

Erosion and Sediment Controls (cont.)	Complete	Incomplete	N/A
e. Minimize sediment discharges from the site through use of perimeter controls such as silt fence, fiber rolls, diversion berms, etc.			
f. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible			
g. Minimize soil compaction and, unless infeasible, preserve topsoil			
Soil Stabilization			
1. The following soil stabilization requirements are clearly communicated:			
a. Stabilization of disturbed areas must be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days			
b. If initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be specified			
Dewatering			
1. If applicable, discharges from dewatering activities are managed by appropriate controls such as sedimentation basins, sediment traps, etc. *Note: This does not preclude the contractor from the requirement to obtain a dewatering permit from MT DEQ.*			
Pollution Prevention Measures			
1. Pollution prevention measures are specified to:			
a. Specify treatment of wash waters in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge			
b. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to storm water			
c. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures			
Prohibited Discharges			
1. Wastewater from washout of concrete is prohibited or managed by appropriate controls			
2. A statement (or statements) which prohibit discharges of the following:			
a. Wastewater from washout and cleanout of stucco, paint, from release oils, curing compounds and other construction materials			
b. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance			
c. Soaps or solvents used in vehicle and equipment washing			
Surface Outlets			
1. When discharging from basins and impoundments, outlet structures that withdraw water from the surface are used (unless infeasible)			

Appendix F. MCM 5 – Post-Construction Storm Water Management in New and Redevelopment Areas

YELLOWSTONE COUNTY, MONTANA
PUBLIC WORKS DEPARTMENT
POST-CONSTRUCTION STORMWATER MANAGEMENT CONTROL
INSPECTION FREQUENCY DETERMINATION PROTOCOL

NAME OF STORMWATER CONTROL	PROJECT FILE NO.	ADDRESS
Latitude:	Longitude:	
	GPS LOCATION	
RESPONSIBLE PARTY		PHONE NUMBER

Template Instructions: The following template contains example criteria which may be used to prioritize post-construction stormwater management controls in order to determine inspection frequency. In accordance with the MS4 General Permit, high-priority sites are to be inspected annually, at a minimum. This template assumes that all other sites will be inspected at least once during the five year permit cycle. The criteria provided within the table below were taken directly from the General Permit and additional criteria can be added, if desired. Rating values have not been provided because it is expected that each MS4 will utilized different rating values; therefore, rating values should be selected to meet the needs of your MS4 system.

Instructions:

To determine the suggested inspection frequency of a given stormwater management control, begin by filling out the Post-Construction Stormwater Management Control Rating Table below and add up all of the applied ratings. Then utilize the Inspection Frequency Determination Table to determine the priority and minimum inspection frequency for the site.

Post-Construction Stormwater Management Control Rating Table

Criteria	Rating System	Rating Value	Applied Rating for Each Criteria
Pre-determined priority of the control (if applicable)	Non High-Priority	0	
	High-Priority	X	
Proximity to a surface water	1,000+ feet from site's outfall	X	
	200 to 1,000 feet from site's outfall	X	
	Direct discharge to surface water	X	
Drainage Area Treated	Less than X acre(s)	X	
	X to Y acres	X	
	Y+ acres	X	
Land Use Type	Residential	X	
	Commercial	X	
	Industrial	X	
	[other]	X	
Discharge to a waterbody impaired for pollutants expected from stormwater runoff	No	X	
	Yes	X	
[other]		X	
		X	
		X	

Total = _____

The total of all the ratings will indicate the priority of the inspection for this construction site. The following is a suggested template which could be used to define inspection frequency based on site priority:

Inspection Frequency Determination Table

Total Rating Value	Priority	Inspection Frequency[1]
0 to X	Low	1. Once every X year(s)
		2. [additional criteria if desired, e.g. after snowmelt, rain event, etc…]
		3.
X to Y	Medium	1. Once every X year(s)
		2. [additional criteria if desired, e.g. after snowmelt, rain event, etc…]
		3.
Y to Z	High	1. Once each year
		2. [additional criteria if desired, e.g. after snowmelt, rain event, etc…]
		3.

[1]Note: Consult the Operation and Maintenance (O&M) Plan/Manual for the given stormwater management control for additional inspection frequency requirements or recommendations. Compare O&M Manual/Plan to the results of the above table and select the inspection frequency which is more frequent for the given control.

Inspection Frequency for Post-Construction Stormwater Management Control

Site Priority: _____

Inspection Frequency:

DATE RECEIVED

YELLOWSTONE COUNTY, MONTANA
PUBLIC WORKS DEPARTMENT
POST-CONSTRUCTION STORMWATER MANAGEMENT
PLAN REVIEW CHECKLIST

NAME OF PROJECT	PROJECT FILE NO.	ADDRESS
TOTAL PROJECT ACRES		TOTAL DISTURBED ACRES
Latitude:	Longitude:	
GPS LOCATION OF CONSTRUCTION SITE		
APPLICANT	ADDRESS	PHONE NUMBER
OWNER *(If different from Applicant)*	ADDRESS	PHONE NUMBER

Review History

First Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

Second Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

Third Review

Plan Received on: _____ **Approved/Denied:** _____

Review Completed on: _____ **Comments:** _____

Reviewed by: _____ _____

REPORT OF TECHNICAL REVIEW

____ The Stormwater Management Plan for the above named project or activity **includes** the necessary post-construction controls in order to comply with the State and local post-construction stormwater requirements (as identified within the attached checklist).

____ The Stormwater Management Plan for the above named project or activity **does not include** the necessary post-construction controls in order to comply with the State and local post-construction stormwater requirements (as identified within the attached checklist) through failure to include the following:

_____

_____

_____

Review by: _____

Signature: _____ **Date:** _____

Project Name: _____ Applicant: _____

General Information	Complete	Incomplete	N/A
1. Location			
a. Address, subdivision name, legal description, etc…			
2. Type of development (residential, commercial, etc...)			
3. Areas (ac)			
a. Total disturbed area			
b. Existing impervious area			
c. Post-development impervious area			
4. Drainage basin maps are provided which clearly label the following:			
a. Existing basin boundaries			
b. Existing time of concentration flowpaths for each basin			
c. Post-development basin boundaries			
d. Post-development time of concentration flowpaths for each basin			
e. Discharge location(s)			
f. Receiving waters within 200 feet of project are identified			
5. Montana Licensed Engineer Stamp			
Drainage Plan Content			
1. Topographic map of existing and finished grade contours at 2-foot max intervals			
2. Location of each permanent stormwater control			
3. Plan and profile of each permanent stormwater control			
4. Invert elevations, slopes, and lengths of storm drain facilities			
5. Size, types, invert elevations and lengths of all culverts and pipe systems			
6. Discharge points clearly labeled			
7. Receiving surface waters identified			
8. Existing on-site natural resources identified and protected			
9. FEMA floodplains identified			
Calculations and Design Documentation			
1. Hydrology calculations			
a. State runoff method used (rational, SCS, etc…)			
b. State modeling constants and assumptions			
c. Description of design storms (frequency, depth, duration)			
d. Existing and post-development land uses			

Project Name: _____ Applicant: _____

Calculations and Design Documentation (Continued)	Complete	Incomplete	N/A
e. Existing and post-development peak runoff rate for each design storm			
f. Existing and post-development runoff volume for each design storm			
2. Post-construction BMP sizing calculations			
a. State design requirements (0.5-inch requirement, TSS removal, or other)			
b. Required permanent controls capacities, flow rates, and operating levels			
c. Sizing calculations with results			
d. A statement documenting compliance with design requirements			
e. If 0.5-inch or TSS removal requirements are not met, provide documentation showing the impracticability of infiltration, evapotranspiration, capture for reuse, and treatment.			
3. Culvert and pipe system capacities and outlet velocities			
4. Ditch capacities and velocities			
Additional Information			
1. Permits, easements, setbacks, and discharge agreements			
2. Floodplain maps			
3. Operations and Maintenance Manual for each permanent stormwater control			
a. Identify the owner			
b. Identify the party responsible for long-term O&M			
c. A schedule of inspection and maintenance for routine and non-routine maintenance tasks to be conducted			
d. System failure and replacement criteria to define the structure's performance requirements			
4. Geotechnical Report			

Appendix G. MCM 6 – Pollution Prevention/Good Housekeeping for Permittee Operations

Minimum Control Measure 6: Pollution Prevention/Good Housekeeping for Permittee Operations

The County owns and operates various types of facilities in the MS4 boundary. Per Part II.A.6.a of the General Permit, the County is developing and implementing an operation and maintenance program that has three primary components:

Elements of Pollution Prevention and Good Housekeeping Operations
☑ Facility and Activity Inventory
☐ Facility and Activity SOPs
☐ Internal Storm Water Pollution Prevention Training

1. An inventory of County-owned and operated facilities and activities that have the potential to release pollutants.
2. Standard operating procedures (SOPs) for facilities and activities that identify storm water pollution prevention controls.
3. A program to conduct annual storm water pollution prevention training for all County staff directly involved with implementing the SOPs.

The following sections provide an overview of the County-owned and operated facilities, the activities that take place at each facility, and the plan for developing standard operating procedures that address pollution prevention.

1.0 Inventory of Permittee Owned/Operated Facilities and Activities

The County currently owns and operates various types of facilities including parks, parking lots, buildings, and maintenance shops. In accordance with Part II.A.6.a.i of the MS4 General Permit, this section provides an inventory of the County's facilities and activities that have the potential to release contaminants to the MS4.

1.1 Facility Inventory

The County's facilities are separated into two categories, Tier 1 and Tier 2 facilities.

- Tier 1 facilities have an increased potential to release contaminants to the MS4 due to the type of pollutants generated or stored at these facilities (e.g., oils, hazardous materials, etc.). Examples of Tier 1 facilities include vehicle fleet maintenance areas, public event venues, high-traffic parks, and major parking lots. Tier 1 facilities are identified in Table 1. The County is developing facility-specific storm water pollution prevention SOPs for these facilities.
- Tier 2 facilities have less potential to release contaminants to the MS4 due to the decreased risk of exposure associated with activities taking place at these facilities. Examples of Tier 2 facilities include low-traffic parks and small parking lots. A summary of Tier 2 facilities is provided in Table 2 and a comprehensive list is provided in Table A-1 (Attachment A). The County is developing activity-based storm water pollution prevent SOPs for these facilities. The type of activities being conducted at each Tier 2 facility will govern which SOP(s) are to be implemented.

A map that shows locations of County facilities is provided in Attachment A.

Table 1: Tier 1 Facility Summary

Facility Information		Person Responsible for Pollution Prevention		Potential Contaminants								
Name	Address	Name	Title	Sediment	Nutrients[1]	Trash	Metals	Bacteria	Oil, Grease, Fuel	Organics	Pesticides/Herbicides	Hazardous Waste[2]
MetraPark – Arena	308 6th Ave N	Jeff Seward	Operations Director	X		X			X			X
MetraPark – Buildings	308 6th Ave N	Jeff Seward	Operations Director	X	X	X		X	X	X	X	X
MetraPark – Parking Lots	308 6th Ave N	Jeff Seward	Operations Director	X		X			X			
County Building/Offices	316 N. 26th St.	Greg Erpenbach	Facilities Superintendent	X		X			X			X
County Shops[3]	3321 King Ave. E.	Clay Moore	Assistant Road & Bridge Director	X	X	X			X	X	X	X
County Weed District[3]	3319 King Ave. E.	Clay Moore	Assistant Road & Bridge Director	X	X	X			X	X	X	X
County Courthouse	217 N. 27th St.	Greg Erpenbach	Facilities Superintendent	X		X			X			X
County Detention Facility	3165 King Ave. E	Greg Erpenbach	Facilities Superintendent	X		X			X		X	X
Two Moon Park	834 Two Moon Park Rd.	Cal Cumin	Parks Director	X	X	X			X	X	X	
Zimmerman Public Park	3314 MT-3	Cal Cumin	Parks Director	X	X	X			X	X	X	

[1] Nutrients in runoff are typically nitrogen and phosphorus pollutants from fertilizers, pet, and yard waste

[2] Hazardous waste is typically any biological, chemical, or physical material that is potentially harmful to human health or the environment. Examples include antifreeze, householder cleaners, and paints.

[3] County Shops and County Weed District are located on the same property.

Table 2. Tier 2 Facility Summary

Facility Information		Person Responsible for Pollution Prevention		Potential Contaminants								
Facility Type	Department	Name	Title	Sediment	Nutrients	Trash	Metals	Bacteria	Oil, Grease, Fuel	Organics	Pesticides/Herbicides	Hazardous Waste
Community Facilities	Facilities	Greg Erpenbach	Facilities Superintendent	X		X			X			
Parks	County Parks Board	Cal Cumin	Parks Director	X	X	X			X	X	X	
Parking Lots	Public Works	Clay Moore	Assistant Road & Bridge Director	X		X	X		X			
County Roads	Public Works	Clay Moore	Assistant Road & Bridge Director	X		X	X	X	X	X		
Stormwater BMPs[1]	Public Works	Mike Black	Senior Engineer	X	X	X			X		X	

[1] See MCM 5: Post-Construction Site Storm Water Management in New and Redevelopment for post-construction stormwater BMP operations and maintenance procedures. SOPs have not been developed for these facilities.

1.2 Activity Inventory

Table 3 identifies County activities that have the potential to release contaminants to the MS4. Similar activities have been grouped into eight categories. The County will develop one SOP for each category to describe procedures to be used to minimize the potential discharge of contaminants associated with these activities.

Table 3. County Activities that have the Potential to Release Contaminants to the MS4

SOP Category	Activity	Potential Pollutants								
		Sediment	Nutrients	Trash	Metals	Bacteria	Oil, Grease, Fuel	Organics	Pesticides/Herbicides	Hazardous Waste
Landscaping	Mowing						X	X		
	Tree Trimming						X	X		
	Fertilizer/pesticide/herbicide application		X						X	
	Planting	X								
	Equipment fueling						X			
Street Maintenance and Repairs	Street sweeping	X	X	X	X	X	X		X	
	Chip sealing	X					X			
	Asphalt and concrete cutting	X					X			
	Asphalt and concrete resurfacing	X					X			
	Curb and crosswalk painting						X			X
	Pothole repair						X			
Winter Street Operations	Street sanding	X					X			
	Snow removal and storage	X		X			X			
	Street deicing						X			X
Parking Lot Maintenance	Sweeping/cleaning	X	X	X	X	X	X		X	
	Parking lot striping						X			X
	Snow removal and storage	X		X			X			
Solid Waste Management	Dumpster and receptacle management		X	X	X	X	X	X		X
Building Maintenance	Sidewalk snow removal	X		X			X			
	Dumpster and receptacle management		X	X	X	X	X	X		X
Shop & Fleet Services	Vehicle fueling						X	X		
	Vehicle and equipment storage						X			X
	Vehicle washing	X					X			
	Materials storage						X			X
	Vehicle maintenance						X			X
Spills	Spill response and containment			X		X	X	X	X	X

Table 4 identifies applicable SOPs to be implemented for Tier 2 facilities. A comprehensive list of Tier 2 facilities is provided in Table A-1 (Attachment A).

Table 4. SOPs for Tier 2 Facilities

Facility Information		Applicable SOPs							
Tier 2 Facility Type	**Department Responsible for Pollution Prevention**	Landscaping	Street Maintenance and Repairs	Winter Street Operations	Parking Lot Maintenance	Solid Waste Management	Building Maintenance	Shop and Fleet Services	Spills
Community Facilities	Facilities	X			X	X	X		X
Parks	County Parks Board	X			X	X			
Parking Lots	Public Works				X				X
County Roads	Public Works		X	X					X
Stormwater BMPs[1]	Public Works								

[1] SOPs have not been developed for these facilities. See Note 1 in Table 2.

1.3 SOP Development

The County has two categories of storm water pollution prevention SOPs: facility-specific and activity-based. The list of SOPs being developed is provided in Table 5 and completed SOPs are provided in Attachment B.

Table 5. Storm Water Pollution Prevention SOPs

	SOP Name	SOP Development Schedule
Facility-Based SOPs (Tier 1 Facilities)	MetraPark – Arena	2020
	MetraPark – Buildings	2020
	MetraPark – Parking Lots	2019
	County Building/Offices	2021
	County Shops[1]	2019
	County Weed District[1]	2019
	County Courthouse	2021
	County Detention Facility	2021
	Two Moon Park	2020
	Zimmerman Public Park	2020
Activity-Based SOPs (Tier 2 Facilities)	Landscaping	2019
	Street Maintenance and Repairs	2020
	Winter Street Operations	2020
	Parking Lot Maintenance	2020
	Solid Waste Management	2021
	Building Maintenance	2021
	Shop and Fleet Services	2019
	Spills	2021

[1] County Shops and County Weed District share the same property. A joint facility-based SOP has been developed for these facilities.

1.4 SOP Training

Persons responsible for pollution prevention at County facilities will conduct or oversee annual storm water pollution prevention training for all permittee staff directly involved with implementing SOPs. For newly created SOPs, trainings will be conducted during the next permit year after development of the SOP. The SOP training schedule is provided in Table 6.

Table 6. Storm Water Pollution Prevention SOP Training Schedule

	SOP Name	SOP Training Schedule
Facility-Based SOPs (Tier 1 Facilities)	MetraPark – Arena	2021
	MetraPark – Buildings	2021
	MetraPark – Parking Lots	2020
	County Building/Offices	2022
	County Shops[1]	2020
	County Weed District[1]	2020
	County Courthouse	2022
	County Detention Facility	2022
	Two Moon Park	2021
	Zimmerman Public Park	2021
Activity-Based SOPs (Tier 2 Facilities)	Landscaping	2020
	Street Maintenance and Repairs	2021
	Winter Street Operations	2021
	Parking Lot Maintenance	2021
	Solid Waste Management	2022
	Building Maintenance	2022
	Shop and Fleet Services	2020
	Spills	2022

[1] County Shops and County Weed District share the same property. A joint facility-based SOP training session will occur for these facilities.

Attachment A. Tier 2 Facility List and Map

Table A-1. Tier 2 County Facilities

Department	General Information		Classifications		Applicable Activities								Notes
	Facility Name	Address	Within MS4 Boundary	Not Within MS4 Boundary	Landscaping	Street Maintenance & Repairs	Winter Street Operations	Parking Lot Maintenance	Solid Waste Management	Building Maintenance	Shop & Fleet Services	Spills	
Community Facilities	County Sherrif's Office #1	2323 2nd Ave N.		X	X			X	X	X			
	County Sherrif's Office #2	2550 3rd Ave N.		X	X			X	X	X			
	Youth Detention Center	410 S. 26th St.		X	X			X	X	X			Facilities located on same property
	Youth Services Center #1	407 S. 27th St.		X	X			X	X	X			
	Youth Services Center #2	413 S. 27th St.		X	X			X	X	X			
	Neptune Tumbleweed House	1019 Neptune Blvd.		X	X				X	X			
	Museum - Billings Logan Airport	1901 Terminal Circle		X	X			X	X	X			
	Western Heritage Center	2822 Montana Ave		X	X			X	X	X			
	County Storage Building #1	219 N. 26th St.		X	X			X	X	X			
	County Storage Building #2	3150 King Ave. E.	X		X			X	X	X			
	Riverside Cemetery	1316 Bitterroot Dr.	X		X			X	X				
County Parks Board	Bel Aire Park	628 Enfield St.	X		X			X	X				
	Brookdale Park	330 Woodland Rd.	X		X			X	X				
	Cloverleaf Meadows Park	859 46th St. W	X		X			X	X				
	Clydesdale Park	Wells Pl.	X		X			X	X				
	Eagle Cliff Meadows PVT Park	Eagle Cliff Meadows Road	X		X			X	X				
	Earl Guss Park	148 Bench Blvd.	X		X			X	X				
	Emerald Eagle Estates Sub Park	Noblewood Dr.	X		X			X	X				
	Farnum Park	Krumheuer Dr.	X		X			X	X				
	Harris Park	639 Tanglewood Dr.	X		X			X	X				
	Hillner Park	2464 Sunrise St.	X		X			X	X				
	Independence Park	3840 Roundup Rd.	X		X			X	X				
	Kiwanis Trail	831 Yellowstone River Rd.	X		X			X	X				
	Lockwood Park	2323 Old Hardin Rd.	X		X			X	X				
	Lockwood School Park Land	Stonehaven Trail	X		X			X	X				
	Madsen Park	1890 Prescott Dr.	X		X			X	X				
	McKenzie Park	Hunters Point	X		X			X	X				
	Oxbow Park	Broken Yoke Dr. & Clint Rd.	X		X			X	X				
	Quanta Park	Quanta Ln. & Willow Dr.	X		X			X	X				
	Quarter Horse Park	1800 Oklahoma Star Trail	X		X			X	X				
	Sannon Park	984 Noblewood Dr.	X		X			X	X				
	Shawnee Park	3400 Wasco Ave	X		X			X	X				
	Sierra Estates Sub 1st Park	Sierra Estates Subdivision	X		X			X	X				
	Sierra Estates Sub 2nd Park	Sierra Estates Subdivision	X		X			X	X				
	Sierra Estates Sub 3rd Park	Sierra Estates Subdivision	X		X			X	X				
	Sun Valley Sub 1st Park	Valley Heights Rd.	X		X			X	X				
	Twin Coulee Park	625 Lacey Rd.	X		X			X	X				
	Wells Garden Park	711 Lavender St.	X		X			X	X				
	Wilson Park	Riverside Rd.	X		X			X	X				
	Zimmerman Sub 4th Park	3314 MT-3	X		X			X	X				
	Lillis Park	*898 Parkview Dr.*											County property, City operated
	Burlington Park	*1123 21st St. W*											County property, City operated
	Rose Park	*1707 21st St. W*											County property, City operated
	Boulder Park	*2202 32nd St. W*											County property, City operated
	Castle Rock Park East	*380 Bohl Ave*											County property, City operated
	Walsh Park	*962 Ashley Ct. S*											County property, City operated
	Edgerton Park	*953 Dixon St.*											County property, City operated
	Riverfront Park	*7277-7337 State Highway 416*											In County MS4, City operated
	Coulson Park	*Charlene St.*											In County MS4, City operated
	Primrose Park	*1200 Reece Dr.*											County property, City operated

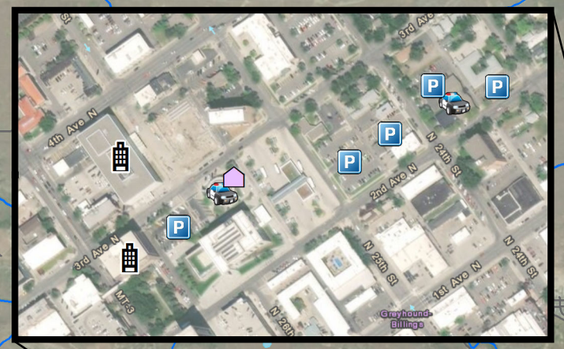
Department	General Information		Classifications		Applicable Activities								Notes
	Facility Name	Address	Within MS4 Boundary	Not Within MS4 Boundary	Landscaping	Street Maintenance & Repairs	Winter Street Operations	Parking Lot Maintenance	Solid Waste Management	Building Maintenance	Shop & Fleet Services	Spills	
Public Works	216 N 26th St Parking	216 N 26th St.	X		X			X	X			X	County property
	210 N 24th St Parking	210 N 24th St.	X		X			X	X			X	
	220 N 25th St Parking	220 N 25th	X		X			X	X			X	
	2311 2nd Ave N Parking	2311 2nd Ave N	X		X			X	X			X	
	217 N 24th St Parking	217 N 24th ST.	X		X			X	X			X	
	3150 King Ave E.	3150 King Ave E.	X		X			X	X			X	
	MetraPark Overflow 1			X	X			X	X			X	
	MetraPark Overflow 2			X	X			X	X			X	

LEGEND

- COMMUNITY FACILITY
- MAINTENANCE FACILITY
- SHERIFF'S FACILITY
- STORAGE BUILDING
- PARKING LOT
- PARK
- CEMETERY
- CREEK/STREAM
- RIVER/LAKE
- ROAD
- RAILROAD
- YELLOWSTONE COUNTY MS4 BOUNDARY

N

0 Miles 1



Sevenmile Creek
Five Mile Creek
Alkali Creek
Cove Creek
Dry Creek
Hogans Slough
Canyon Creek
Yellowstone River

YELLOWSTONE COUNTY
FACILITY INVENTORY MAP

Attachment B. Stormwater Pollution Prevention SOPs

Storm Water Pollution Prevention Standard Operating Procedures

for:

MetraPark - Parking Facilities

308 6th Avenue North
Billings, MT, 59101
(406) 256-2400

SOP Preparation Date: January 2020

Yellowstone County Public Works Department

Storm Water Management Program

SECTION 1.0 Facility Description and Contact Information

1.1 Facility Information

Facility Information

Name of Facility: MetraPark – Parking Facilities
Street: 308 6th Avenue North
City: Billings State: MT ZIP Code: 59101

Discharge Information

Drainage Basin: City of Billings – Yellowstone River and Alkali Creek (overlap)
Drainage Basin Receiving Waterbody: Alkali Creek and Yellowstone River
Does this facility discharge storm water *directly* into any segment of a receiving waterbody?[1]
☒Yes ☐No

Permit Information

Is this facility permitted by an MPDES Permit (in addition to MS4)? ☐Yes ☒No
If Yes, identify other discharge permits: _____

1.2 Contact Information/Responsible Parties

Metra Park Director of Operations:

Name: Jeff Seward
Telephone number: (406) 256-2407
Email address: jseward@metrapark.com

County Storm Water Management Program Coordinator:

Storm Water Management Contact Name (Primary): Mike Black
Telephone number: (406) 256-2735
Email address: mblack@co.yellowstone.mt.gov

1.3 Storm Water Pollution Prevention Team

The storm water pollution prevention team is responsible for implementing and maintaining storm water control measures/BMPs, and taking corrective actions when required.

Name	Position/Title	Individual Responsibilities
Jeff Seward	Director of Operations	Site Storm Water Lead
Randy Pardis	Maintenance Superintendent	Parking Lot Storm Water Co-Lead
John Carney	Maintenance Foreman	Parking Lot Storm Water Co-Lead

[1] For purposes of this document, direct discharge refers to site runoff discharging directly into a stream or other receiving waterbody immediately upon leaving the bounds of the site or facility.

1.4 Site Description

The MetraPark complex is located at 308 6th Avenue North and consists of multiple facilities and event venues. The site has a total of 8 parking facilities that function as administration parking lots, primary parking lots, overflow parking lots, recreational vehicle (RV) parking lots, and equipment loading bays. The Operations Division at MetraPark is responsible for operation and maintenance (O&M) of these parking facilities. O&M services include sweeping, plowing, sanding, snow removal, pavement and curb markings, and asphalt/concrete projects. A site plan is provided in Figure 1.

1.5 Purpose and Limitations

This standard operating procedure (SOP) document identifies potential storm water pollutants that could be discharged from the MetraPark parking facilities and storm water pollution best management practices (BMPs) to be installed, implemented, and maintained to minimize the discharge of pollutants from storm water runoff. The potential pollutants and BMPs identified in this document only address management of storm water associated with parking facility activities. Management of potential pollutants covered under separate permits or other facilities at MetraPark are not addressed in this document. Note that MetraPark was initiating a project to update the parking facilities when this document was developed. This document will be updated to reflect any changes made to the parking facilities upon completion of the project.

This document is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper and effective containment of pollutants.

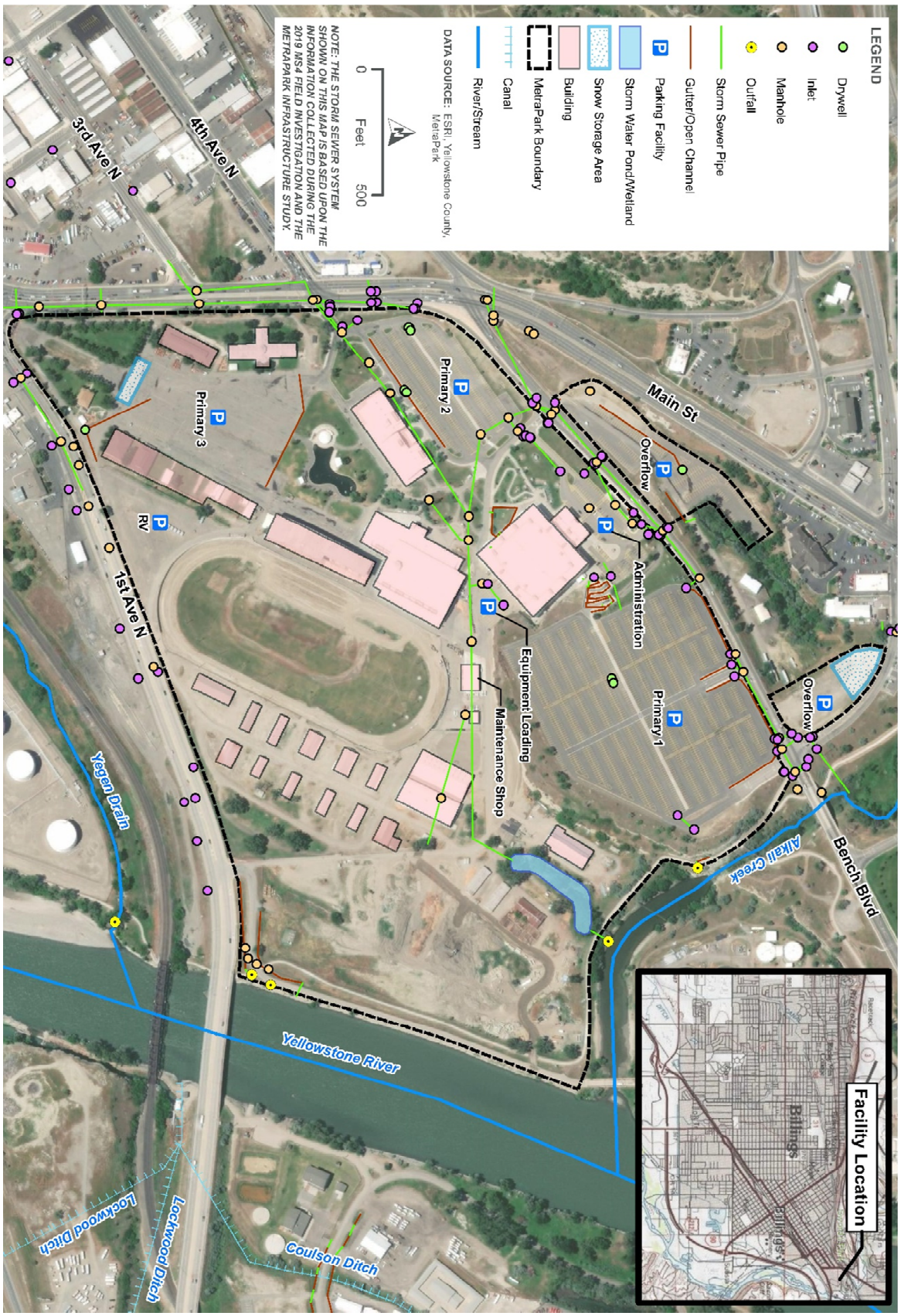


Figure 1. MetraPark – Parking Facility Site Plan

SECTION 2.0 Potential Storm Water Pollutant Sources

This section describes potential storm water pollutant sources associated with the parking facilities at MetraPark.

2.1 Potential Storm Water Pollutants Associated with Facility Activities

The parking facilities at MetraPark serve as the primary location for the general public to park during various events. General activities that occur within the parking facilities include landscaping, street maintenance, winter street operations, parking lot maintenance, and storm sewer maintenance. A list of potential pollutants associated with these activities is provided in Table 1. Measures to be taken to reduce the potential for discharge of pollutants to the storm sewer system are identified in Section 3.2.2.

Table 1. Parking Facility Activities and Potential Storm Water Pollutants

Activity	Potential Pollutants								
	Sediment	Nutrients	Trash	Metals	Bacteria	Oil, Grease, Fuel	Organics	Pesticides/Herbicides	Hazardous Waste[1]
Landscaping	X	X				X	X	X	
Street Maintenance and Repairs	X	X	X	X	X	X		X	X
Winter Street Operations	X		X			X			X
Parking Lot Maintenance	X	X	X	X	X	X		X	X
Catch Basin Cleaning	X	X	X	X	X	X	X	X	
Solid Waste Management		X	X	X	X	X	X		X

[1] Hazardous waste is typically any material that is potentially harmful to human health or the environment. Examples include antifreeze, household cleaners, and paints.

2.2 Spills and Leaks

Inadvertent spills and leaks could occur in parking facilities during various events such as rodeos, concerts, the Montana Fair, and trade shows. Table 2 provides a list of locations where spills and leaks could occur during these events and respective storm drain system discharge points. Spill response protocol is described in Section 3.2.3.

Table 2. Areas Where Potential Spills/Leaks Could Occur

Location	Discharge Point
Equipment Loading Parking Facility	Sheet flow to inlets, then to storm water pond
Primary 3 Parking Facility	Sheet flow to valley gutter, then to inlet/drywell
RV Parking Facility	Sheet flow to valley gutter, then to inlet/drywell

SECTION 3.0 Storm Water Control Measures

This section describes the storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants from storm water runoff at the facility.

3.1 Structural BMPs

3.1.1 Storm Water Drainage System

The MetraPark complex overlaps between the City of Billings – Yellowstone River watershed and the Alkali Creek watershed. The drainage system within the parking facilities is composed of concrete valley gutters, drywells, inlets/catch basins, manholes, storm sewer pipe, and a storm water pond:

- Natural and man-made valley gutters convey runoff from four parking facilities to drywells.
- Inlets/catch basins capture runoff from multiple parking facilities, which is then conveyed through storm sewer piping to the storm water pond.
- The storm water pond is located on the eastern side of the MetraPark complex and discharges treated runoff directly into Alkali Creek.
- Primary snow storage areas are located within two parking facilities.

The storm water drainage system features associated with the parking facilities are shown on the site plan in Figure 1.

3.1.2 Permanent Storm Water Management BMPs

BMP Locations
Storm water runoff quality and quantity from the parking facilities is controlled by the storm water pond and drywells. The pond consists of a BioHaven Floating Island which serves as a treatment wetland to help remove storm water pollutants and improve water quality.

BMP Inspection and Maintenance
The maintenance superintendent and maintenance foreman are responsible for inspection and maintenance of the site's storm water BMPs. Inspection and maintenance procedures include the following:

- Inspect valley gutters and drywells on an annual basis and after public events for sediment, trash, and structural damage. Remove sediment and trash from valley gutters and drywell grates to prevent clogging.
- Inspect inlets/catch basins on an annual basis and after public events for sediment, trash, and structural damage. Remove sediment and trash from the inlet/catch basin grates to prevent clogging and contact the County Storm Water Management Program Coordinator to coordinate the removal of excessive sediment.
- Empty and maintain all waste receptacles immediately following public events to prevent trash from entering the storm water drainage system.
- Inspect storm sewer piping on an annual basis for sediment, trash, and structural damage. A video inspection of the storm sewer piping may be necessary when drainage appears to be obstructed.
- Inspect the pond and outlet structure on a semi-annual basis and following significant rain events. Document any structural damage to the pond outlet structure and notify the County Storm Water Management Program Coordinator to coordinate rehabilitation activities. Remove obvious trash and debris from the pond, storm sewer outlets, and the pond outlet structure and contact the County

Storm Water Management Program Coordinator to coordinate the removal of excessive sediment and overgrown vegetation.

- Inspect the BioHaven Floating Island on an annual basis for vegetation growth and structural damage. Notify the County Storm Water Management Program Coordinator to coordinate the removal of dead vegetation, excessive vegetation, and to rehab any structural damages.

3.1.3 Snow Storage Areas

Primary snow storage areas are located within two parking areas.

- Inspect snow storage areas for trash, adequate drainage, and soil erosion. Remove obvious trash and obstructions that prevent adequate drainage. If necessary, rehabilitate and seed eroded areas and install temporary BMPs (i.e. straw waddles, silt fence, etc.) until vegetation is established.
- Inspect snow storage areas in the spring for excessive sediment accumulation. Remove and dispose of excessive sediment to prevent it from entering the storm water drainage system.

3.2 Non-Structural BMPs

3.2.1 Employee Training

Maintenance staff in the Operations Division shall receive annual training on updates to the MetraPark storm water SOPs. New hires are to be trained on the SOPs within 90 days of their hire date. Training should be conducted by the maintenance superintendent or maintenance foreman.

3.2.2 Good Housekeeping

Good housekeeping procedures to be implemented by maintenance staff are listed in Table 3.

Table 3. Parking Facility Storm Water Management Good Housekeeping Procedures

Activity	Responsible Person/Position	BMP to Reduce Potential for Pollution
Landscaping	Tommy Harrell	Follow Landscaping SOP
Street Maintenance and Repairs	Tim Miller	Follow Street Maintenance and Repairs SOP
Winter Street Operations	Randy Pardis	Follow Winter Street Operations SOP
Parking Lot Maintenance	Randy Pardis	Follow Parking Lot Maintenance SOP
Catch basin cleaning	Randy Pardis	
Solid Waste Management	Jeff Seward	Follow Solid Waste Management SOP

3.2.3 Spill Response

Spill response and cleanup is addressed by employee and contractor training, discussed in Section 3.2.1. MetraPark maintenance personnel are responsible for coordinating with contractors or vendors to verify that appropriate spill kits are kept onsite during events or site maintenance. Spill response procedures are provided below.

Spill Kit

Site spill kits to be used by maintenance personnel are located in the maintenance shop. Spill kits for maintenance vehicles are currently being evaluated. Contractors and vendors are responsible for providing individual spill kits during events or site maintenance. At a minimum, spill kits should contain the following items:

- Absorbent Pads

- Bags of Floor Dry/Sand
- Booms
- Disposal Bags
- Safety Goggles
- Rubber Gloves

Minor Spill Response Procedure

A minor spill is defined as one that poses no significant threat to human health or the environment. These spills generally involve less than 5 gallons and can usually be cleaned up by maintenance personnel. Other characteristics of a minor spill include:

- The spilled material is easily stopped or controlled at the time of the spill
- The spill is localized
- The spilled material is not likely to reach surface water or groundwater
- There is little danger to human health
- There is little danger of explosion

Use the following procedures in response to a minor spill:

1. Immediately notify the maintenance foreman and superintendent of the spill.
2. If necessary, physically contain the spill to prevent further migration from the parking facility.
    a. Stop or reduce continued release by ceasing activity.
    b. Block or slow the migration of spilled material.
    c. Close or plug leaks when possible.
2. Using proper personal protective equipment, obtain and use supplies from the spill kit for containment and absorption.
3. In consultation with the maintenance foreman and superintendent, clean up small spills that can be safely and effectively cleaned up by on-site personnel or hire a spill cleanup contractor.
4. Dispose of all contaminated products in accordance with applicable federal, state and local regulations.
5. Document the spill material, location, size, and date.

Major Spill Response Procedure

A major spill is defined as one involving a spill that cannot be safely and or adequately controlled or cleaned up by on-site personnel. Characteristics of a major spill include:

- The spill is large enough to spread beyond the immediate area
- The spill material entered surface water or ground water (regardless of the size)
- The spill requires special training and equipment to cleanup
- The spill material is a threat to human health
- There is a danger of fire or explosion

Use the following procedures in response to a major spill:

1. All workers shall immediately evacuate the spill site to a safe distance away from the spill.
2. Notify the maintenance foreman, maintenance superintendent, and the director of operations of the spill and details regarding the spill.
3. If there is not an immediate health or safety danger and if actions can be implemented safely, a trained employee shall conduct obvious and immediately implementable containment measures in the following sequence:
    a. Stop or reduce continued release by ceasing activity, closing valves or flipping switches.
    b. Block or slow the migration of spilled material.

   c. Close or plug drains when possible.
4. The director of operations will contact the Fire Department to notify the Hazardous Response Team.
5. The director of operations will coordinate cleanup with the Hazardous Response Team.
6. The director of operations will notify the Storm Water Program Coordinator.
7. Document the spill material, location, size, and date.
8. The Storm Water Program Coordinator will report any spills that impact receiving waterbodies to the Montana DEQ Water Protection Bureau within 24-hours of the incident.

Attachments: Activity SOPs

Landscaping SOP
Street Maintenance and Repairs SOP *(To Be Developed)*
Winter Street Operations SOP *(To Be Developed)*
Parking Lot Maintenance SOP *(To Be Developed)*
Solid Waste Management SOP *(To Be Developed)*

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Landscaping	SOP NUMBER: 01 ISSUE DATE: 12/2019	

ACTIVITIES:	TARGET POLLUTANTS:
Mowing **Tree Trimming** **Fertilizer/Pesticide/Herbicide Application** **Planting** **Equipment Fueling**	Sediment Nutrients Oil & Grease Organics Pesticides/Herbicides

GENERAL

THIS SOP IS NOT EXPECTED TO COVER ALL NECESSARY PROCEDURE ACTIONS. OPERATORS ARE ALLOWED TO ADAPT SOPS TO UNIQUE SITE CONDITIONS IN GOOD JUDGMENT WHEN IT IS NECESSARY FOR SAFETY AND THE PROPER AND EFFECTIVE CONTAINMENT OF POLLUTANTS.

DESCRIPTION OF ACTIVITIES AND POLLUTANT SOURCE

Landscaping activities that have the potential to discharge pollutants to storm water runoff and surface waters include mowing, tree trimming, fertilizer/pesticide/herbicide application, planting, and equipment fueling. These activities occur at most County owned buildings and County parks.

APPLICABILITY

The procedures outlined in this SOP shall be implemented by all employees conducting landscaping activities at County owned facilities.

BEST MANAGEMENT PRACTICES (TO BE IMPLEMENTED FOR ALL LANDSCAPING ACTIVITIES)

- Locate all storm drain collection structures and inlets prior to starting work.
- Use temporary catch basin protection when necessary.
- Inspect equipment for gas, oil, and other fluid leaks prior to use.
- Promptly clean up spills in accordance with the spill response and containment SOP.
- Collect and dispose of all trash in the work area.
- Conduct all equipment cleaning and maintenance at the County Shops.

THE FOLLOWING ACTIVITY PROCEDURES SHOULD BE FOLLOWED FOR EACH LISTED ACTIVITY

MOWING

County staff are responsible for maintaining grassy areas at County owned buildings and County parks. Mowing includes the operation of mowers, trimmers, edgers, and blowers to maintain aesthetics of County managed grassy areas. A variety of pollutants can be introduced to the storm water system and nearby surface waters while mowing. Implement the following procedures to minimize the potential for storm water pollution during the mowing process:

- Adjust mower height to match the area's intended use and minimize clippings.
- Avoid excessive soil and vegetation damage by varying mowing patterns.
- When bagging clippings ensure appropriate collection, transportation, and disposal of all clippings.
- Sweep or blow clippings from sidewalks and streets to grass areas when work is complete.
- Dispose of clippings at the County Shop stockpiles or the Billings Landfill.

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Landscaping	SOP NUMBER: 01 ISSUE DATE: 12/2019	

TREE TRIMMING

County Staff perform routine care for trees and shrubs at County owned buildings and County parks. Tree trimming includes the operation of trimmers, chippers, and blowers to maintain aesthetics of County managed trees and shrubs. Oil, grease, fuel, and organics can be introduced to the storm water system and nearby surface waters while trimming. Implement the following procedures to minimize potential for pollution during the trimming process:

- Collect all trimmings and debris in the area when work is complete.
- Sweep or blow chips from pavement(s) into soil areas.
- Dispose of trimmings and debris at the County Shop stockpiles or the Billings Landfill.

FERTILIZER/PESTICIDE/HERBICIDE APPLICATION

Properly trained and certified persons perform routine care for grassy areas at County owned buildings and County parks. Fertilizer, pesticide, and herbicide application includes the operation of sprayers and spreaders to maintain health of County managed grassy and vegetated areas. A variety of nutrients and chemicals can be introduced to the storm water system and nearby surface waters during treatment. Implement the following procedures to minimize potential for pollution in the fertilizer/pesticide/herbicide application process:

- Read and review all product information prior to use. This information includes but is not limited to, safety data sheets, product instructions, and federal and state regulations governing use.
- Avoid application within a minimum of 20 feet of storm drainage facilities and surface waters and 100 feet of any well head.
- Calibrate application equipment to avoid excessive material application.
- Check the weather forecast. Wind and or rain conditions (current and future) may not be acceptable for application. Do not use pesticides if rain is expected within a 24-hour period and only apply when wind speeds are less than 5 mph.
- Mix and prepare all fertilizers, pesticides, and herbicides away from storm drains, waterbodies, and soils, preferably inside a protected area within a watertight secondary container.
- Employ appropriate techniques to minimize off-target application spray drift and over broadcasting are possible pollutants to the storm water system.
- Clean spills immediately and follow product specified procedures.
- Rinse application equipment away from water bodies and storm drains. Do not dispose of chemicals to storm drain, sewer, or ground surface.
- Dispose of excess material following manufacturer's instructions.

PLANTING

Planting includes digging, planting/seeding, and backfilling to maintain aesthetics of County managed land. Sediment and nutrients can be introduced to the storm water system and nearby surface waters during planting if proper procedures are not followed. Implement the following procedures to minimize potential for pollution when planting:

- Prior to digging call Montana 811 by dialing 811 or 800-424-5555 to locate underground facilities.
- While digging place spoils near the hole for ease of backfilling, avoid placing spoils in or near the gutter, a storm drain, or water body.
- Do not add excessive amounts of compost or fertilizer while backfilling.

- Apply seed and cover using pre-determined application method and rate, in accordance with manufacturer's instructions.
- Sweep dirt from surrounding pavement(s) into the planter area.
- Remove extra spoils from the site responsibly, use a tarp if necessary to contain spoils during transport.
- Transport spoils to the County Shops.
- Larger planting projects may require installation of temporary storm water BMPs such as silt fence and biorolls. Contact the County storm water coordinator to discuss pollution prevention for planting projects that are near water bodies and will take more than two days to complete.

EQUIPMENT FUELING

Equipment fueling applies to all gas, diesel, or kerosene vehicles and equipment required for maintenance of County facilities. Harmful chemicals can be introduced to the storm water system and nearby surface waters if spills occur while fueling equipment. Implement the following procedures to minimize pollution during fueling:

- Use the fuel automatic shut off (where applicable) to prevent overfilling, and do not 'top off' the tank.
- Mobile fueling should be minimized, whenever practical transport vehicles and equipment to designated fueling areas.
- When fueling small equipment from portable containers, fuel in an area a minimum of 50 feet away from storm drains and water bodies.
- If a large fuel spill occurs (greater than 1 gallon), contact the County storm water coordinator and your supervisor to determine if specialized sill response procedures are necessary.

Storm Water Pollution Prevention Standard Operating Procedures

for:

County Shop and Weed District

3319 King Ave E
Billings, MT, 59101
(406) 256-2708

SOP Effective Date: December 2019

Yellowstone County Public Works Department

Storm Water Management Program

SECTION 1.0 Facility Description and Contact Information

1.1 Facility Information

Facility Information

Name of Facility: County Shop and Weed District
Street: 3319 King Ave E
City: Billings State: MT ZIP Code: 59101

Discharge Information

Drainage Basin: City of Billings – Yellowstone River
Drainage Basin Receiving Waterbody: Yellowstone River
Does this facility discharge storm water *directly* into any segment of a receiving waterbody?[1]
☐Yes ☒No

Permit Information

Is this facility permitted by an MPDES Permit (in addition to MS4)? ☐Yes ☒No
If Yes, identify other discharge permits: _____

1.2 Contact Information/Responsible Parties

County Shop Superintendent:
Name: Clay Moore
Telephone number: (406) 256-6812
Email address: cmoore@co.yellowstone.mt.gov

County Weed District Superintendent:
Name: Joe Lockwood
Telephone number: (406) 256-2731
Email address: glockwood@co.yellowstone.mt.gov

County Storm Water Management Program Coordinator:
Storm Water Management Contact Name (Primary): Mike Black
Telephone number: (406) 256-2735
Email address: mblack@co.yellowstone.mt.gov

1.3 Storm Water Pollution Prevention Team

The storm water pollution prevention team is responsible for implementing and maintaining storm water control measures/BMPs, and taking corrective actions when required.

Name	Position/Title	Individual Responsibilities
Clay Moore	Assistant Road and Bridge Director	Facility Storm Water Lead
Greg Fisher	County Shop Foreperson	Shop Storm Water Lead
Andy Dean	Road Foreperson	Road Storm Water Lead
Joe Lockwood	County Weed District Superintendent	Weed District Storm Water Lead

[1] For purposes of this document, direct discharge refers to site runoff discharging directly into a stream or other receiving waterbody immediately upon leaving the bounds of the site or facility.

1.4 Site Description

The County Shops and Weed District (CSWD), located at 3319 King Ave E, includes Fleet Maintenance (County Shop), Road and Bridge Division, and the County Weed District. Fleet Maintenance services include preventative maintenance and repairs to the County's fleet of vehicles and equipment, acquisition and disposal of vehicles and equipment, and re-fueling services. Road and Bridge Division services include plowing, sanding, snow removal, asphalt projects, concrete projects, pothole repair, and street maintenance. The County Weed District is primarily responsible for assisting public, private, and other government agencies within Yellowstone County to manage and control existing noxious weeds and to prevent the growth of new invasive species. A site plan of the 10.5 acre facility is provided in Figure 1.

1.5 Purpose and Limitations

This standard operating procedure (SOP) document identifies potential storm water pollutants that could be discharged from the site and storm water pollution best management practices (BMPs) to be installed, implemented, and maintained to minimize the discharge of pollutants from storm water runoff. The potential pollutants and BMPs identified in the document only address management of storm water associated with County activities. Management of potential pollutants covered under separate permits (i.e., storm water discharges associated with industrial activity) are not addressed in this document.

This document is not expected to cover all necessary procedure actions. Operators are allowed to adapt SOPs to unique site conditions in good judgment when it is necessary for safety, and the proper and effective containment of pollutants.

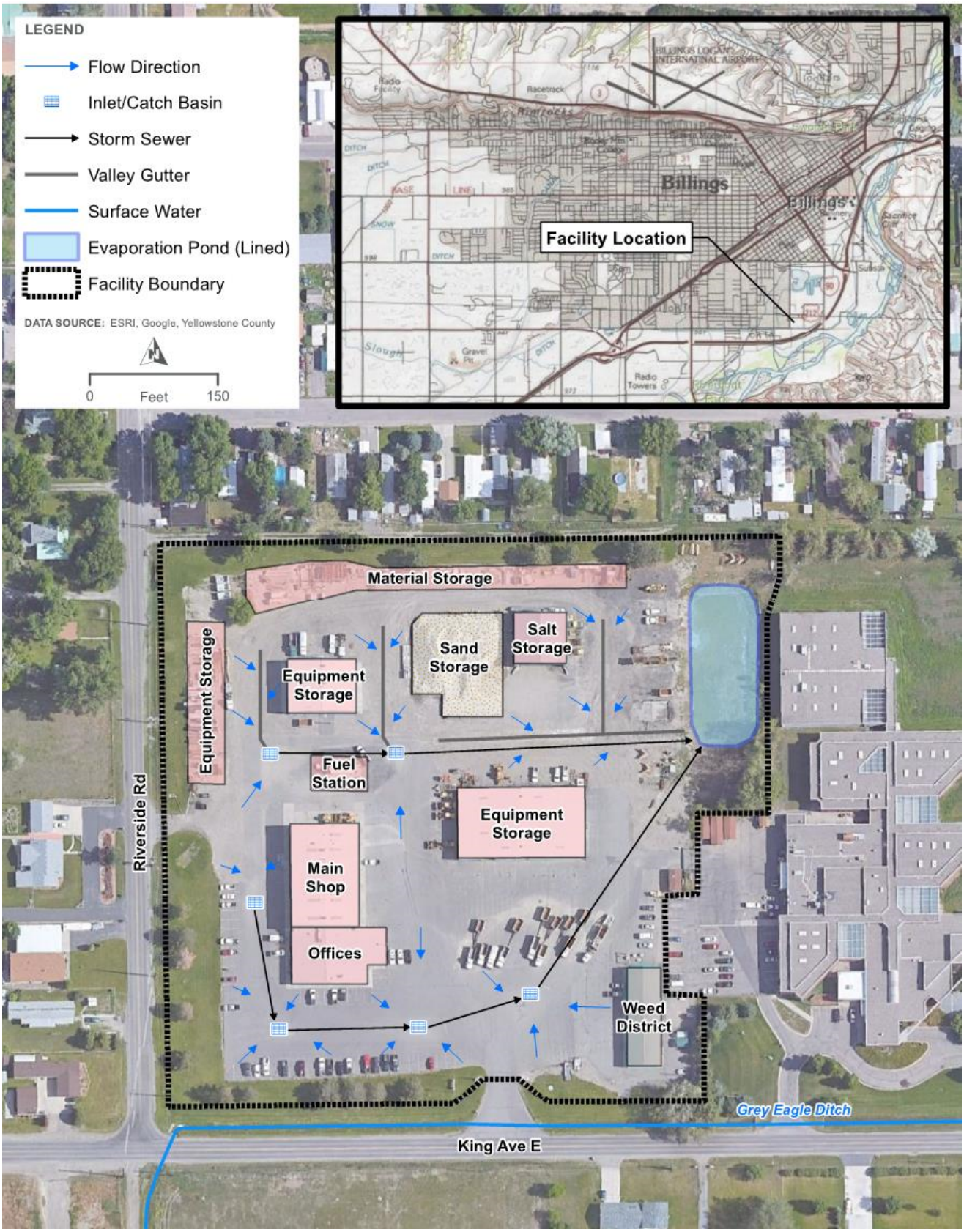


Figure 1. County Shop and Weed District Site Plan

SECTION 2.0 Potential Storm Water Pollutant Sources

This section describes potential storm water pollutant sources associated with the CSWD facility.

2.1 Potential Storm Water Pollutants Associated with Facility Activities

The primary operations at the CSWD facility consist of shop and fleet services, street maintenance and repairs, winter street operations, parking lot maintenance, noxious weed abatement, and recycling of pesticide containers. A list of activities with the potential to discharge pollutants to the storm drainage system associated with this facility is provided in Table 1. Measures to be taken to reduce the potential for discharge of pollutants associated with these activities are identified in Section 3.2.2.

Table 1. County Shop and Weed District Facility Activities and Potential Storm Water Pollutants

Activity	Potential Pollutants								
	Sediment	Nutrients	Trash	Metals	Bacteria	Oil, Grease, Fuel	Organics	Pesticides/Herbicides	Hazardous Waste
Landscaping	X	X				X	X	X	
Container Recycling		X	X				X	X	
Weed Control[1]		X					X	X	
Street Maintenance and Repairs [1]	X		X	X	X	X		X	X
Winter Street Operations [1]	X		X			X			X
Parking Lot Maintenance [1]	X		X	X	X	X		X	X
Catch basin cleaning	X	X	X	X	X	X	X	X	
Excavation and stockpiles (only stockpiles)	X					X			
Building Maintenance	X	X	X	X	X	X	X	X	X
Shop and Fleet Services				X		X	X		X
1. Activity performed off-site.									

2.2 Spills and Leaks

Table 2 provides a list of locations where spills that would discharge contaminants to the storm drain system could occur. Spill response protocol is described in Section 3.2.3.

Table 2. Areas Where Potential Spills/Leaks Could Occur

Location	Discharge Point
Main Shop	Interior bays (oil/water separator)
Equipment Storage	Sheet flow to catch basins, then to evaporation pond
Fuel Station	Sheet flow to catch basins, then to evaporation pond
Weed District Building	Interior bay (floor drains)

SECTION 3.0 Storm Water Control Measures

This section describes the storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants from storm water runoff at the facility.

3.1 Structural BMPs

3.1.1 Storm Water Drainage System

The site is located within the City of Billings-Yellowstone River watershed which eventually discharges to the Yellowstone River. All storm water that is generated at the facility is stored and managed on site. The facility drainage system is composed of natural valley gutters, catch basins, storm sewer piping, and a lined evaporation pond:

- Four natural valley gutters are located on the northern side of the property.
- Six catch basins are located throughout the facility's parking lot.
- Storm sewer piping conveys runoff from the catch basins to the evaporation pond.
- The evaporation pond is located in the northeast corner of the property and it is a lined with a geosynthetic membrane.

The facility's storm water drainage system features are shown on the site plan in Figure 1.

3.1.2 Permanent Storm Water Management BMPs

BMP Locations
Storm water runoff is conveyed to the lined evaporation pond located in the northeast corner of the property. The pond is the main storm water BMP for the facility and manages both runoff quality and quantity.

BMP Inspection and Maintenance
The facility superintendent is responsible to inspect and direct maintenance of the site's storm water BMPs:

- Inspect the natural valley gutters on a semi-annual basis to verify that positive drainage is provided. Re-grade any areas that restrict positive drainage to the catch basins.
- Inspect the catch basins on a monthly basis and following rain events for sediment, debris, and structural damage. Remove obvious trash and debris to prevent clogging and contact the County Storm Water Management Program Coordinator to coordinate the removal of excessive sediment.
- Inspect the pond on a semi-annual basis and following significant rain events. Remove obvious trash and debris from the pond and storm sewer outlets. Contact the County Storm Water Management Program Coordinator to coordinate the removal of excessive sediment and overgrown vegetation.
- Remove excessive sediment deposits, overgrown vegetation, trash, and debris.
- Inspect the pond liner on an annual basis during dry weather (e.g. July to September) for rips, punctures, or tears. Repair damaged areas immediately and notify the storm water management program coordinator.

3.1.3 Chemical and Bulk Fuel Storage

Chemical and bulk fluid is primarily stored in the Main Shop and in the Weed District building. All maintenance fluid used for vehicles and fleet trucks is stored in appropriate containers within the Main Shop along with respective material safety data sheets (MSDS). The Main Shop has a capture system along the outer perimeter of each maintenance bay to contain any chemical spills. This capture system is connected to an oil-water separator located in the Main Shop. A re-fueling station with an above ground fuel storage tank

is located on the northern side of the Main Shop. Small concrete valley gutters surround the fuel storage tank in order to capture and contain any spills. All pesticide and herbicide chemicals are stored in appropriate containers within the interior bay of the Weed District building along with respective MSDS. A floor drain and spill container is located within the interior bay to contain any spills.

3.2 Non-Structural BMPs

3.2.1 Employee Training

Employee training is an important aspect of the facility's daily operation. Shop staff, road crews, and Weed District employees shall all receive annual training on updates to the facility's SOPs. Additionally, new hires are to be trained on the SOPs within 90 days of their hire date. Training should be conducted by one of the storm water leads listed in Section 1.3.

3.2.2 Good Housekeeping

Good housekeeping procedures to be implemented by facility staff are listed in Table 3.

Table 3. Vehicle Maintenance Facility Storm Water Management Good Housekeeping Procedures

Activity	Responsible Person/Position	BMP to Reduce Potential for Pollution
Landscaping	Greg Fisher	Follow Landscaping SOP
Container Recycling	Greg Fisher	Follow Container Recycling SOP
Weed Control	Joe Lockwood	Follow Weed Control SOP
Street Maintenance and Repairs	Clay Moore	Follow Street Maintenance and Repairs SOP
Winter Street Operations	Clay Moore	Follow Winter Street Operations SOP
Parking Lot Maintenance	Clay Moore	Follow Parking Lot Maintenance SOP
Catch basin cleaning	Clay Moore	Follow Utility Maintenance SOP
Excavation and stockpiles (only stockpiles)	Clay Moore	
Building Maintenance	Greg Fisher	Follow Building Maintenance SOP
Shop and Fleet Services	Greg Fisher	Follow Shop and Fleet Services SOP

3.2.3 Spill Response

Spill response and cleanup is addressed by employee training, discussed in Section 3.2.1. Spill response procedures are provided below.

Facility Spill Kit

The facility has multiple spill kits located throughout the maintenance shop that are readily accessible when needed. The spill kits contain the following items:

- Absorbent Pads
- Sand (obtained from stockpile when needed)
- Booms
- Disposal Bags
- Safety Goggles
- Rubber Gloves

Minor Spill Response Procedure

A minor spill is defined as one that poses no significant threat to human health or the environment. These spills generally involve less than 5 gallons and can usually be cleaned up by County personnel. Other characteristics of a minor spill include:

- The spilled material is easily stopped or controlled at the time of the spill
- The spill is localized
- The spilled material is not likely to reach surface water or groundwater
- There is little danger to human health
- There is little danger of explosion

Use the following procedures in response to a minor spill:

1. Immediately notify the direct supervisor about the spill.
2. If necessary, physically contain the spill to prevent further migration from the facility or project site.
    a. Stop or reduce continued release by ceasing activity, closing valves or flipping switches.
    b. Obtain supplies from the spill kit that are intended to be used for containment and absorption.
    c. Using proper personal protective equipment, block or slow the migration of spilled material.
    d. Close or plug drains when possible.
2. In consultation with the direct supervisor, clean up small spills that can be effectively managed by County staff or hire a spill cleanup contractor.
3. Dispose of all contaminated products in accordance with applicable federal, state and local regulations.
4. Document the spill material, location, size, and date.

Major Spill Response Procedure

A major spill is defined as one involving a spill that cannot be safely and or adequately controlled or cleaned up by on-site personnel. Characteristics of a major spill include:

- The spill is large enough to spread beyond the immediate area
- The spill material entered surface water or ground water (regardless of the size)
- The spill requires special training and equipment to cleanup
- The spill material is a threat to human health
- There is a danger of fire or explosion

Use the following procedures in response to a major spill:

1. All workers shall immediately evacuate the spill site to a safe distance away from the spill.
2. Notify the direct supervisor about the spill and provide details regarding the spill.
3. If there is not an immediate health or safety danger and if actions can be implemented safely, a trained employee shall conduct obvious and immediately implementable containment measures in the following sequence:
    a. Stop or reduce continued release by ceasing activity, closing valves or flipping switches.
    b. Block or slow the migration of spilled material.
    c. Close or plug drains when possible.
4. The direct supervisor will contact the Fire Department to notify the Hazardous Response Team.
5. The direct supervisor will coordinate cleanup with the Hazardous Response Team.
6. Document the spill material, location, size, and date.

Attachments: Activity SOPs

Landscaping SOP
Container Recycling SOP *(To Be Developed)*
Weed Control SOP *(To Be Developed)*
Street Maintenance and Repairs SOP *(To Be Developed)*
Winter Street Operations SOP *(To Be Developed)*
Parking Lot Maintenance SOP *(To Be Developed)*
Catch Basin Cleaning SOP *(To Be Developed)*
Excavation and Stockpiles SOP *(To Be Developed)*
Building Maintenance SOP *(To Be Developed)*
Shop and Fleet Services SOP

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Landscaping	SOP NUMBER: 01 ISSUE DATE: 12/2019	

ACTIVITIES:	TARGET POLLUTANTS:
Mowing **Tree Trimming** **Fertilizer/Pesticide/Herbicide Application** **Planting** **Equipment Fueling**	Sediment Nutrients Oil & Grease Organics Pesticides/Herbicides

GENERAL

THIS SOP IS NOT EXPECTED TO COVER ALL NECESSARY PROCEDURE ACTIONS. OPERATORS ARE ALLOWED TO ADAPT SOPS TO UNIQUE SITE CONDITIONS IN GOOD JUDGMENT WHEN IT IS NECESSARY FOR SAFETY AND THE PROPER AND EFFECTIVE CONTAINMENT OF POLLUTANTS.

DESCRIPTION OF ACTIVITIES AND POLLUTANT SOURCE

Landscaping activities that have the potential to discharge pollutants to storm water runoff and surface waters include mowing, tree trimming, fertilizer/pesticide/herbicide application, planting, and equipment fueling. These activities occur at most County owned buildings and County parks.

APPLICABILITY

The procedures outlined in this SOP shall be implemented by all employees conducting landscaping activities at County owned facilities.

BEST MANAGEMENT PRACTICES (TO BE IMPLEMENTED FOR ALL LANDSCAPING ACTIVITIES)

- Locate all storm drain collection structures and inlets prior to starting work.
- Use temporary catch basin protection when necessary.
- Inspect equipment for gas, oil, and other fluid leaks prior to use.
- Promptly clean up spills in accordance with the spill response and containment SOP.
- Collect and dispose of all trash in the work area.
- Conduct all equipment cleaning and maintenance at the County Shops.

THE FOLLOWING ACTIVITY PROCEDURES SHOULD BE FOLLOWED FOR EACH LISTED ACTIVITY

MOWING

County staff are responsible for maintaining grassy areas at County owned buildings and County parks. Mowing includes the operation of mowers, trimmers, edgers, and blowers to maintain aesthetics of County managed grassy areas. A variety of pollutants can be introduced to the storm water system and nearby surface waters while mowing. Implement the following procedures to minimize the potential for storm water pollution during the mowing process:

- Adjust mower height to match the area's intended use and minimize clippings.
- Avoid excessive soil and vegetation damage by varying mowing patterns.
- When bagging clippings ensure appropriate collection, transportation, and disposal of all clippings.
- Sweep or blow clippings from sidewalks and streets to grass areas when work is complete.
- Dispose of clippings at the County Shop stockpiles or the Billings Landfill.

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Landscaping	SOP NUMBER: 01 ISSUE DATE: 12/2019	

TREE TRIMMING

County Staff perform routine care for trees and shrubs at County owned buildings and County parks. Tree trimming includes the operation of trimmers, chippers, and blowers to maintain aesthetics of County managed trees and shrubs. Oil, grease, fuel, and organics can be introduced to the storm water system and nearby surface waters while trimming. Implement the following procedures to minimize potential for pollution during the trimming process:

- Collect all trimmings and debris in the area when work is complete.
- Sweep or blow chips from pavement(s) into soil areas.
- Dispose of trimmings and debris at the County Shop stockpiles or the Billings Landfill.

FERTILIZER/PESTICIDE/HERBICIDE APPLICATION

Properly trained and certified persons perform routine care for grassy areas at County owned buildings and County parks. Fertilizer, pesticide, and herbicide application includes the operation of sprayers and spreaders to maintain health of County managed grassy and vegetated areas. A variety of nutrients and chemicals can be introduced to the storm water system and nearby surface waters during treatment. Implement the following procedures to minimize potential for pollution in the fertilizer/pesticide/herbicide application process:

- Read and review all product information prior to use. This information includes but is not limited to, safety data sheets, product instructions, and federal and state regulations governing use.
- Avoid application within a minimum of 20 feet of storm drainage facilities and surface waters and 100 feet of any well head.
- Calibrate application equipment to avoid excessive material application.
- Check the weather forecast. Wind and or rain conditions (current and future) may not be acceptable for application. Do not use pesticides if rain is expected within a 24-hour period and only apply when wind speeds are less than 5 mph.
- Mix and prepare all fertilizers, pesticides, and herbicides away from storm drains, waterbodies, and soils, preferably inside a protected area within a watertight secondary container.
- Employ appropriate techniques to minimize off-target application spray drift and over broadcasting are possible pollutants to the storm water system.
- Clean spills immediately and follow product specified procedures.
- Rinse application equipment away from water bodies and storm drains. Do not dispose of chemicals to storm drain, sewer, or ground surface.
- Dispose of excess material following manufacturer's instructions.

PLANTING

Planting includes digging, planting/seeding, and backfilling to maintain aesthetics of County managed land. Sediment and nutrients can be introduced to the storm water system and nearby surface waters during planting if proper procedures are not followed. Implement the following procedures to minimize potential for pollution when planting:

- Prior to digging call Montana 811 by dialing 811 or 800-424-5555 to locate underground facilities.
- While digging place spoils near the hole for ease of backfilling, avoid placing spoils in or near the gutter, a storm drain, or water body.
- Do not add excessive amounts of compost or fertilizer while backfilling.

- Apply seed and cover using pre-determined application method and rate, in accordance with manufacturer's instructions.
- Sweep dirt from surrounding pavement(s) into the planter area.
- Remove extra spoils from the site responsibly, use a tarp if necessary to contain spoils during transport.
- Transport spoils to the County Shops.
- Larger planting projects may require installation of temporary storm water BMPs such as silt fence and biorolls. Contact the County storm water coordinator to discuss pollution prevention for planting projects that are near water bodies and will take more than two days to complete.

EQUIPMENT FUELING

Equipment fueling applies to all gas, diesel, or kerosene vehicles and equipment required for maintenance of County facilities. Harmful chemicals can be introduced to the storm water system and nearby surface waters if spills occur while fueling equipment. Implement the following procedures to minimize pollution during fueling:

- Use the fuel automatic shut off (where applicable) to prevent overfilling, and do not 'top off' the tank.
- Mobile fueling should be minimized, whenever practical transport vehicles and equipment to designated fueling areas.
- When fueling small equipment from portable containers, fuel in an area a minimum of 50 feet away from storm drains and water bodies.
- If a large fuel spill occurs (greater than 1 gallon), contact the County storm water coordinator and your supervisor to determine if specialized sill response procedures are necessary.

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Shop and Fleet Services	SOP NUMBER: 02 ISSUE DATE: 12/2019	
ACTIVITIES: **Vehicle Fueling** **Vehicle and Equipment Storage** **Vehicle Washing** **Material Storage** **Vehicle Maintenance**	TARGET POLLUTANTS: Sediment Oil, Grease, Fuel Organics Hazardous Waste	

GENERAL

THIS SOP IS NOT EXPECTED TO COVER ALL NECESSARY PROCEDURE ACTIONS. OPERATORS ARE ALLOWED TO ADAPT SOPS TO UNIQUE SITE CONDITIONS IN GOOD JUDGMENT WHEN IT IS NECESSARY FOR SAFETY AND THE PROPER AND EFFECTIVE CONTAINMENT OF POLLUTANTS.

DESCRIPTION OF ACTIVITIES AND POLLUTANT SOURCE

The shop and fleet service activities that have the potential to discharge pollutants to storm water runoff and surface waters include vehicle fueling, vehicle and equipment storage, vehicle washing, material storage, and vehicle maintenance. Pollutants associated with these activities include sediment, oil, grease, fuel, organics, and hazardous waste.

APPLICABILITY

The procedures outlined in this SOP shall be implemented by all employees conducting shop and fleet services at County owned facilities.

BEST MANAGEMENT PRACTICES (TO BE IMPLEMENTED FOR ALL SHOP AND FLEET SERVICE ACTIVITIES)

- Inspect vehicles and equipment for gas, oil, and other fluid leaks prior to use.
- Promptly clean up spills in accordance with the spill response and containment SOP.
- Collect and dispose of all trash in the work area.
- Keep work and storage areas clean for easy detection of leaks and spills.
- Conduct equipment cleaning and maintenance at the County Shop and Weed District facility.

THE FOLLOWING ACTIVITY PROCEDURES SHOULD BE FOLLOWED FOR EACH LISTED ACTIVITY

VEHICLE FUELING

Vehicle fueling applies to all gas and diesel vehicles used by County facilities staff. Harmful chemicals can be introduced to the storm water system and nearby surface waters if spills occur while fueling. Implement the following procedures to minimize potential pollution during fueling:

- Shut off the vehicle prior to fueling.
- Fuel vehicles at approved locations.
- Inspect fueling location for corrosion, leaks, cracks, scratches, and other physical damage that may lead to spills.
- Follow all posted warnings.
- Use the fuel automatic shut off (where applicable) to prevent overfilling, and do not 'top off' the tank.
- Remain by the fill nozzle while fueling.

- Mobile fueling should be minimized, whenever practical transport vehicles to designated fueling areas.
- If a large fuel spill occurs (greater than 1 gallon), contact the County storm water coordinator and your supervisor to determine if specialized spill response procedures are necessary.

VEHICLE AND EQUIPMENT STORAGE

Vehicles and equipment stored for any period of time have the potential to leak, spill, or release chemicals or hazardous materials into the storm water system and nearby surface waters. Storage occurs at the County Shop and Weed District Facility. Implement the following procedures to minimize potential pollution during vehicle and equipment storage:

- Whenever possible, store vehicles and equipment inside where floor drains are connected to an oil-water separator.
- Vehicles and equipment stored outside shall be in approved locations.
- Monitor stored vehicles and equipment closely for leaks, use a drip pan as needed.
- Drain fluids from leaking or wrecked vehicles as soon as possible. Dispose of fluids properly, as directed by the facility's superintendent.

VEHICLE WASHING

Vehicle washing removes snow, ice, mud, and dirt from the surface of vehicles. Washing occurs at the County Shop and Weed District facility or other approved locations. Pollutants associated with vehicle washing include sediment, oil, grease, and fuel. Implement the following procedures to minimize potential pollution during vehicle washing:

- Wash vehicles in designated areas only, with drainage connecting to the sanitary sewer system or the County Shop and Weed District facilities on-site collection system.
- Avoid using excess water and soap when washing vehicles.
- Never wash vehicles over or near a storm drain that is not within the County Shop and Weed District facility.
- Use hoses with automatic shut off nozzles to minimize water usage.

MATERIAL STORAGE

Material storage applies to automotive products, fertilizers, pesticides, paints, chemicals, and other similar materials. Material storage includes proper handling through unloading, use, storage, and disposal. Indoor and outdoor storage occurs at the County Shop and Weed District facility. Implement the following procedures to minimize potential pollution during material storage:

- Store materials indoors or under cover whenever possible.
- Store materials on elevated surfaces, limiting contact with storm water run-off when possible.
- Provide an adequate storage container for all materials.
- Inspect storage areas and containers regularly for leaks, spills, and proper storage of all materials.
- Properly dispose of materials that are outdated or beyond use.
- Label and store all hazardous materials according to manufacturer instructions.
- Use secondary containment as needed to prevent contact with storm water in the event of a leak.

YELLOWSTONE COUNTY STORM WATER POLLUTION PREVENTION STANDARD OPERATING PROCEDURE CATEGORY: Shop and Fleet Services	SOP NUMBER: 02 ISSUE DATE: 12/2019	

VEHICLE MAINTENANCE

Vehicle maintenance is routine for all County owned vehicles. Preventative maintenance will occur at the County Shops, while emergency repairs may require off-site work. Potential pollutants associated with vehicle maintenance include oil, antifreeze, brake fluid, solvents, batteries, fuels, and cleaners. Implement the following procedures to minimize potential pollution during vehicle maintenance:

- Perform maintenance activities in a designated maintenance bay at the County Shop and Weed District facility whenever possible.
- If outdoor work is required, prevent spilling through use of oil pans or similar devices.
- Use absorbent pads and drip pans when necessary.
- Keep equipment clean and do not allow excessive build-up of oil and grease.
- Perform regular preventative maintenance to minimize occurrence of leaks and major repairs.
- Dispose of used fluids, rags, and absorbent pads in respective disposal containers within the County Shops.
- Follow spill response procedures as outlined in the County Shop and Weed District Facility SOP.

Appendix H. Enforcement Response Plan (ERP)

ENFORCEMENT RESPONSE PLAN FOR STORM WATER MANAGEMENT WITHIN YELLOWSTONE COUNTY, MONTANA

Introduction

In accordance with the General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4) (General Permit), issued by the Montana Department of Environmental Quality (DEQ), Yellowstone County (County) is required to develop and implement an Enforcement Response Plan (ERP) to promote compliance with local storm water regulations and General Permit requirements. Since the County is working to establish regulatory authority and local storm water regulations, the purpose of this ERP is to specify the response and enforcement procedures that are currently available for County personnel to use when addressing storm water related concerns or suspected violations of County storm water requirements. This document addresses the General Permit's ERP requirements for the following Minimum Control Measures (MCM's):

- MCM 3: Illicit Discharge Detection and Elimination (IDDE) (Part II.A.3.d.iv.)
- MCM 4: Construction Site Storm Water Management (Part II.A.4.a.iii.)
- MCM 5: Post-Construction Site Storm Water Management in New and Redevelopment (Part II.A.5.a.iii.)

The enforcement actions and procedures within this plan are generally applicable to each of the three MCMs listed above; however, enforcement actions and procedures which are specific to an individual MCM are addressed within the attachments, listed as follows:

- Attachment A: Illicit Discharge Detection and Elimination
- Attachment B: Construction Site Storm Water Management
- Attachment C: Post-Construction Site Storm Water Management in New and Redevelopment

The procedures within this ERP have been developed with the following objectives in mind:

- Prevent pollutants from entering the County MS4 and causing environmental harm.
- Establish appropriate response and enforcement actions based on the nature and severity of storm water-related concerns.
- Promote consistent and timely use of response and of limited enforcement tools.
- Encourage correction of storm water related concerns in a timely manner.
- Promote compliance with County and storm water requirements through education and compliance assistance first and, if necessary, referral to other regulatory agencies.

Yellowstone County has limited authority to enforce storm water regulations. The current County regulations that address storm water (per the General Permit's requirements) are as follows:

Illicit Discharge Detection and Elimination:	(Under Development)
Construction Site Storm Water management:	Subdivision Regulations, Section 4.7
Post-Construction Site Storm Water Management:	Subdivision Regulations, Section 4.7

Acronyms

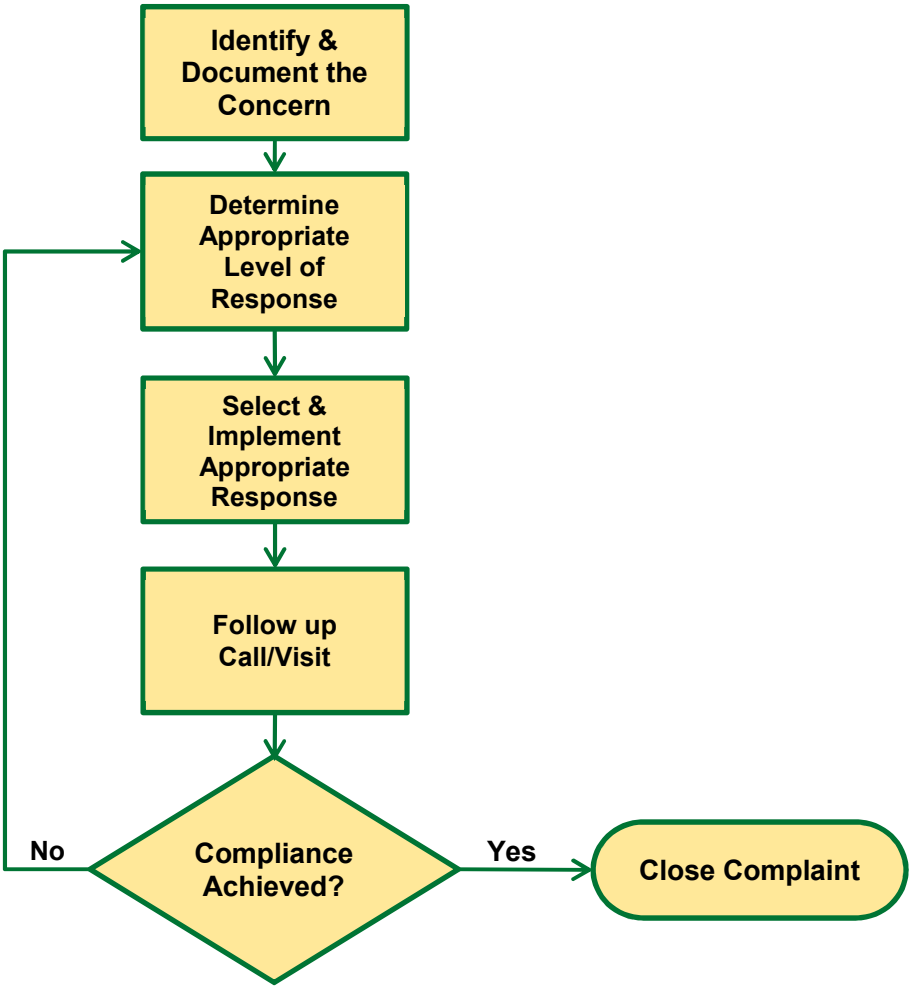
The following acronyms have the following meaning:

DEQ Department of Environmental Quality
ERP Enforcement Response Plan
IDDE Illicit Discharge Detection and Elimination
MCM Minimum Control Measure
MS4 Municipal Separate Storm Sewer System
SWMP Storm Water Management Program

1 Enforcement Response Plan Overview

The enforcement process consists of six basic steps beginning with identification of a storm water-related concern concluding with closing the complaint. The overall process is shown in the flowchart below and is further explained within the following sections.

Enforcement Response Flowchart for the Yellowstone County Storm Water Management Program



2 Identifying and Investigating Storm Water-Related Concerns

The County may become aware of storm water-related concerns or potential violations of County storm water requirements in the following ways:

- County Public Works personnel may identify storm water-related concerns conducting outfall dry-weather screenings or collecting storm water samples.
- The public may file a storm water-related complaint through the County's Public Contact Program.
- Personnel from other County departments may identify and communicate storm water-related concerns while performing their regular job functions.
- Personnel from other regulatory agencies may identify and communicate storm water-related concerns while performing their regular job functions.

This section discusses the County's plan to identify and investigate storm water-related concerns in each of the three regulatory programs required by the General Permit.

2.1 Illicit Discharge Detection and Elimination

Part II.A.3 of the General Permit requires the County to detect and eliminate illicit connections and discharges within the MS4 boundary. The County may observe a suspected illicit connection or discharge during the course of County operations or they may receive a complaint. When an illicit discharge is suspected, the SWMP Team will conduct an investigation in accordance with the County Illicit Discharge Investigation and Corrective Action Plan to identify the source of the suspected illicit connection or discharge. When an illicit discharge is confirmed, the SWMP Team will document the results of the investigation and initiate enforcement action(s) as described in this document and allowed by applicable laws to abate the illicit connection or discharge. This process is summarized in the Figure 1.

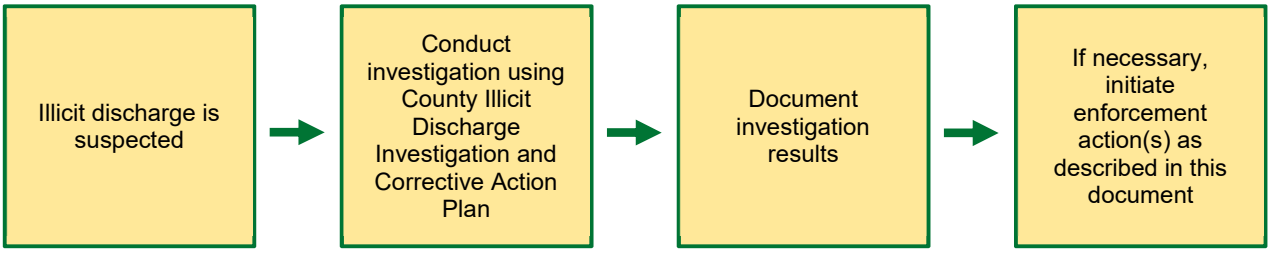


Figure 1. Summary of IDDE Investigation and Confirmation Process

2.2 Construction Site Storm Water

Part II.A.4 of the General Permit requires the County to regulate storm water runoff from construction activities that result in a land disturbance of greater than or equal to one acre and from construction activities disturbing less than one acre if the activities are part of a larger common plan of development or sale that would disturb one acre or more. The County subdivision regulations currently require regulated projects to abide by the Montana DEQ requirements (i.e., Montana DEQ Construction General Permit requirements).

The County may observe a suspected Construction General Permit violation during the course of County operations or they may receive a complaint. When the SWMP team believes an observation

or complaint requires investigation, a site visit and inspection (from public ROW) will be conducted. If necessary, the SWMP Coordinator may contact the property owner to request access to the property to further evaluate the situation. When a violation is confirmed, the SWMP Team will document the results of the investigation and initiate enforcement action(s) as described in this document and allowed by applicable laws to correct the issue. This process is summarized in Figure 2.

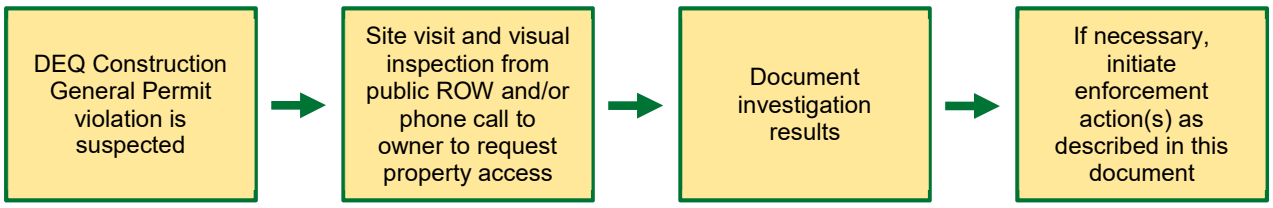


Figure 2. Summary of Construction Site Investigation and Violation Confirmation Process

2.3 Post-Construction Site Storm Water

Part II.A.5 of the General Permit requires the County to address storm water 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 of development or sale. The County subdivision regulations currently require regulated projects to abide by the Montana DEQ requirements (i.e., Montana Circular DEQ 8 requirements).

The County may observe a suspected Circular DEQ 8 violation during the course of County operations or they may receive a complaint. When the SWMP team believes an observation or complaint requires investigation, a site visit and inspection (from public ROW) will be conducted. If necessary, the SWMP Coordinator may contact the property owner to request access to the property to further evaluate the situation. When a violation is confirmed, the SWMP Team will document the results of the investigation and initiate enforcement action(s) as described in this document and allowed by applicable laws to correct the issue. This process is summarized in Figure 3.

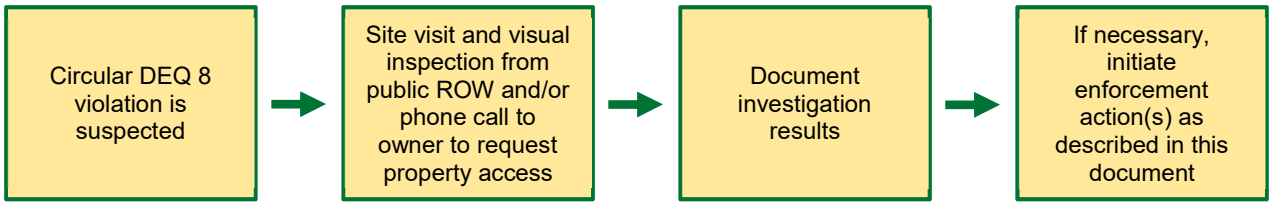


Figure 3. Summary of Post-Construction Site Investigation and Violation Confirmation Process

3 Determining the Appropriate Level of Response

Once a storm water-related concern is identified, the appropriate level of response will be determined and an appropriate response remedy will be selected. The County currently has three levels of responses available, each of which is briefly described below.

3.1 Level 1: No Enforcement Action

There may be situations where County personnel are made aware of storm water-related concerns; however, sufficient evidence does not exist to prove a violation is taking place. An example of such situation may be if a complaint is received stating that a storm water control has not been properly maintained; however, after a brief site inspection and/or verbal discussion, the County staff determines the storm water control is within compliance and no enforcement action is required. In

such situations, the storm water-related concern and response should be documented using the Enforcement Response Documentation Form (Attachment D) so that it can be referenced in the future, if necessary.

3.2 Level 2: Informal Response

The County will pursue compliance to storm water-related concerns through informal methods whenever reasonable. Informal responses include telephone conversations, verbal notices, and meetings, each of which is described in Section 4.1. These methods should be used as the first response option whenever a response is required (except for situations that pose an immediate or significant threat to human health or the environment, in which case a Level 3 response should be initiated). Implementation of informal measures often establishes the documentation necessary to implement formal enforcement actions through other regulatory agencies if informal measures do not result in correction.

3.3 Level 3: Referral to Other Agencies

The County is currently working to establish regulatory authority to enforce local storm water regulations. If an informal response proves insufficient to resolve the situation or the situation poses an immediate or significant threat to human health or the environment, the County will enlist the help of DEQ, emergency personnel, or other regulatory agencies, as described in Section 4.2. Immediate help from DEQ or emergency personnel will be solicited if it suspected that the situation poses a significant threat to human health or the environment.

4 Selecting an Appropriate Response Remedy

Once the severity of the storm water-related concern is determined, County staff will identify and initiate the proper response. The County's selected response remedies are described below. Note that each issue must be documented even if the decision is to take no action. Documentation must explain why such action was/was not taken.

4.1 Informal Responses

4.1.1 Telephone Conversation/Verbal Notice

A telephone conversation or verbal notice will be used to obtain additional information pertaining to a storm water-related concern or to resolve an infrequent issue. The initial contact will take place within 72 hours of receiving a complaint or observing a storm water-related concern. At a minimum, the conversation shall be documented on an Enforcement Response Documentation Form with the following information: date/time call placed, the County staff member who initiated contact, the person contacted (responsible party), and the content of the conversation.

4.1.2 Meetings

A meeting may also be used to obtain additional information pertaining to a storm water-related concern or to resolve an issue that does not pose immediate threat to human health or the environment. The meeting will serve to educate the responsible party regarding the storm water-related concern and to discuss measures that can be taken to correct the issue. The meeting will be conducted by the Storm Water Management Program (SWMP) Coordinator or a delegated member of the SWMP team. At a minimum, the meeting shall be documented on an Enforcement Response

Documentation Form with the following information: meeting location, date/time of meeting, meeting attendees, content of the conversation, and agreements made at the meeting.

4.2 Referral to Other Agencies

4.2.1 Montana DEQ Enforcement Division

Discharges and/or activities which are believed to be an immediate threat to human health or the environment will be reported Montana DEQ. DEQ's Enforcement Division may assist in the response and enforcement process. Contact information for DEQ is as follows:

Montana DEQ Enforcement Division
Phone: (406) 444-0379
Website: https://deq.mt.gov/DEQAdmin/ENF

4.2.2 Local Fire Department

The City of Billings Fire Department or the Lockwood Fire Department will be contacted for situations requiring hazardous materials response. The phone number for the City of Billings Fire Department and the Lockwood Fire Department are as follows:

City of Billings Fire Department
Phone: (406) 657-8423

Lockwood Fire Department
Phone: (406) 252-1460

4.2.3 RiverStone Health

RiverStone Health is the local health department that helps protect people from health threats such as food-borne illnesses, natural and man-made disasters, toxic exposures, and preventable illness and injury. This includes hazardous spills near drinking water sources, parks with dogs and children, and potential to contaminant soils and groundwater. RiverStone health may be able to assist with response and enforcement procedures for illicit-discharge related violations. The phone number and website to access RiverStone Environmental Health Services are as follows:

Phone: (406) 256-2770
Website: https://riverstonehealth.org/our-organization/contact-us/

4.2.4 Local Emergency Personnel

Discharges and/or activities which are believed to be an immediate threat to human health or the environment may be reported to local emergency personnel.

Local Emergency Personnel
Phone: 911

4.2.5 City of Billings Environmental Division

The City of Billings may be able to assist with response and enforcement procedures for situations which could impact the City's MS4. City of Billings Environmental Division's contact information is provided below:

City of Billings Environmental Division
Phone: (406) 247-8517

4.2.6 Montana Department of Transportation Environmental Services

The Montana Department of Transportation may be able to assist with response and enforcement procedures for situations which are impacting MDT's facilities. MDT's Environmental Services Division contact information is provided below:

MDT Environmental Services
Phone: (406) 252-4138

4.3 Additional Considerations

The following criteria will be considered to aid in determining the correct level of response.

4.3.1 Magnitude

A minor isolated instance requiring correction will typically be considered non-significant and addressed with informal responses; however, isolated incidents which may cause immediate or significant damage to the MS4 or pose a threat to human health and/or the environment will be considered significant and the County will solicit help from DEQ or other appropriate agencies (see Section 4.2).

4.3.2 Duration

Regardless of magnitude, storm water-related concerns that continue over prolonged periods of time will result in escalated enforcement actions.

4.3.3 Compliance History

The responsible party's compliance history will be an important factor in determining the appropriate remedy to apply. The County will likely rely on informal responses for the less severe storm water-related concerns if the responsible party has a good compliance history; however, recurring issues may lead the County to escalate the level of response in a shorter time-frame than usual.

4.3.4 Good Faith of the Operator

Good Faith is a characteristic of actions which show that the responsible party is intending to correct the issue(s) in a timely manner. If the responsible party is attempting in good faith to correct the storm water-related concern, the County's enforcement responses may be less severe; however, potential threats to human health and the environment will always take precedence when considering whether or not to base the County's level of response on the good faith of the responsible party.
In addition, while the responsible party's good faith in correcting its noncompliance may be a factor in determining which enforcement response is suitable, good faith does not preclude the responsible party from enforcement action.

5 Enforcement Roles and Responsibilities

The following table outlines the typical enforcement roles of County personnel. Primary indicates primary responsibility, Secondary indicates secondary responsibility, and N/A indicates that County personnel do not have the authority to make the decision.

Table 5-1. County Staff Enforcement Roles

Enforcement Action	Delegated SWMP Team Member	SWMP Coordinator	Public Works Director
Telephone Conversation and/or Verbal Notice	Primary	Primary	Secondary
Meetings	Primary	Primary	Secondary
Referral to Other Agencies	N/A	Primary	Primary

All storm water-related concerns and the responses shall be reported to the SWMP Coordinator. The SWMP Coordinator or delegated SWMP team member will be responsible for initiating and documenting informal responses. If the storm water-related concern is not resolved or the situation poses a significant threat to human health or the environment, the SWMP Coordinator or the Public Works Director will coordinate with other regulatory agencies. The SWMP Coordinator and the County Attorney will be copied on all enforcement responses.

6 Escalation Process and Schedule for Storm Water-Related Concerns

The type of storm water-related concern and enforcement response schedule differs for each MCM; therefore, refer to the following attachments for this information:

- Attachment A: Illicit Discharge Detection and Elimination
- Attachment B: Construction Site Storm Water Management
- Attachment C: Post-Construction Site Storm Water Management in New and Redevelopment Areas

Attachment A. Illicit Discharge Detection and Elimination

Escalation Process and Schedule for Illicit Discharge Violations

Tables A-1 and A-2 (below) provide typical responses to common illicit discharge violations and a typical schedule for escalation of enforcement actions. Each situation has unique circumstances and concerns. Therefore, the tables below serve as guidance only. Violations that pose a significant threat to human health and/or the environment will utilize more severe enforcement actions on a compressed timeframe in order to quickly eliminate the illicit discharge, abate any damages, and prevent recurrence.

Table A-1. Example Responses to Common Illicit Discharge Violations

Violation	Circumstances of Violation	Initial Level of Response	Initial Response Remedy
Dumping household chemicals into a storm drain	Isolated Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Contractor discharging paint, concrete wash water, or other deleterious substance into a storm drain	Isolated Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Restaurant or business discharging fat, oil, grease, or mop wash water into a storm drain	Isolated Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Direct connection of anything other than storm water or clean groundwater into a storm drain	Isolated Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Discharging wastewater from a RV, camper, or other source into a storm drain	Isolated Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies

Table A-2. Escalation Process, Response Schedule, and Responsibilities for Illicit Discharge Violations

Response	Response Schedule	Responsibility
Telephone Conversation, Verbal Notice, and/or Meeting	Within 48 hours of Violation	SWMP Coordinator
Referral to Other Agencies	As deemed appropriate by the SWMP Coordinator and Public Works Director	SWMP Coordinator Public Works Director

Attachment B. Construction Site Storm Water Management

Escalation Process and Schedule for Construction Site Storm Water Violations

Tables B-1 and B-2 (below) provide typical responses to common construction site storm water violations and a typical schedule for escalation of enforcement actions. Each situation has unique circumstances and concerns. Therefore, the tables below serve as guidance only. Violations that pose a significant threat to human health and/or the environment will utilize more severe enforcement actions on a compressed timeframe in order to quickly eliminate the illicit discharge, abate any damages, and prevent recurrence.

Table B-1. Example Responses to Common Construction Site Storm Water Violations

Violation	Circumstances of Violation	Initial Level of Response	Initial Response Remedy
Conducting earth disturbing activities without preparing a SWPPP and obtaining coverage under DEQ's Construction General Permit	Operator is unware of requirements	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Operator is aware of requirements but has not obtain coverage	Level 3	Referral to Other Agencies
Best management practices (BMPs) as listed on the SWPPP are: ▪ Not installed ▪ Not installed correctly ▪ Not regularly inspected ▪ Not maintained	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Poorly maintained construction site (i.e. lack of good housekeeping techniques, tracking soil offsite, excessive trash and debris, etc.)	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
SWPPP is not up-to-date	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
SWPPP is not located on site	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies

Table B-2. Escalation Process, Response Schedule, and Responsibilities for Construction Site Storm Water Violations

Response	Response Schedule	Responsibility
Telephone Conversation, Verbal Notice, and/or Meeting	Within 48 hours of Violation	SWMP Coordinator
Referral to Other Agencies	As deemed appropriate by the SWMP Coordinator and Public Works Director	SWMP Coordinator Public Works Director

Attachment C. Post-Construction Site Storm Water Management in New and Redevelopment

Escalation Process and Schedule for Post-Construction Site Storm Water Violations

Tables C-1 and C-2 (below) provide typical responses to common post-construction storm water violations and a typical schedule for escalation of enforcement actions. Each situation has unique circumstances and concerns. Therefore, the tables below serve as guidance only. Violations that pose a significant threat to human health and/or the environment will utilize more severe enforcement actions on a compressed timeframe in order to quickly eliminate the illicit discharge, abate any damages, and prevent recurrence.

Table C-1. Example Responses to Common Post-Construction Site Storm Water Violations

Violation	Circumstances of Violation	Initial Level of Response	Initial Response Remedy
Failure to obtain approval of subdivision plans from DEQ and the County Planning Department	Operator initiated construction prior to receiving approval	Level 3	Referral to Other Agencies
Failure to construct post-construction storm water management facilities as shown on the plans and as required by DEQ Circular 8	Initial Incident	Level 3	Referral to Other Agencies
Failure to abide by the operation and maintenance plan submitted to DEQ for post-construction storm water management facilities	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Failure to notify the Public Works Department about modifying post-construction storm water management facilities	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies
Failure to notify the Public Works Department of a change of ownership	Initial Incident	Level 2	Telephone Conversation, Verbal Notice, and/or Meeting
	Repeat Incident	Level 3	Referral to Other Agencies

Table C-2. Escalation Process, Response Schedule, and Responsibilities for Construction Site Storm Water Violations

Response	Response Schedule	Responsibility
Telephone Conversation, Verbal Notice, and/or Meeting	Within 48 hours of Violation	SWMP Coordinator
Referral to Other Agencies	As deemed appropriate by the SWMP Coordinator and Public Works Director	SWMP Coordinator Public Works Director

Attachment D. Enforcement Response Documentation Form

ENFORCEMENT RESPONSE DOCUMENTATION FORM

County Personnel Involved Date

Description of Storm Water Concern

Location of Storm Water Concern

Responsible Party Telephone

Street City Zip

Description of Storm Water Concern:

Level of Response Selected Remedy Follow-Up Date

Additional Notes:

Appendix I. Storm Water Ordinance/Regulatory Mechanism

Proposed Compliance Plan for MS4 General Permit Ordinance and Regulatory-Related Requirements

Date:	Thursday, December 19, 2019
Project:	Yellowstone County MS4 Program
To:	Montana Department of Environmental Quality
From:	Mike Black, PE – Yellowstone County Primary SWMP Coordinator
Subject:	MS4 Ordinance Development Investigation

Introduction

Yellowstone County's (County) storm water management program (SWMP) is subject to the requirements of Montana's General Permit for Storm Water Discharges Associated with Small MS4s (Permit). In addition to various non-regulatory requirements, the Permit requires the County to develop ordinances or other regulatory mechanisms to implement certain requirements related to management of storm water and pollution prevention in the County's MS4-regulated area. Since the implementation of Montana's MS4 permitting program, the County has had difficulty implementing ordinances and regulatory-related Permit requirements.

The County recently conducted a research investigation and met with the Montana Department of Environmental Quality (DEQ) to consider and assess potential solutions to achieve compliance with the Permit's ordinance and regulatory-related requirements. During the meeting, DEQ acknowledged that roadblocks to implementing certain Permit requirements may exist; however, the County's SWMP team was encouraged to identify steps that could be taken to make progress towards achieving Permit compliance. The purpose of this document is to describe the County's next planned steps and proposed schedule to work towards addressing the Permit's ordinance and regulatory-related requirements.

Permit Requirements and Compliance Plans

Permit requirements are separated into two categories: (1) regulatory-related requirements, and (2) non-regulatory related requirements. Regulatory-related requirements will require ordinances or other regulatory mechanisms to implement, while non-regulatory related requirements can be implemented by the SWMP team without ordinances or regulatory mechanisms. The following sections summarize the Permit's ordinance and regulatory-related requirements and non-regulatory requirements by minimum control measure (MCM) to provide consistency with organization of the Permit. The sections also identify the SWMP team's proposed approach to work towards compliance with regulatory-related requirements identified for each MCM.

MCM 3 – Illicit Discharge Detection and Elimination

The County has identified five key objectives that will be used to build the Illicit Discharge Detection and Elimination (IDDE) Program. These objectives, shown on Figure 1, will ultimately help to mitigate and reduce illicit discharges in the County's MS4 areas.

Figure 1. IDDE Program Key Objectives

Objectives will be achieved through complying with both regulatory and non-regulatory related Permit requirements. Elements of both categories are summarized below.

MCM 3 – Regulatory-Related Requirements

- Prohibit illicit discharges
- Partner with neighboring MS4(s)
- Develop and implement IDDE enforcement response plan (ERP)
- Develop and implement IDDE Investigation and Corrective Action Plan

MCM 3 – Non-Regulatory Related Requirements

- Evaluate non-storm water discharges
- Place controls on significant non-storm water discharges
- Develop storm sewer inventory and associated map
- Inspect and screen outfalls
- Identify high priority outfalls
- Document IDDE investigations

A summary of the County's plans to address the MCM 3's regulatory-related requirements listed above are provided in Table 1. The comprehensive plans to develop and implement the IDDE program, including plans to address non-regulatory related requirements, will be included in the 2019 and 2020 SWMP.

Table 1. MCM 3 Compliance Plan Summary

Permit Section	Permit Requirement (Summary)	Solution(s) to Pursue	Task at Hand	Schedule
Part II.A.3.d.i	Prohibit illicit discharges	Develop a water quality district (WQD) and associated water quality ordinance to define and prohibit illicit discharges Consider adopting new rules and regulations through RiverStone Board of Health Consider updates to the Sanitation and subdivision regulations	Develop an illicit discharge prohibition plan to present to the Commissioners. The plan will include the following: ▪ WQD implementation plan ▪ RiverStone Health rules update plan ▪ Sanitation and subdivision regulation update plan Each plan will describe applicable Permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution	March 31, 2020
Part II.A.3.d.iv	Partner with neighboring MS4(s)	Consider partnership(s) with City of Billings and MDT	Develop an IDDE partnership plan to explore opportunities to partner with the City of Billings and MDT	July 1, 2020
Part II.A.3.d.iv	Develop and implement IDDE ERP	Develop ERP that will use existing tools to respond to illicit discharges	Develop ERP that can be used now and expanded as the IDDE program progresses in the future	First draft with 2019 Annual Report Second draft July 1, 2020

Permit Section	Permit Requirement (Summary)	Solution(s) to Pursue	Task at Hand	Schedule
Part II.A.3.f.i	Develop and implement IDDE Investigation and Corrective Action Plan	Develop Investigation and Corrective Action Plan that will use existing tools to respond to, investigate, and abate illicit discharges	Develop an Investigation and Corrective Action Plan that can be used now and expanded as the IDDE program progresses in the future	First draft with 2019 Annual Report Second draft July 1, 2020

MCM 4 – Construction Site Storm Water Management

The County has identified five key objectives that will be used to build the Construction Storm Water Management Program to fulfill Permit requirements. These objectives are presented in the Figure 2.

Figure 2. Construction Storm Water Management Program Key Objectives

Objectives will be achieved through complying with both regulatory and non-regulatory related Permit requirements. Elements of both categories are summarized below.

MCM 4 – Regulatory-Related Requirements

- Require construction storm water controls on regulated projects
- Develop and implement a construction ERP
- Conduct plan reviews and approvals for regulated projects
- Conduct inspections of regulated projects

MCM 4 – Non-Regulatory Related Requirements

- Develop plan review checklist
- Develop inspection form
- Develop and maintain a regulated project inventory
- Develop inspection frequency determination protocol

A summary of the County's plans to address the MCM 4's regulatory-related requirements listed above are provided in Table 2. The comprehensive plans to develop and implement the construction storm water management program, including plans to address non-regulatory related requirements, will be included in the 2019 and 2020 SWMP.

Table 2. MCM 4 Compliance Plan Summary

Permit Section	Permit Requirement (Summary)	Solution(s) to Pursue	Task at Hand	Schedule
Part II.A.4.a.i	Require construction storm water controls on regulated projects	Revise County subdivision regulations Revise County zoning regulations Consider development of a County public works manual Consider increasing zoned areas to include full MS4 area	Develop a construction storm water control requirement plan to present to the Commissioners. The plan will include the following: ▪ Subdivision regulation revision plan ▪ Zoning regulations revision plan ▪ Public works manual development plan ▪ Zoned areas analysis and revision plan Each plan will describe applicable Permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution.	March 31, 2020
Part II.A.4.a.iii	Develop and implement a construction ERP	Develop ERP that will use existing tools to respond to construction violations	Develop ERP that can be used now and expanded as the construction program progresses in the future.	First draft with 2019 Annual Report Second draft July 1, 2020
Part II.A.4.b.ii	Conduct plan reviews and approvals for regulated projects	Develop and implement a program (with new staff, or existing staff if possible) to conduct plan reviews and approvals and conduct inspections within the County's jurisdiction (i.e., zoned areas)	Develop construction program framework for presentation to the Commissioners (i.e., positions, job descriptions, and program responsibilities)	July 1, 2020
Part II.A.4.c.iii	Conduct inspections of regulated projects			

MCM 5 – Post-Construction Site Storm Water Management

The County has identified five key objectives that will be used to build the Post-Construction Storm Water Management in New and Redevelopment Program to comply with Permit requirements. These objectives are presented in the Figure 3.

Figure 3. Post-Construction Storm Water Management Program Key Objectives

Objectives will be achieved through complying with both regulatory and non-regulatory related permitting requirements. Elements of both categories are summarized below.

MCM 5 – Regulatory-Related Requirements

- Require post-construction storm water management controls on regulated projects (½" rule)
- Develop and implement a post-construction ERP
- Conduct plan reviews and approvals for regulated projects
- Develop a program to conduct (or require) inspections of high-priority private post-construction storm water management controls

MCM 5 – Non-Regulatory Related Requirements

- Develop plan review checklist
- Develop inspection form
- Develop and maintain an inventory of projects utilizing offsite treatment (if applicable)
- Develop an inventory of post-construction management controls
- Develop inspection frequency determination protocol
- Conduct inspections of high-priority permittee owned post-construction storm water management controls
- Conduct a discussion to evaluate barriers to implementing low impact development techniques

A summary of the County's plans to address the MCM 5 regulatory-related requirements above are provided in Table 3. The full plans to develop and implement the post-construction storm water management program, including plans to address non-regulatory related requirements, will be included in the 2019 and 2020 SWMP.

Table 3. MCM 5 Compliance Plan Summary

Permit Section(s)	Permit Requirement (Summary)	Solution(s) to Pursue	Task at Hand	Schedule
Part II.A.5.a.i Part II.A.5.b.iii	Require post-construction storm water controls on regulated projects	Revise County subdivision regulations Revise County zoning regulations Consider development of a County public works manual Consider increasing zoned areas to include full MS4 area	Develop a post-construction storm water control requirement plan to present to the Commissioners. The plan will include the following: ▪ Subdivision regulation revision plan ▪ Zoning regulations revision plan ▪ Public works manual development plan ▪ Zoned areas analysis and revision plan Each plan will describe applicable Permit requirements, how the potential solution will address the requirements, and the steps needed to implement the solution.	March 31, 2020
Part II.A.5.a.iii	Develop and implement a post-construction ERP	Develop ERP that will use existing tools to respond to construction violations	Develop ERP that can be used now and expanded as the construction program progresses in the future	First draft with 2019 Annual Report Second draft July 1, 2020

Permit Section(s)	Permit Requirement (Summary)	Solution(s) to Pursue	Task at Hand	Schedule
Part II.A.5.b.i	Conduct plan reviews and approvals for regulated projects	Develop and implement a program (with new staff, or existing staff if possible) to conduct plan reviews and approvals and conduct inspections within the County's jurisdiction (i.e., zoned areas)	Develop post-construction program framework for presentation to the Commissioners (i.e., positions, job descriptions, and program responsibilities)	July 1, 2020
Part II.A.5.c.vii	Develop a program to conduct (or require) inspections of high-priority private post-construction storm water management controls			

Conclusion

The County's SWMP team is actively working to make progress towards achieving compliance with all of the regulatory and non-regulatory related Permit requirements. The SWMP team has already started working on the tasks presented in Tables 1 through 3 to fulfill the ordinance and regulatory-related requirements of the Permit. Additionally, the SWMP team has been coordinating with the County's Legal Department to research and assist with the tasks listed in the tables. A progress update will be provided to DEQ with the 2019 MS4 Annual Report, to be submitted on or before March 1, 2020.

Appendix J. Training Documentation

Post-Construction Storm Water Management Training

Yellowstone County MS4 Program

Date: Tuesday, December 18, 2018

Location: Yellowstone County Public Works

Attendee Name	Position/Responsibly	Signature
Mike Black	MS4 Coordinator	
	Public Works Director	
Darin Swenson		

Post-Construction Storm Water Management Training

Yellowstone County, Montana

December 18, 2018

01 Review Permit Requirements

02 Post-Construction BMP Manual Overview

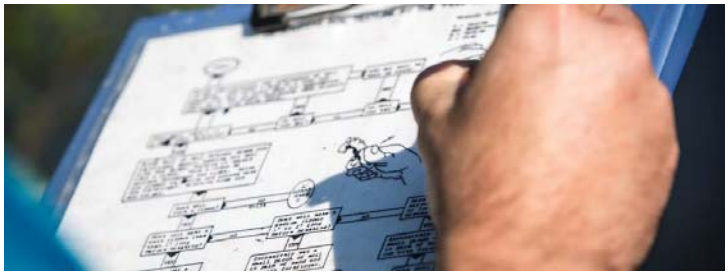
03 Post-Construction BMP Design Discussion

04 Post-Construction BMP Inspection Guidance

05 Site Visit

MCM 5: Summary of Permit Requirements

- Post-Construction Performance Standard (½" Requirement)
- Ordinance
- Enforcement Response Plan (ERP)
- Plan Review Checklist
- BMP Inventories
- Inspection Form(s)
- Conduct Inspections



CHAPTER 1
Introduction to the Manual

Purpose & Audience

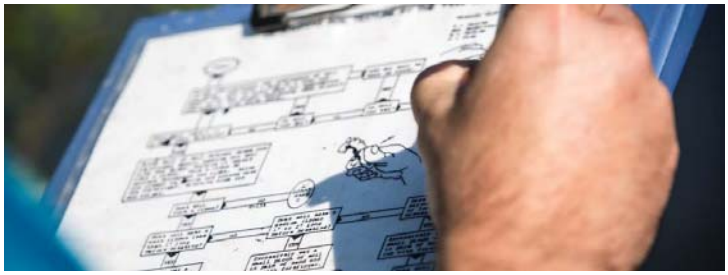
Purpose:

Guidance for

- Selecting
- Designing
- Constructing
- Inspecting
- Maintaining

Audience:

- Designers
- Contractors
- Project Owners
- MS4
  - Program manager
  - Plan reviewer
  - Inspectors



MS4 Permit Post-Construction Design Requirement

- Post-Construction Performance Standard
  - Manage runoff from 0.5-inches of rainfall
- Runoff Reduction Requirement
  - Onsite retention
- Runoff Treatment Requirement
  - Removal of 80% total suspended solids (TSS)

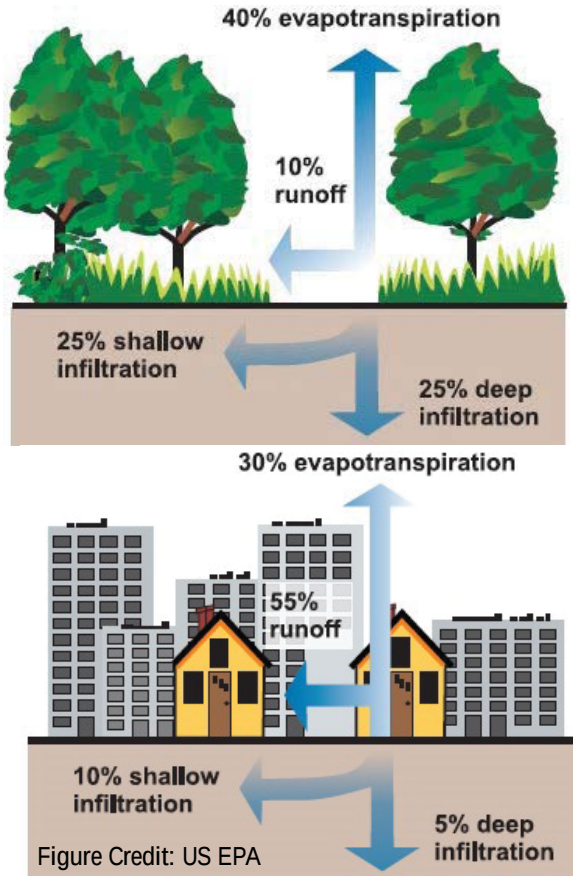
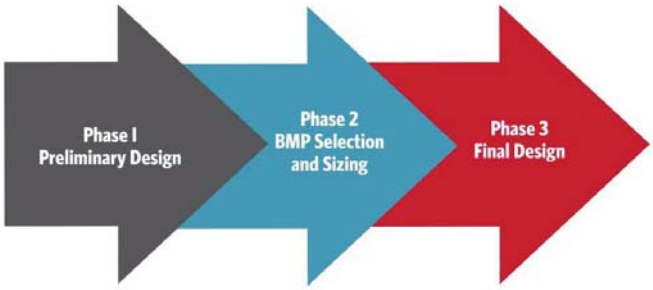
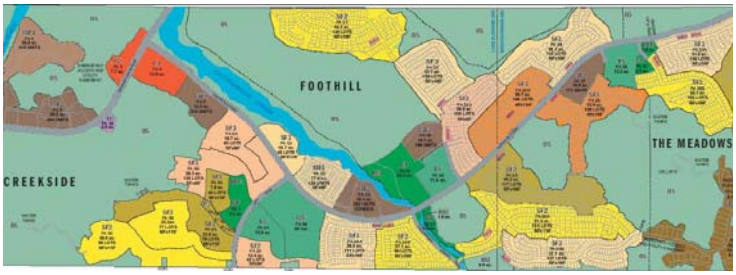


Figure Credit: US EPA

CHAPTER 2
Site Development

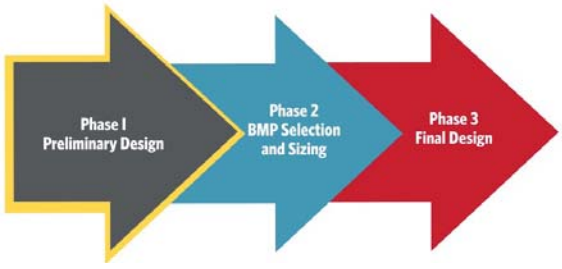




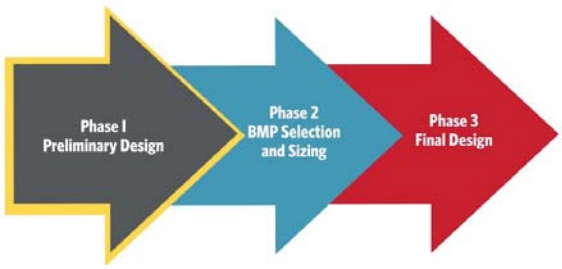
Site Development

Preliminary Design

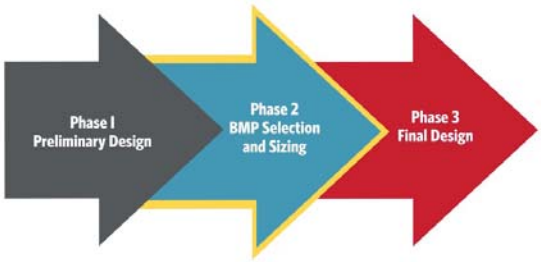
Site Assessment	Identify Design Standards and Requirements	Preliminary Site Layout	Hydrologic Analysis	
• Topography • Hydrologic Features • Soils • Land use • Etc…	→ • Local requirements • State requirements • Federal requirements • Etc…	→ • Site Grading • Roads • Buildings • General BMP location(s) • Etc…	→ Calculate Runoff Reduction Volume (RRV)	→ **Proceed to BMP Selection and Sizing**

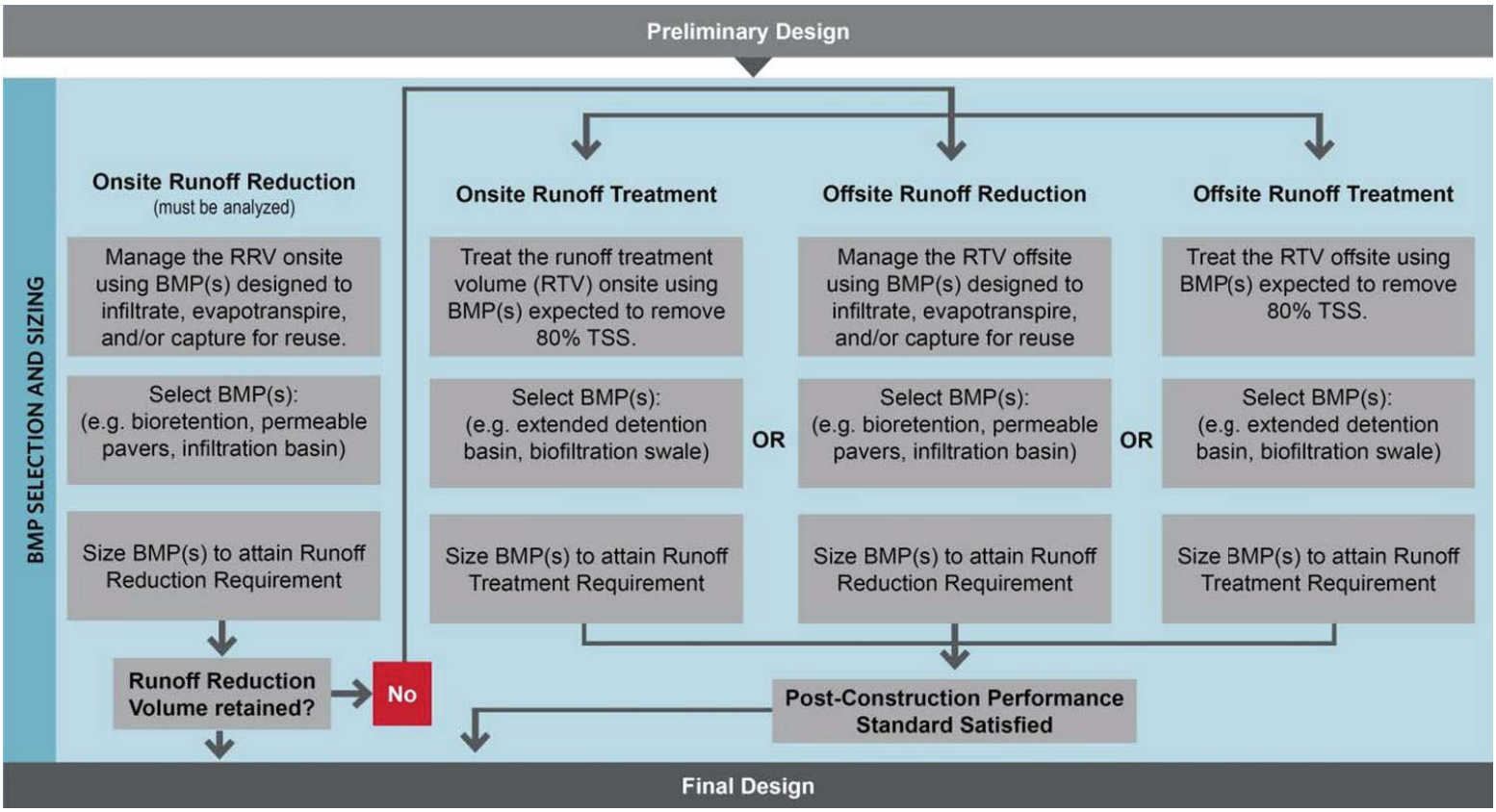


CHAPTER 3
Hydrologic Analysis Methodology



CHAPTER 4
Selection of Post-Construction BMPs





Screening Factors

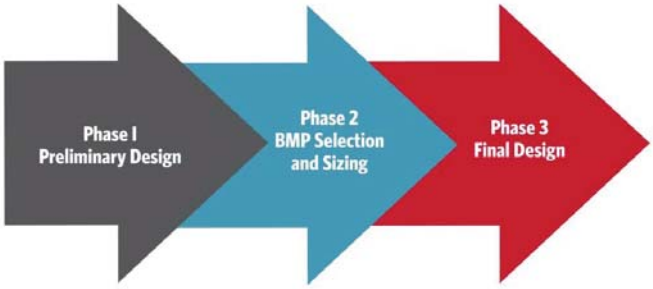
- Land Use
- Storm Water Management Objectives
- Physical Site Characteristics
- Special Storm Water Management Areas
- Maintenance
- Community Factors

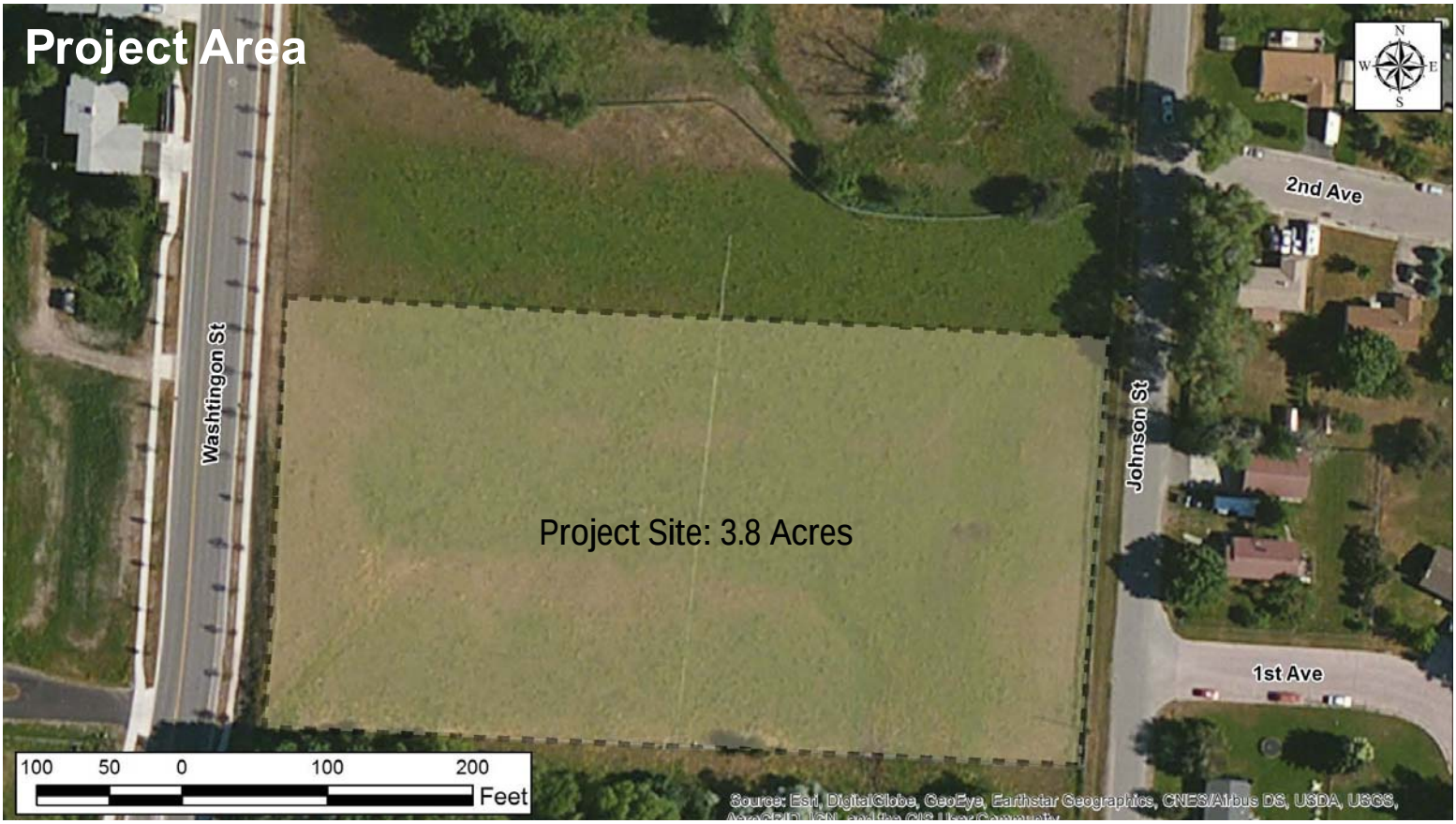
Selection of Post-Construction BMPs

BMP	Primary Function		Pollutant Removal Considerations						Site Applicability			
	Runoff Reduction[1]	Runoff Treatment[2]	TSS[3]	Total Phosphorus	Total Nitrogen	Temperature	Metals	Fecal Coliform	Contributing Drainage Area	Soil Characteristics	Depth to Groundwater and/or Bedrock	Maximum Site Slope
Infiltration Basin	✓		Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	0 to 50 acres	HSG A or B	3-foot minimum	5%
Bioretention	✓[4]		Preferred	Avoid	Avoid	Preferred	Preferred	—	2.5 acres or less	Applicable to most soil types	*Infiltration:* 3-foot minimum *No infiltration:* 1-foot minimum	5%
Permeable Pavement Systems	✓		Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	2:1 ratio	Applicable to most soil types	*Infiltration:* 3-foot minimum *No infiltration:* 1-foot minimum	6%
Dispersion	✓		Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	Limit sheet flow to 150 feet	Applicable to most soil types	3-foot minimum	Low to Moderate
Biofiltration Swale		✓	Preferred	—	—	—	—	—	5 acres or less	Applicable to most soil types	1-foot minimum	Low to Moderate
Extended Detention Basin		✓	Preferred	—	—	Avoid	—	—	5 acres to 1 square mile	Applicable to most soil types	2-foot minimum	15%
Wet Detention Basin		✓	Preferred	Preferred	—	Avoid	—	—	10 acres minimum	Low infiltration rates preferred	No restrictions	25%
Proprietary Treatment Devices		✓	Varies for different units						Varies for different units			

DESIGN EXAMPLE

- Commercial Site
- 3.8 Acres
- Preliminary Design Considerations
- BMP Selection & Sizing
- Final Design





Design Example

Preliminary Design

Site Assessment
- Topography
- Hydrologic Features
- Soils
- Land use
- Etc…

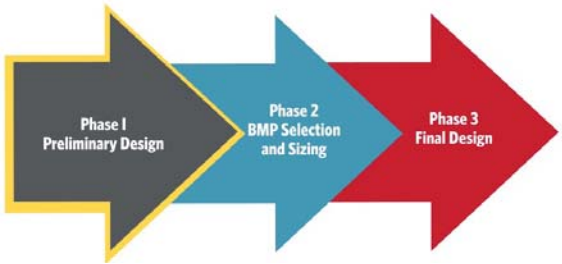
→ **Identify Design Standards and Requirements**
- Local requirements
- State requirements
- Federal requirements
- Etc…

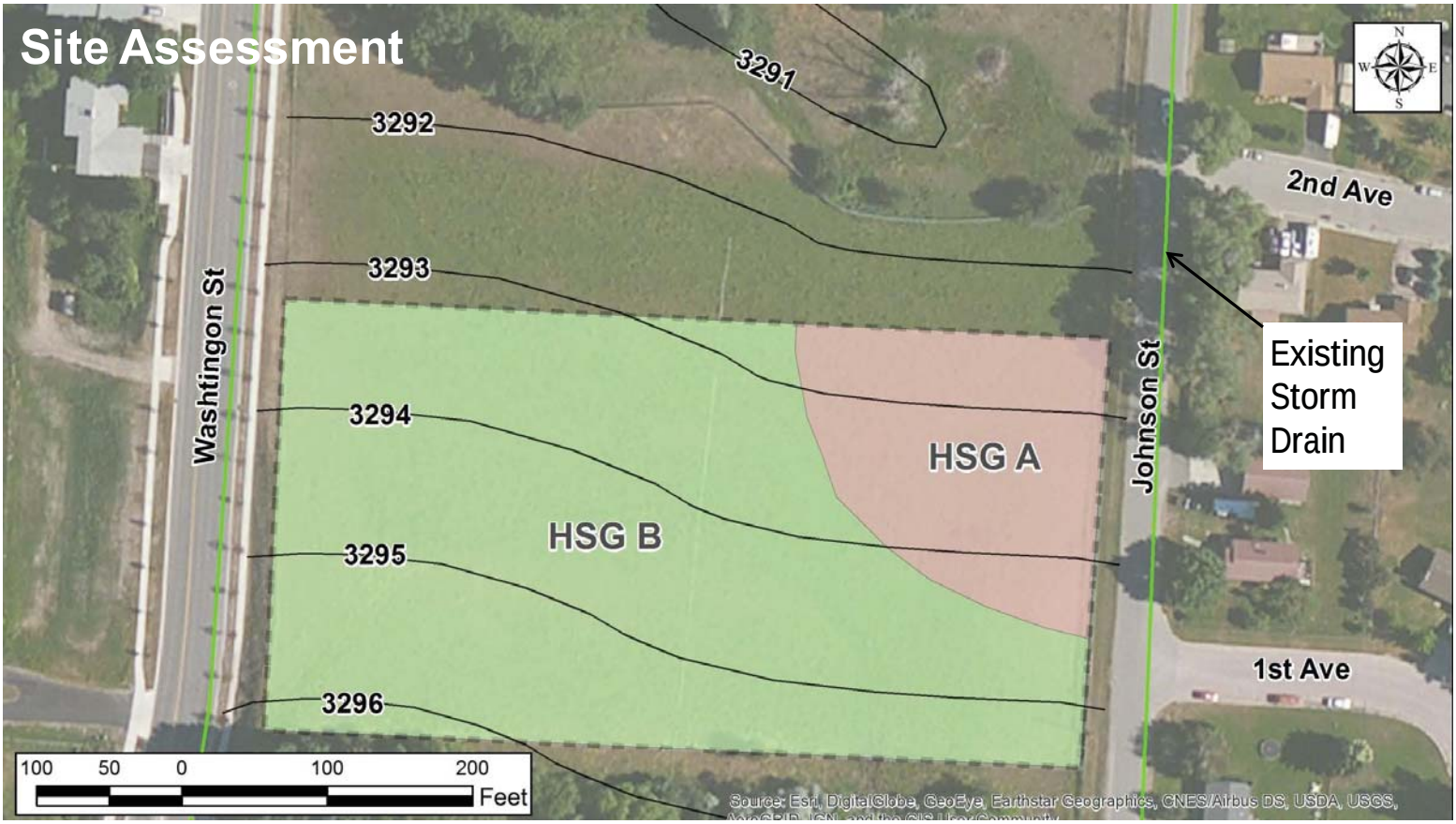
→ **Preliminary Site Layout**
- Site Grading
- Roads
- Buildings
- General BMP location(s)
- Etc…

→ **Hydrologic Analysis**

Calculate Runoff Reduction Volume (RRV)

→ **Proceed to BMP Selection and Sizing**

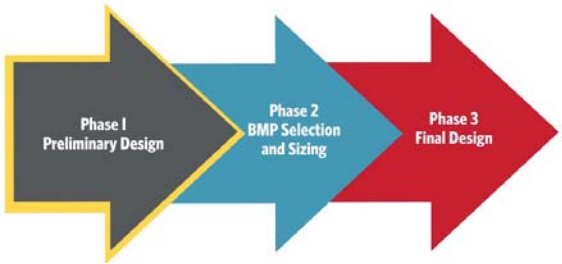




Design Example

Preliminary Design

Site Assessment	Identify Design Standards and Requirements	Preliminary Site Layout	Hydrologic Analysis	
• Topography • Hydrologic Features • Soils • Land use • Etc…	• Local requirements • State requirements • Federal requirements • Etc…	• Site Grading • Roads • Buildings • General BMP location(s) • Etc…	Calculate Runoff Reduction Volume (RRV)	Proceed to BMP Selection and Sizing



Preliminary Design

Site Assessment
- Topography
- Hydrologic Features
- Soils
- Land use
- Etc…

→

Identify Design Standards and Requirements
- Local requirements
- State requirements
- Federal requirements
- Etc…

→

Preliminary Site Layout
- Site Grading
- Roads
- Buildings
- General BMP location(s)
- Etc…

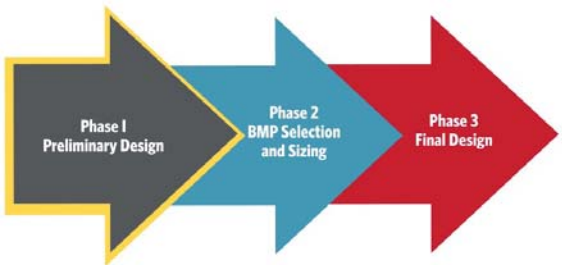
→

Hydrologic Analysis

Calculate Runoff Reduction Volume (RRV)

→

Proceed to BMP Selection and Sizing



Preliminary Design

Site Assessment
- Topography
- Hydrologic Features
- Soils
- Land use
- Etc…

→

Identify Design Standards and Requirements
- Local requirements
- State requirements
- Federal requirements
- Etc…

→

Preliminary Site Layout
- Site Grading
- Roads
- Buildings
- General BMP location(s)
- Etc…

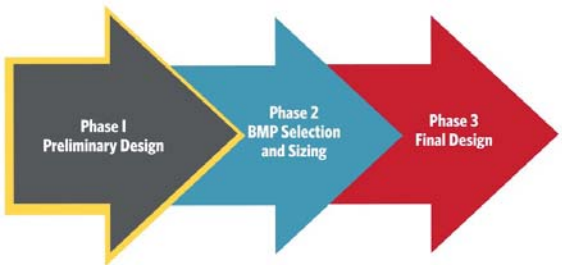
→

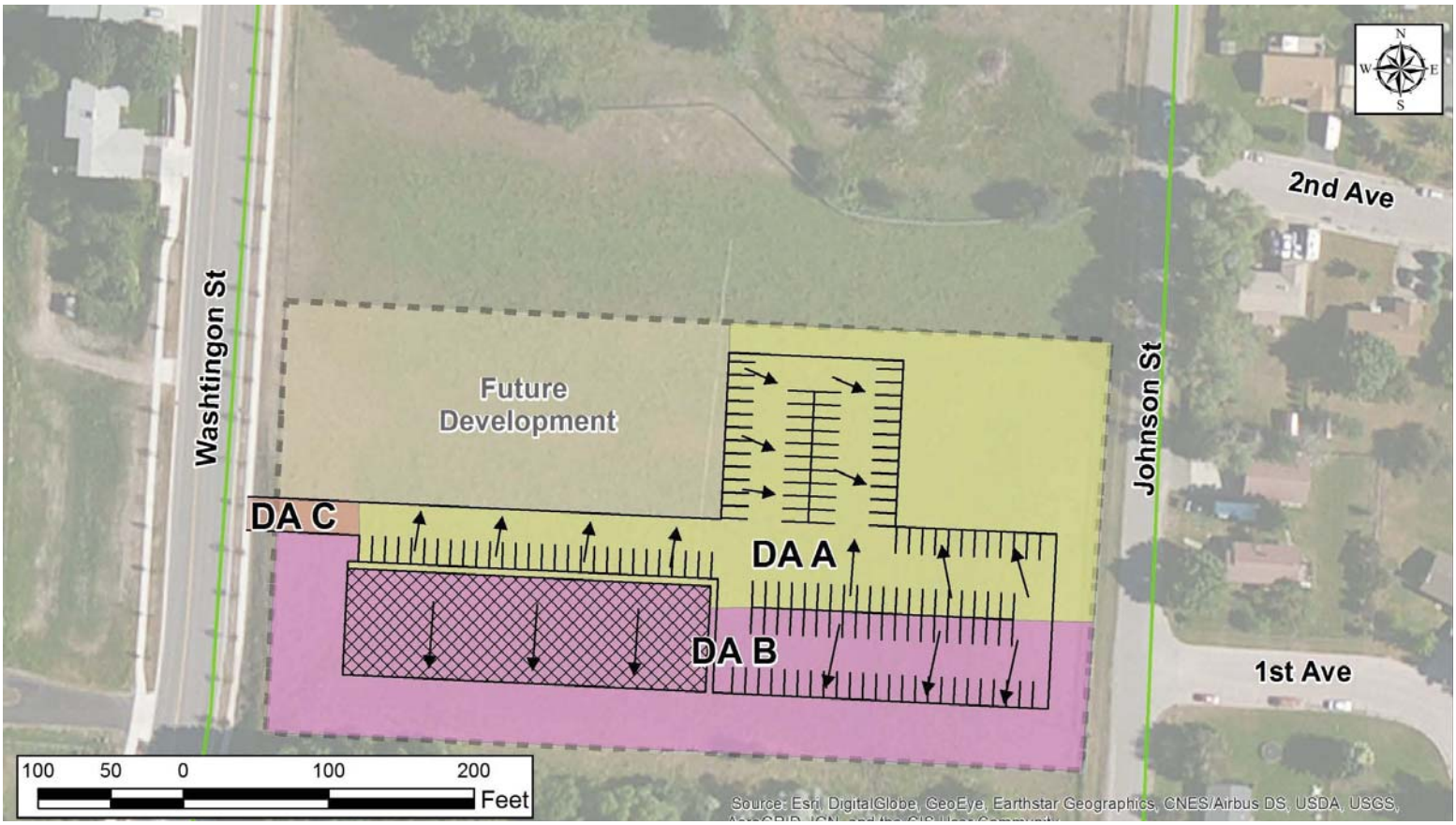
Hydrologic Analysis

Calculate Runoff Reduction Volume (RRV)

→

Proceed to BMP Selection and Sizing





Hydrology Calculations

- Calculation Runoff Reduction Volume (i.e., treatment volume)
- Infiltrate/treatment for ½-inch of rainfall
- Based on
  - Precipitation
  - Drainage Area
  - Percent Impervious (Runoff Coefficient)

$$RRV = \frac{PR_vA}{12}$$

Name	Drainage Area (acres)	Percent Impervious	RRV (ac-ft)	RRV (ft^3)
DA A	1.43	0.63	0.037	1600
DA B	1.43	0.52	0.031	1339
DA C	0.04	100	0.002	69

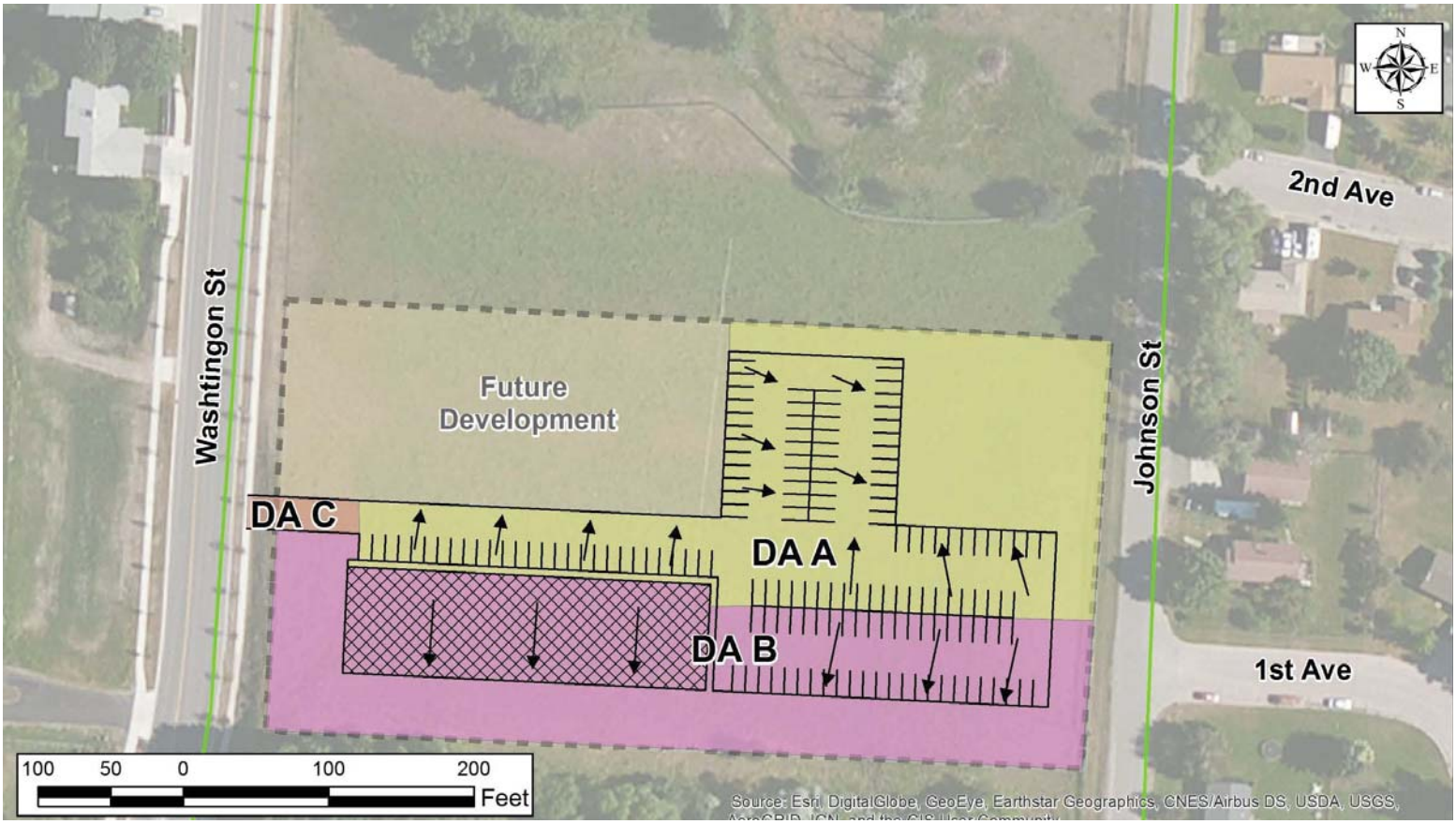
Design Example

Hydrology Calculations

- Calculation Runoff Reduction Volume (i.e., treatment volume)
- Infiltrate/treatment for ½-inch of rainfall
- Based on
  - Precipitation
  - Drainage Area
  - Percent Impervious (Runoff Coefficient)

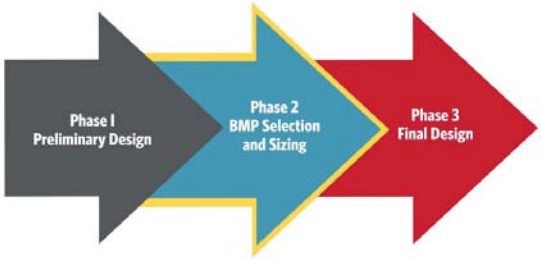
$$RRV = \frac{PR_vA}{12}$$

Name	Drainage Area (acres)	Percent Impervious	RRV (ac-ft)	RRV (ft^3)
DA A	1.43	0.63	0.037	1600
DA B	1.43	0.52	0.031	1339
DA C	0.04	100	0.002	69



BMP Selection (Drainage Area A)

- Focus: Onsite Runoff Reduction
- Pollutant Considerations
  - Only total suspended solids (TSS)



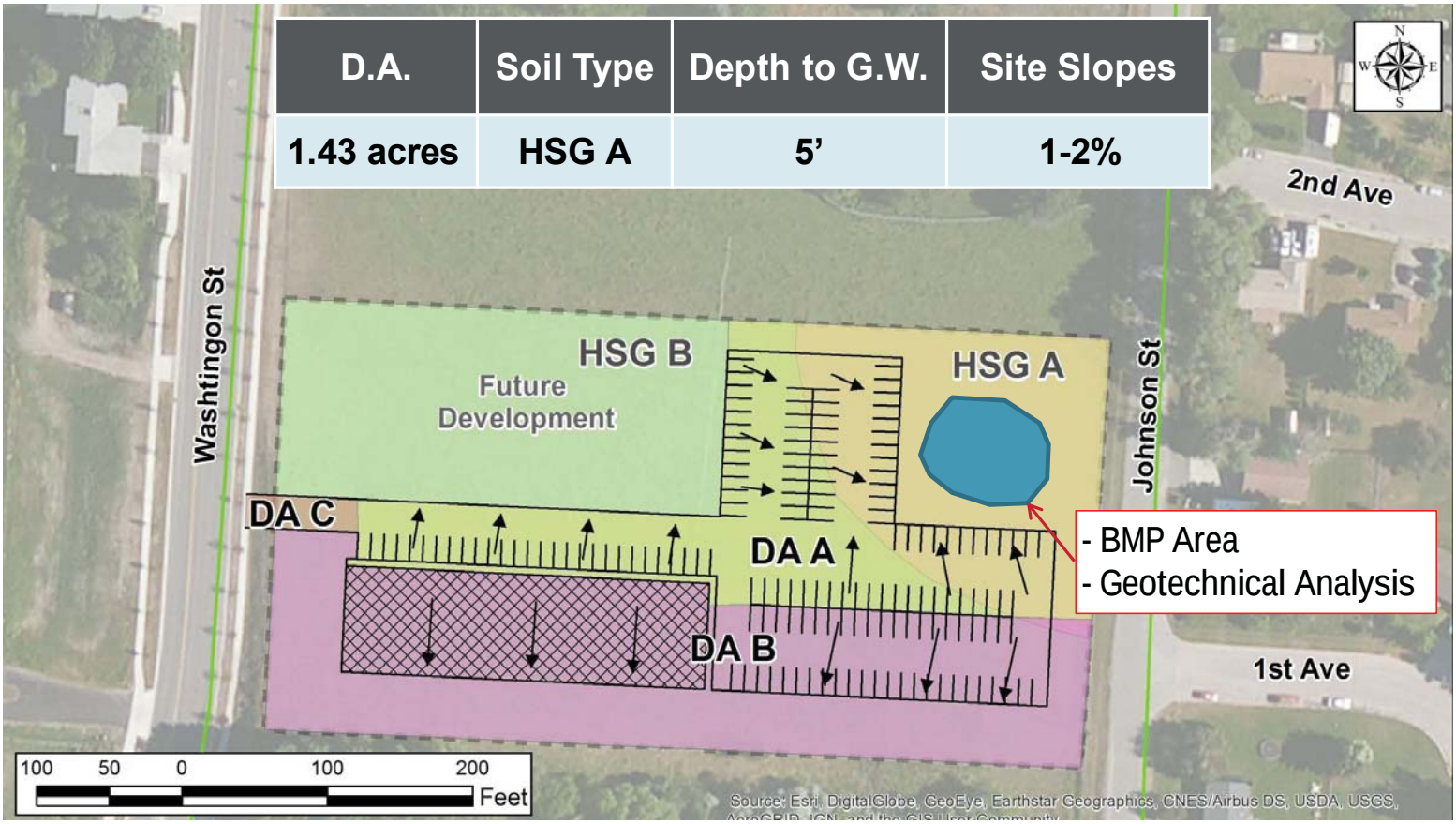


Table 4-3. BMP Summary Table

Name	Site Applicability			
	D.A.	Soils	Depth to G.W.	Maximum Slopes
Infiltration Basin	< 50 acres	HSG A or B	3 ft minimum	5%
Bioretention	< 2.5 acres	HSG A or B	3 ft minimum	5%
Permeable Pavement	2:1 ratio	HSG A or B	3 ft minimum	6%
Biofiltration Swale	< 5 acres	HSG A or B	3 ft minimum	Low to Moderate

Table 4-3. BMP Summary Table

Name	Site Applicability			
	D.A.	Soils	Depth to G.W.	Maximum Slopes
Infiltration Basin	< 50 acres	HSG A or B	3 ft minimum	5%
Bioretention	< 2.5 acres	HSG A or B	3 ft minimum	5%
Permeable Pavement	2:1 ratio	HSG A or B	3 ft minimum	6%
Biofiltration Swale	< 5 acres	HSG A or B	3 ft minimum	Low to Moderate

CHAPTER 5
Design Guidance for Post-Construction BMPs


Infiltration Basin


Bioretention


Permeable Pavement Systems


Dispersion


Biofiltration Swale

Extended Detention Basin


Wet Detention Basin


Proprietary Treatment Devices

Chapter 5 Layout

- BMP Summary Sheet
- Description
- Performance
- Site Selection
- Design & Sizing Procedure
- Vegetation Considerations
- Construction Considerations
- Maintenance
- Plan View & Typical Details

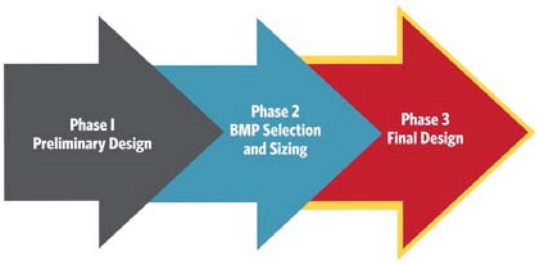


Figure 5.3-1. Bioretention Area
Source: Courtesy of the City of Bozeman

Description

Bioretention areas are shallow, landscaped depressions that capture and infiltrate or filter storm water runoff through plants, an engineered soil media, and often an underdrain.

Primary Components	Primary Function
▪ Inlet ▪ Pretreatment ▪ Surface ponding area ▪ Bioretention soil media ▪ Bioretention plants ▪ Underdrain (optional)	☑ Runoff reduction ☑ Runoff treatment

Benefits	Limitations
▪ Siting is generally not limited by native soils; design accommodations can be made for most soil types ▪ Dimensions are flexible, allowing this BMP to fit various site conditions ▪ Good retrofit capability	▪ Not recommended for contributing drainage basins greater than 2.5 acres ▪ Not recommended in developing or erosive watersheds given the potential for high sediment loads that can clog the BMP ▪ Not recommended for sites with steep slopes

Design and Site Selection Considerations

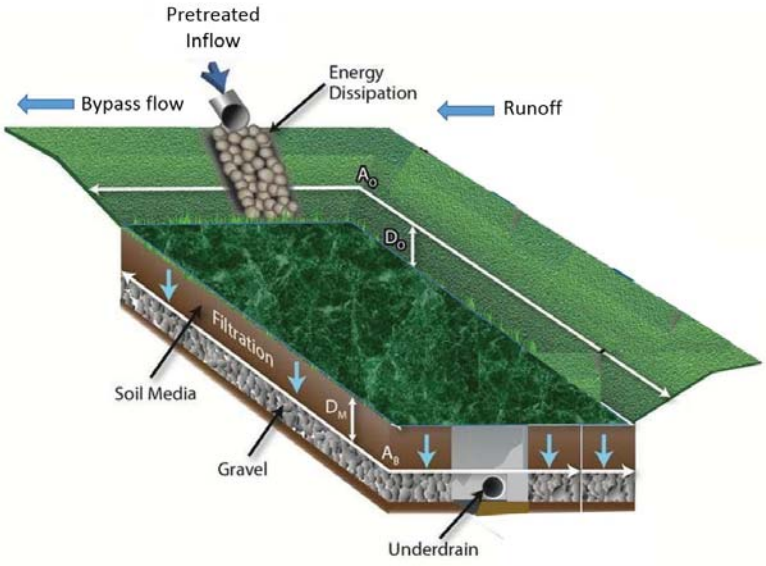
☑	Setbacks	☑	Underdrain (optional)
☑	Depth to groundwater or bedrock	☑	Facility liners (optional)
☑	Soil permeability	☑	Landscaping/planting
☑	Soil preparation/amendments/compost	☐	Fencing
☑	Pretreatment forebay	☑	Size of contributing drainage area
☑	Inlet and outlet spacing	☐	Area required
☑	Energy dissipater/level spreader	☑	Incorporate flood control

TMDL Considerations[1]			Maintenance Requirements
Avoid	Preferred		
☐	☑	Total suspended solids (TSS)	☑ Access roads or pullouts
☑	☐	Total phosphorus	☑ Sediment removal
☑	☐	Total nitrogen	☑ Irrigation, if applicable
☐	☑	Temperature	☑ Vegetation management
☐	☑	Metals	☐ Erosion and embankment stabilization repair
☐	☑	Fecal coliform	☑ Specialized equipment and training

5.3 Bioretention Area

5.3.2 Performance

☑ Runoff Reduction
☑ Runoff Treatment



5.3.3 Site Selection

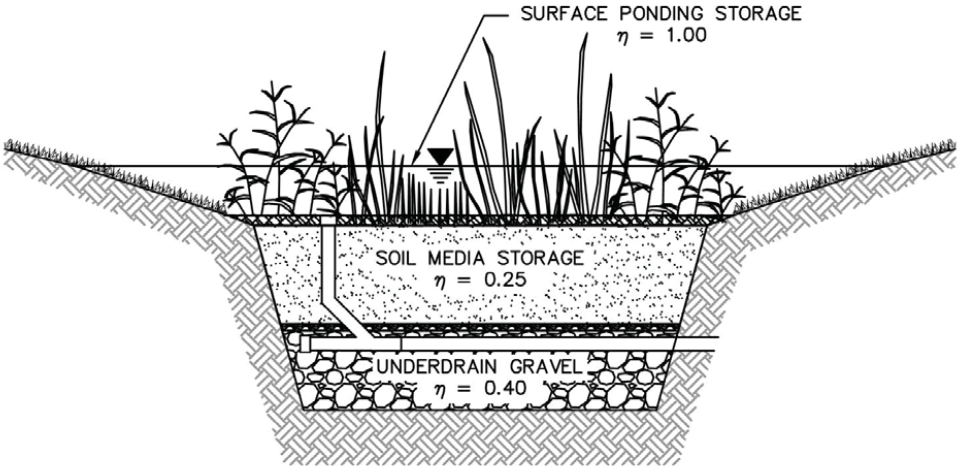
- Contributing Drainage Area
- Soil Characteristics
- Depth to Groundwater and/or Bedrock
- Site topography
- Land use and considerations of surrounding area
- Community and environmental considerations

5.3.3 Site Selection

- Contributing Drainage Area: <2.5 acres
- Soil Characteristics: Infiltrate within 48 hrs
- Depth to Groundwater and/or Bedrock: >3 ft
- Site topography: 1-5% grades
- Land use and considerations of surrounding area: avoid hotspots
- Community and environmental considerations: aesthetic feature

5.3.4 Design and Sizing Procedure

- Full, Partial, or No Infiltration
- Basin Storage Volume
- Geometry
- Inlet & Conveyance
- Pretreatment
- Surface Cover
- Bioretention Soil Media (Soil Amendments)
- Underdrain System
- Impermeable Liners
- Guidelines for Incorporating Flood Control



5.3 Bioretention Area

5.3.5 Vegetation Considerations

- Vegetation & landscaping plan
- Salt resistant vegetation
- Turf grass vs. mulch with plants
- Irrigation considerations
- Consider maintenance requirements
- Consult local specialists

5.3.6 Construction Considerations

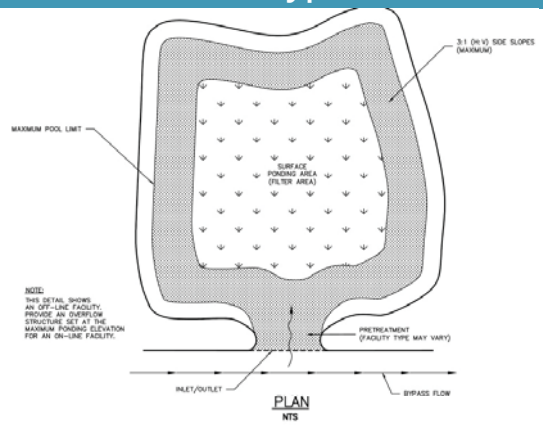
- Construction Site Management
- Construction Inspection
- Transitions to Post-Construction

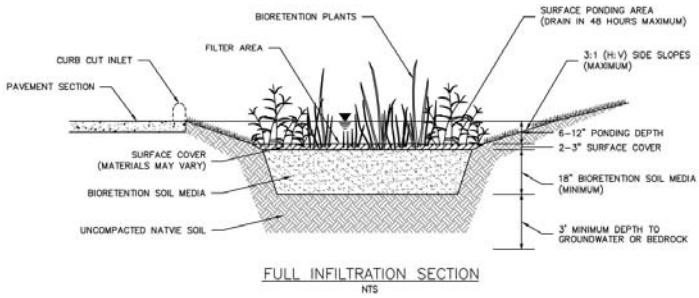
5.3 Bioretention Area

5.3.7 Maintenance

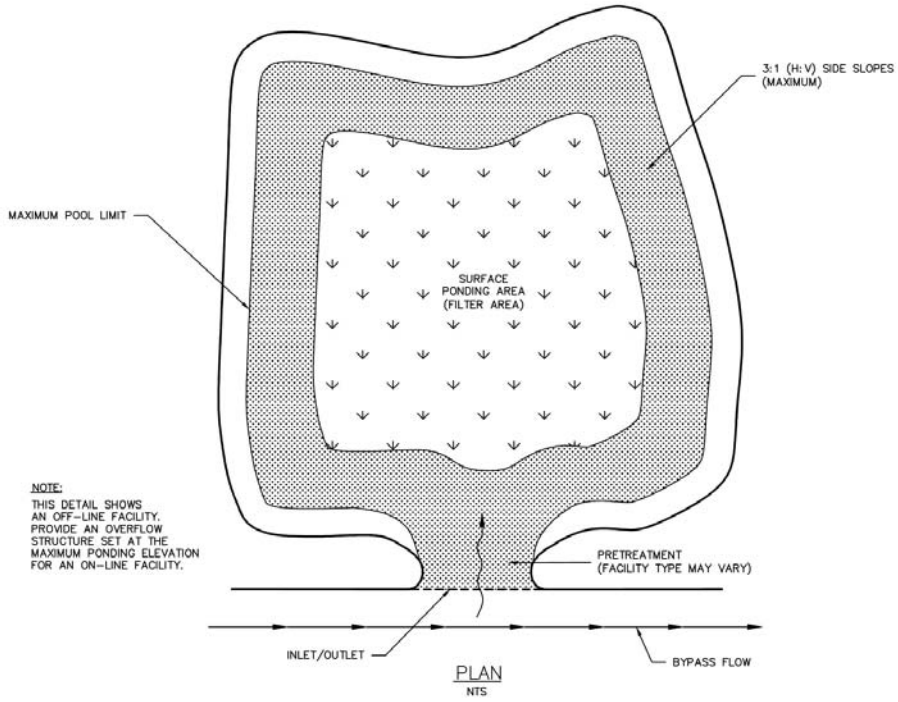
Activity	Frequency
▪ Inspect the bioretention area and contributing drainage area following rainfall events. Conduct any needed repairs or stabilization. ▪ One-time, spot fertilization may be needed for initial plantings. ▪ Follow the watering schedule provided by the designer because frequent watering is typically needed to establish vegetation.	Upon establishment
▪ Perform spot weeding, trash removal, and mulch raking.	Semiannually during growing season
▪ Add reinforcement planting to maintain the desired vegetation density. ▪ Manage all vegetation associated with the bioretention area. ▪ Remove sediment from inflow points, pretreatment facilities, diversion structures, and overflow structures (if applicable).	As needed

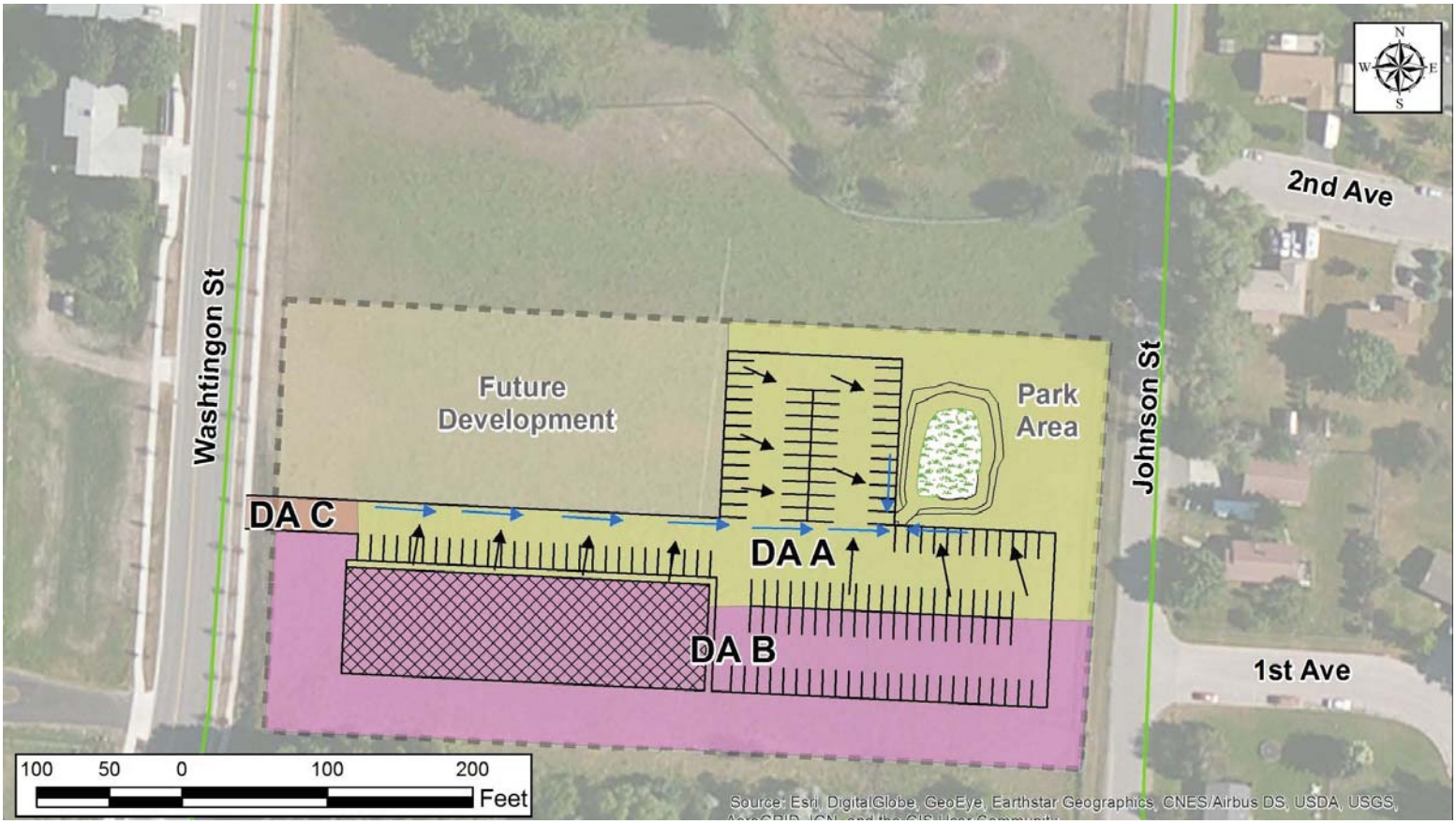
5.3.8 Plan View and Typical Details





5.3 Bioretention Area





APPENDICES

- Glossary
- Additional Hydrology Information
- Evaluating Soil Infiltration Rates
- Soil Amendments
- Standard Forms
- Inspection & Maintenance Checklists

APPENDICES

- Glossary
- Additional Hydrology Information
- Evaluating Soil Infiltration Rates
- Soil Amendments
- Standard Forms
- Inspection & Maintenance Checklists

Inspection Requirements

- Inspection checklist(s)
- BMP Inventory
  - All new permittee-owned & private
  - All existing high priority permittee owned & private
- Inspection frequency determination protocol
- Conduct inspections
  - Annual inspections of high priority BMPs
  - Document findings
  - Document compliance actions

Example Inspection Forms

- Generic Inspection Form
- Site Visit Inspection Log
- BMP Specific Inspection Forms
  - Infiltration basin
  - Bioretention
  - Permeable pavers
  - Dispersion
  - Biofiltration swale
  - Extended detention basin
  - Wet detention basin

Inspection Guidance

- Pre-field investigation
  - As-builts
  - O&M manual
  - Previous inspection records
- Identify & obtain equipment
  - Field maps
  - Standard inspection form
  - Recommended maintenance table
  - Camera
  - PPE
  - Measuring tape
  - Manhole cover pick tool
  - Log book
- Consider site access requirements

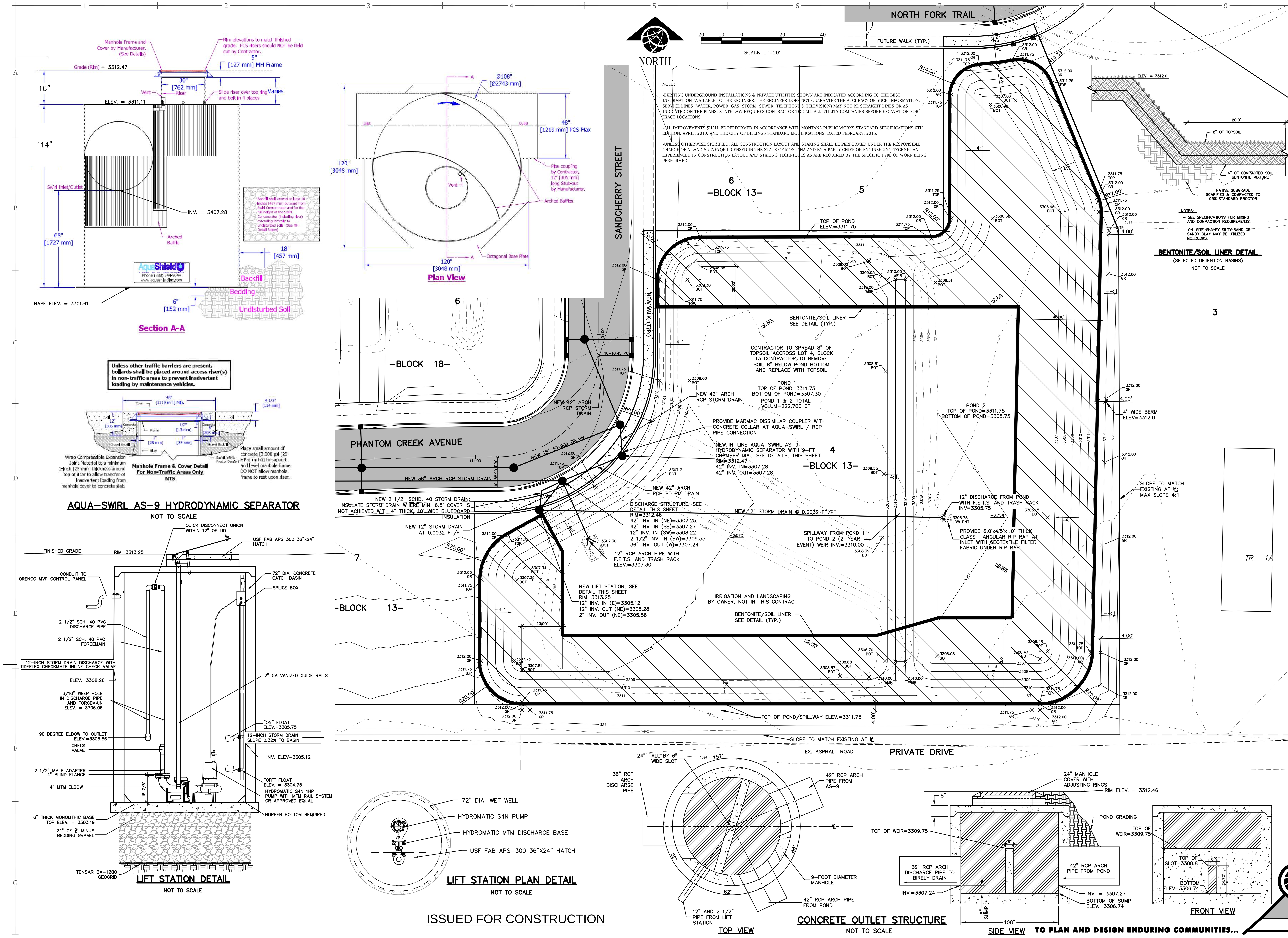
Inspection Guidance

Inspection Guidance

- Site inspection
  - Consider time since last runoff event
  - Take photos
  - Fill out inspection form
  - Note deficiencies and maintenance requirements
- Documentation
  - Organized recordkeeping procedures
- Follow-up if necessary
  - Compliance requirements (implement ERP)

SITE VISIT

- Trails West Subdivision
- Pond and Hydrodynamic Separator



ISSUED FOR CONSTRUCTION

TO PLAN AND DESIGN ENDURING COMMUNITIES...

SANDERSON STEWART

www.sandersonstewart.com

MONTANA GARY T. OWEN 15378PE 5/13/16 LICENSED PROFESSIONAL ENGINEER

DATE: 04/15/2016

FILE: 05051_15_GRADING_PROD.DWG

PROJECT NO: 05051.15

CAD: CMK

QUALITY ASSURANCE: DDR 04/13/16

REVISIONS

DATE	DESCRIPTION
04/19/16	CITY REVIEW
6/16/16	ISSUED FOR CONSTRUCTION
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

PRIVATE CONTRACT NO. 712

TO PROVIDE WATER, SANITARY SEWER, STORM DRAIN AND STREET IMPROVEMENTS FOR TRAILS WEST SUBDIVISION, 3RD FILING

BILLINGS, MONTANA

STORMWATER DETENTION POND PLAN

C14.0

Appendix K. 2019 Monitoring Results

Table A-1. Comprehensive Summary of All Monitoring Results

Monitoring Site ID	Receiving Waterbody	Location Type	Sampling Period	Sample Date	TSS (mg/l)	TN (mg/l)	TP (mg/l)	Copper (mg/l)	Lead (mg/l)	Zinc (mg/l)	Oil & Grease (mg/l)	pH	Organics (COD) (mg/l)	Water Temperature (°C)
001A 3rd Ave N. & N. 9th St	Yellowstone River	Primarily Commercial	1st Half 2017	4/21/2017	183.0	4.459	0.823	0.033	0.0960	0.2356	-	8.1	226.0	-
			2nd Half 2017	-	-	-	-	-	-	-	-	-	-	-
			1st Half 2018	4/23/2018	305.0	2.004	0.463	0.035	0.0220	0.2340	2.0	8.7	138.0	9.7
			2nd Half 2018	-	-	-	-	-	-	-	-	-	-	-
			1st Half 2019	-	-	-	-	-	-	-	-	-	-	-
			2nd Half 2019	-	-	-	-	-	-	-	-	-	-	-
			1st Half 2020											
			2nd Half 2020											
			1st Half 2021											
			2nd Half 2021											
			Long-term Median Concentration		*244.0*	*3.232*	*0.643*	*0.034*	*0.0590*	*0.2348*	*2.0*	*8.4*	*182.0*	*9.7*
002A Maier Road V-Ditch	Yellowstone River	Primarily Residential	1st Half 2017	-										
			2nd Half 2017	-										
			1st Half 2018	6/17/2018	460.0	8.600	0.432	0.019	0.0100	0.2980	*ND*	7.7	60.0	16.0
			2nd Half 2018	-										
			1st Half 2019	-										
			2nd Half 2019	-										
			1st Half 2020											
			2nd Half 2020											
			1st Half 2021											
			2nd Half 2021											
			Long-term Median Concentration		*460.0*	*8.600*	*0.432*	*0.019*	*0.0100*	*0.2980*	-	*7.7*	*60.0*	*16.0*
001B Johnson Ln & Old Hardin Road Catch Basin	Yellowstone River	Primarily Commercial	1st Half 2017	-										
			2nd Half 2017	-										
			1st Half 2018	6/17/2018	442.0	6.000	0.950	0.033	0.0153	0.3760	2.0	7.4	226.0	15.0
			2nd Half 2018	-										
			1st Half 2019	-										
			2nd Half 2019	10/22/2019	*NT*	12.600	1.200	0.080	0.0346	1.0400	*NT*	7.9	609.0	18.0
			1st Half 2020											
			2nd Half 2020											
			1st Half 2021											
			2nd Half 2021											
			Long-term Median Concentration		*442.0*	*9.300*	*1.075*	*0.057*	*0.0250*	*0.7080*	*2.0*	*7.7*	*417.5*	*16.5*
002B Unnamed Creek & HWY 87	Yellowstone River	Primarily Residential	1st Half 2017	-										
			2nd Half 2017	-										
			1st Half 2018	-										
			2nd Half 2018	-										
			1st Half 2019	-										
			2nd Half 2019	12/23/2019	1120.0	6.900	1.610	0.091	0.0457	0.6880	1.0	8.2	484.0	13.0
			1st Half 2020											
			2nd Half 2020											
			1st Half 2021											
			2nd Half 2021											
			Long-term Median Concentration		*1120.0*	*6.900*	*1.610*	*0.091*	*0.0457*	*0.6880*	*1.0*	*8.2*	*484.0*	*13.0*

ND = Parameter not detected at reporting limit
NT = Laboratory testing not performed

ANALYTICAL SUMMARY REPORT

October 31, 2019

Yellowstone County Public Works
PO Box 35024
Billings, MT 59107-5024

Work Order: B19101920

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Yellowstone County Public Works on 10/22/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B19101920-001	Johnson Lane Catch Basin	10/22/19 12:42	10/22/19	Aqueous	Metals by ICP/ICPMS, Total Chemical Oxygen Demand Nitrogen, Nitrate + Nitrite Nitrogen, Total Kjeldahl Nitrogen, Total (TKN+NO3+NO2) pH Metals Digestion by E200.2 Preparation for COD testing HACH 8000 E365.1 Digestion, Total P TKN preparation E351.2 Phosphorus, Total Turbidity

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works
Project: Not Indicated
Lab ID: B19101920-001
Client Sample ID: Johnson Lane Catch Basin

Report Date: 10/31/19
Collection Date: 10/22/19 12:42
DateReceived: 10/22/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.	H	0.1		A4500-H B	10/23/19 12:36 / pjw
pH Measurement Temp	18	C				A4500-H B	10/23/19 12:36 / pjw
Turbidity	2130	NTU		0.1		A2130 B	10/22/19 18:29 / pjw
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	609	mg/L	D	50		E410.4	10/25/19 13:45 / mas
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	1.61	mg/L		0.01		E353.2	10/23/19 09:51 / srh
Nitrogen, Kjeldahl, Total as N	11.0	mg/L		0.5		E351.2	10/24/19 14:32 / zas
Nitrogen, Total	12.6	mg/L		0.5		Calculation	10/25/19 08:29 / ks
Phosphorus, Total as P	1.20	mg/L	D	0.01		E365.1	10/28/19 13:20 / zas
METALS, TOTAL							
Copper	0.080	mg/L		0.002		E200.8	10/29/19 01:56 / car
Lead	0.0346	mg/L		0.0003		E200.8	10/29/19 01:56 / car
Zinc	1.04	mg/L		0.008		E200.8	10/29/19 01:56 / car

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A2130 B**										Batch: 191022A-TURB-W
Lab ID: **MBLK (DI H2O)**		Method Blank				Run: HACH2100N_191022A				10/22/19 18:28
Turbidity		ND	NTU	0.08						
Lab ID: **Turb - 20 NTU**		Laboratory Control Sample				Run: HACH2100N_191022A				10/22/19 18:28
Turbidity		20.8	NTU	0.10	104	90	110			
Lab ID: **Turb - 1.0 NTU**		Laboratory Control Sample				Run: HACH2100N_191022A				10/22/19 18:29
Turbidity		1.04	NTU	0.10	104	90	110			
Lab ID: **B19101920-001ADUP**		Sample Duplicate				Run: HACH2100N_191022A				10/22/19 18:30
Turbidity		2150	NTU	0.10				0.6	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B										Analytical Run: PHSC _101-B_191023A
Lab ID: pH 8	2	Initial Calibration Verification Standard								10/23/19 09:27
pH		8.05	s.u.	0.10	101	98	102			
pH Measurement Temp		20.6	C			0	0			
Method: A4500-H B										Batch: R329620
Lab ID: B19101862-001ADUP	2	Sample Duplicate				Run: PHSC _101-B_191023A				10/23/19 12:15
pH		6.21	s.u.	0.10				0.0	3	
pH Measurement Temp		16.6	C							
Lab ID: B19101922-001ADUP	2	Sample Duplicate				Run: PHSC _101-B_191023A				10/23/19 12:52
pH		7.21	s.u.	0.10				0.1	3	
pH Measurement Temp		18.6	C							

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E351.2										Analytical Run: FIA204-B_191024A
Lab ID: ICV		Initial Calibration Verification Standard								10/24/19 11:00
Nitrogen, Kjeldahl, Total as N		9.81	mg/L	0.50	98	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/24/19 14:04
Nitrogen, Kjeldahl, Total as N		10.1	mg/L	0.50	101	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/24/19 14:37
Nitrogen, Kjeldahl, Total as N		9.91	mg/L	0.50	99	90	110			
Method: E351.2										Batch: 138445
Lab ID: MB-138445		Method Blank				Run: FIA204-B_191024A				10/24/19 14:23
Nitrogen, Kjeldahl, Total as N		ND	mg/L	0.2						
Lab ID: LCS-138445		Laboratory Control Sample				Run: FIA204-B_191024A				10/24/19 14:24
Nitrogen, Kjeldahl, Total as N		9.21	mg/L	0.50	92	90	110			
Lab ID: B19101900-003BMS		Sample Matrix Spike				Run: FIA204-B_191024A				10/24/19 14:26
Nitrogen, Kjeldahl, Total as N		9.84	mg/L	0.50	98	90	110			
Lab ID: B19101900-003BMSD		Sample Matrix Spike Duplicate				Run: FIA204-B_191024A				10/24/19 14:27
Nitrogen, Kjeldahl, Total as N		9.69	mg/L	0.50	97	90	110	1.5	10	
Lab ID: B19101934-001CMS		Sample Matrix Spike				Run: FIA204-B_191024A				10/24/19 14:34
Nitrogen, Kjeldahl, Total as N		9.72	mg/L	0.50	95	90	110			
Lab ID: B19101934-001CMSD		Sample Matrix Spike Duplicate				Run: FIA204-B_191024A				10/24/19 14:35
Nitrogen, Kjeldahl, Total as N		9.84	mg/L	0.50	96	90	110	1.2	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2										Analytical Run: FIA203-B_191023B
Lab ID: ICV		Initial Calibration Verification Standard								10/23/19 09:33
Nitrogen, Nitrate+Nitrite as N		0.564	mg/L	0.010	100	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/23/19 09:55
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Method: E353.2										Batch: R329629
Lab ID: MBLK		Method Blank				Run: FIA203-B_191023B				10/23/19 09:34
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.009						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA203-B_191023B				10/23/19 09:35
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.010	104	90	110			
Lab ID: B19101747-001AMS		Sample Matrix Spike				Run: FIA203-B_191023B				10/23/19 09:41
Nitrogen, Nitrate+Nitrite as N		1.08	mg/L	0.010	105	90	110			
Lab ID: B19101747-001AMSD		Sample Matrix Spike Duplicate				Run: FIA203-B_191023B				10/23/19 09:42
Nitrogen, Nitrate+Nitrite as N		1.09	mg/L	0.010	105	90	110	0.7	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E365.1										Analytical Run: FIA202-B_191028B
Lab ID: ICV		Initial Calibration Verification Standard								10/28/19 12:42
Phosphorus, Total as P		0.519	mg/L	0.0050	104	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/28/19 13:01
Phosphorus, Total as P		0.514	mg/L	0.0050	103	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/28/19 13:21
Phosphorus, Total as P		0.509	mg/L	0.0050	102	90	110			
Method: E365.1										Batch: 138452
Lab ID: MB-138452		Method Blank				Run: FIA202-B_191028B				10/28/19 12:45
Phosphorus, Total as P		ND	mg/L	0.004						
Lab ID: LCS-138452		Laboratory Control Sample				Run: FIA202-B_191028B				10/28/19 12:46
Phosphorus, Total as P		0.194	mg/L	0.0050	97	90	110			
Lab ID: B19101749-001CMS		Sample Matrix Spike				Run: FIA202-B_191028B				10/28/19 12:48
Phosphorus, Total as P		0.220	mg/L	0.0050	99	90	110			
Lab ID: B19101749-001CMSD		Sample Matrix Spike Duplicate				Run: FIA202-B_191028B				10/28/19 12:50
Phosphorus, Total as P		0.219	mg/L	0.0050	99	90	110	0.5	10	
Lab ID: B19101934-001CMS		Sample Matrix Spike				Run: FIA202-B_191028B				10/28/19 13:04
Phosphorus, Total as P		0.203	mg/L	0.0050	97	90	110			
Lab ID: B19101934-001CMSD		Sample Matrix Spike Duplicate				Run: FIA202-B_191028B				10/28/19 13:05
Phosphorus, Total as P		0.207	mg/L	0.0050	99	90	110	2.0	10	
Lab ID: B19102007-003EMS		Sample Matrix Spike				Run: FIA202-B_191028B				10/28/19 13:17
Phosphorus, Total as P		0.236	mg/L	0.0050	99	90	110			
Lab ID: B19102007-003EMSD		Sample Matrix Spike Duplicate				Run: FIA202-B_191028B				10/28/19 13:18
Phosphorus, Total as P		0.239	mg/L	0.0050	100	90	110	1.3	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/30/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E410.4										Analytical Run: SPEC3_191025A
Lab ID: CCV		Continuing Calibration Verification Standard								10/25/19 13:45
Oxygen Demand, Chemical (COD)		48.0	mg/L	5.0	96	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								10/25/19 13:45
Oxygen Demand, Chemical (COD)		50.1	mg/L	5.0	100	90	110			
Method: E410.4										Batch: 138562
Lab ID: MB-138562		Method Blank				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		ND	mg/L	3						
Lab ID: LCS-138562		Laboratory Control Sample				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		23.9	mg/L	5.0	98	90	110			
Lab ID: B19101860-001BMS		Sample Matrix Spike				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		86.8	mg/L	5.0	103	90	110			
Lab ID: B19101860-001BMSD		Sample Matrix Spike Duplicate				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		86.8	mg/L	5.0	103	90	110	0.0	10	
Lab ID: B19102133-002CMS		Sample Matrix Spike				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		48.2	mg/L	5.0	107	90	110			
Lab ID: B19102133-002CMSD		Sample Matrix Spike Duplicate				Run: SPEC3_191025A				10/25/19 13:45
Oxygen Demand, Chemical (COD)		48.4	mg/L	5.0	107	90	110	0.3	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19101920 **Report Date:** 10/31/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**										Analytical Run: ICPMS208-B_191028A
Lab ID: **QCS**	3	Initial Calibration Verification Standard								10/29/19 03:29
Copper		0.0500	mg/L	0.010	100	90	110			
Lead		0.0464	mg/L	0.010	93	90	110			
Zinc		0.0509	mg/L	0.010	102	90	110			
Method: **E200.8**										Batch: 138507
Lab ID: **MB-138507**	3	Method Blank				Run: ICPMS208-B_191028A				10/29/19 01:47
Copper		ND	mg/L	0.0004						
Lead		ND	mg/L	0.00009						
Zinc		ND	mg/L	0.005						
Lab ID: **LCS4-138507**	3	Laboratory Control Sample				Run: ICPMS208-B_191028A				10/29/19 01:52
Copper		0.0972	mg/L	0.0050	97	85	115			
Lead		0.0935	mg/L	0.0010	94	85	115			
Zinc		0.101	mg/L	0.010	101	85	115			
Lab ID: **B19102032-001AMS4**	3	Sample Matrix Spike				Run: ICPMS208-B_191028A				10/29/19 02:14
Copper		0.105	mg/L	0.0050	90	70	130			
Lead		0.0933	mg/L	0.0010	93	70	130			
Zinc		0.118	mg/L	0.010	96	70	130			
Lab ID: **B19102032-001AMSD4**	3	Sample Matrix Spike Duplicate				Run: ICPMS208-B_191028A				10/29/19 02:19
Copper		0.107	mg/L	0.0050	92	70	130	1.9	20	
Lead		0.0944	mg/L	0.0010	94	70	130	1.2	20	
Zinc		0.117	mg/L	0.010	96	70	130	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Yellowstone County Public Works

B19101920

Login completed by: Richard L. Shular
Date Received: 10/22/2019
Reviewed by: BL2000\darcy
Received by: tae
Reviewed Date: 10/23/2019
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	8.1°C No Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The samples for Total Metals were preserved to pH <2 with 2 mL of nitric acid per 250 mL in the laboratory. In accordance with the Clean Water Act, these Metals samples must be held for 24 hours prior to analysis.

The sample for Nutrients was received at pH >2. Sulfuric acid(2 mL) was added in the laboratory to preserve to pH <2.

ENERGY
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page _____ of _____

Account Information (Billing information)

Company/Name	Yellowstone County
Contact	Mike Black
Phone	208-0553
Mailing Address	PO Box 35024
City, State, Zip	Billings MT, 59107
Email	mblack@co.yellowstone.mt.gov
Receive Invoice ☐Hard Copy ☐Email	Receive Report ☐Hard Copy ☐Email
Purchase Order / Quote / Bottle Order	

Report Information (if different than Account Information)

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report ☐Hard Copy ☐Email	

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	
Sampler Name	Sampler Phone
Sample Origin State	EPA/State Compliance ☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Analysis Requested	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	Johnson Lane Catch basin	~~12/22~~ 10/22/19	12:42				J		B19101920-001
2									
3									
4									
5									
6									
7									
8									
9									
10									

See Attached

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Mike Black	10/22/19 1:14pm				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Tabitha Edwards	10-22-19 13:14	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp 8.1 °C	Temp Blank (Y) N	On Ice Y (N)	Payment Type CC Cash Check_____	Amount $	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-12/16 v.1

BOTTLE ORDER 136179

SHIPPED TO: Yellowstone County Public Works

Contact: Mike Black

Order Created by: Tabitha Edwards
Shipped From: Billings, MT
Ship Date: 9/11/2019
VIA: PickUp

Phone: (406) 256-2735
Project: MS4

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
Water Samples (3 Sets)							
250 mL Plastic	1	A4500-H B	pH	0.25 hrs			1
		A2130 B	Turbidity	48.00 hrs			
250 mL Plastic	1	E200.7_8	Metals by ICP/ICPMS, Total		■ HNO3	Cu, Pb, Zn	1
500 mL Plastic	1	E410.4	Chemical Oxygen Demand		☐ H2SO4		1
		E353.2	Nitrogen, Nitrate + Nitrite				
		Calculation	Nitrogen, Total (TKN+NO3+NO2)				
		E351.2	Nitrogen, Total Kjeldahl				
		E365.1	Phosphorus, Total				
~~1 Liter Clear Glass~~ Narrow Mouth	~~2~~	~~E1664A~~	~~Oil & Grease, Gravimetric~~		☐ H2SO4		1
~~1 Liter Plastic Wide~~ Mouth	1	A2540 D	Solids, Total Suspended				1

■ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide

■ ■ ☐

ZnAc - Zinc Acetate	HCl - Hydrochloric Acid	H3PO4 - Phosphoric Acid	**We strongly suggest that the samples are shipped the same day as they are collected.**

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets

Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ANALYTICAL SUMMARY REPORT

December 23, 2019

Yellowstone County Public Works
PO Box 35024
Billings, MT 59107-5024

Work Order: B19121265

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Yellowstone County Public Works on 12/13/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B19121265-001	Unnamed Creek & Hwy 87	12/13/19 9:50	12/13/19	Aqueous	Metals by ICP/ICPMS, Total Chemical Oxygen Demand Oil & Grease, Gravimetric Nitrogen, Nitrate + Nitrite Nitrogen, Total Kjeldahl Nitrogen, Total (TKN+NO3+NO2) pH Metals Digestion by E200.2 Preparation for COD testing HACH 8000 E365.1 Digestion, Total P TKN preparation E351.2 Preparation for TSS A2540 D Phosphorus, Total Solids, Total Suspended Turbidity

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

CLIENT: Yellowstone County Public Works
Project: Not Indicated
Work Order: B19121265

Report Date: 12/23/19

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works
Project: Not Indicated
Lab ID: B19121265-001
Client Sample ID: Unnamed Creek & Hwy 87

Report Date: 12/23/19
Collection Date: 12/13/19 09:50
DateReceived: 12/13/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.	H	0.1		A4500-H B	12/16/19 12:19 / pjw
pH Measurement Temp	13	C				A4500-H B	12/16/19 12:19 / pjw
Turbidity	2550	NTU		0.1		A2130 B	12/13/19 14:28 / pjw
Solids, Total Suspended TSS @ 105 C	1120	mg/L	D	20		A2540 D	12/13/19 12:06 / drm
AGGREGATE ORGANICS							
Oxygen Demand, Chemical (COD)	484	mg/L	D	20		E410.4	12/17/19 14:07 / mas
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.33	mg/L		0.01		E353.2	12/16/19 15:52 / srh
Nitrogen, Kjeldahl, Total as N	6.6	mg/L		0.5		E351.2	12/18/19 15:49 / zas
Nitrogen, Total	6.9	mg/L		0.5		Calculation	12/19/19 10:57 / bas
Phosphorus, Total as P	1.61	mg/L	D	0.01		E365.1	12/19/19 12:18 / zas
METALS, TOTAL							
Copper	0.091	mg/L		0.002		E200.8	12/20/19 05:52 / car
Lead	0.0457	mg/L		0.0003		E200.8	12/20/19 05:52 / car
Zinc	0.688	mg/L	D	0.009		E200.8	12/20/19 05:52 / car
ORGANIC CHARACTERISTICS							
Oil & Grease (HEM)	1	mg/L		1		E1664A	12/23/19 08:15 / eli-g

- The pH of the sample at the time of E1664A analysis was >2. Additional preservative was added prior to analysis.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A2130 B**										Batch: 191213A-TURB-W
Lab ID: **MBLK (DI H2O)**	Method Blank					Run: HACH2100N_191213A				12/13/19 14:24
Turbidity		0.09	NTU	0.08						
Lab ID: **Turb - 20 NTU**	Laboratory Control Sample					Run: HACH2100N_191213A				12/13/19 14:25
Turbidity		19.8	NTU	0.10	99	90	110			
Lab ID: **Turb - 1.0 NTU**	Laboratory Control Sample					Run: HACH2100N_191213A				12/13/19 14:25
Turbidity		1.01	NTU	0.10	101	90	110			
Lab ID: **B19121265-001ADUP**	Sample Duplicate					Run: HACH2100N_191213A				12/13/19 14:29
Turbidity		2584	NTU	0.10				1.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A2540 D**										Batch: 140116
Lab ID: **MB-140116**		Method Blank				Run: BAL #SD-15_191213A				12/13/19 12:05
Solids, Total Suspended TSS @ 105 C		ND	mg/L							
Lab ID: **LCS-140116**		Laboratory Control Sample				Run: BAL #SD-15_191213A				12/13/19 12:05
Solids, Total Suspended TSS @ 105 C		94.0	mg/L	10	94	80	120			
Lab ID: **B19121186-002BDUP**		Sample Duplicate				Run: BAL #SD-15_191213A				12/13/19 12:05
Solids, Total Suspended TSS @ 105 C		38.7	mg/L	10				3.5	5	
Lab ID: **B19121239-002BDUP**		Sample Duplicate				Run: BAL #SD-15_191213A				12/13/19 12:06
Solids, Total Suspended TSS @ 105 C		40.0	mg/L	10				2.0	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B										Analytical Run: PHSC _101-B_191216A
Lab ID: pH 8	2	Initial Calibration Verification Standard								12/16/19 09:23
pH		8.04	s.u.	0.10	100	98	102			
pH Measurement Temp		20.1	C			0	0			
Method: A4500-H B										Batch: R332360
Lab ID: B19121294-001ADUP	2	Sample Duplicate				Run: PHSC _101-B_191216A				12/16/19 12:00
pH		7.18	s.u.	0.10				0.1	3	
pH Measurement Temp		11.8	C							

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E351.2										Analytical Run: FIA204-B_191218A
Lab ID: ICV		Initial Calibration Verification Standard								12/18/19 14:32
Nitrogen, Kjeldahl, Total as N		9.21	mg/L	0.50	92	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/18/19 15:41
Nitrogen, Kjeldahl, Total as N		10.4	mg/L	0.50	104	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/18/19 15:57
Nitrogen, Kjeldahl, Total as N		10.4	mg/L	0.50	104	90	110			
Method: E351.2										Batch: 140212
Lab ID: MB-140212		Method Blank				Run: FIA204-B_191218A				12/18/19 15:38
Nitrogen, Kjeldahl, Total as N		ND	mg/L	0.2						
Lab ID: LCS-140212		Laboratory Control Sample				Run: FIA204-B_191218A				12/18/19 15:39
Nitrogen, Kjeldahl, Total as N		11.0	mg/L	0.50	110	90	110			
Lab ID: B19121125-001AMS		Sample Matrix Spike				Run: FIA204-B_191218A				12/18/19 15:43
Nitrogen, Kjeldahl, Total as N		11.0	mg/L	0.50	105	90	110			
Lab ID: B19121125-001AMSD		Sample Matrix Spike Duplicate				Run: FIA204-B_191218A				12/18/19 15:44
Nitrogen, Kjeldahl, Total as N		11.4	mg/L	0.50	109	90	110	3.6	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2										Analytical Run: FIA203-B_191216A
Lab ID: ICV		Initial Calibration Verification Standard								12/16/19 09:32
Nitrogen, Nitrate+Nitrite as N		0.562	mg/L	0.010	99	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/16/19 15:45
Nitrogen, Nitrate+Nitrite as N		0.982	mg/L	0.010	98	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/16/19 16:02
Nitrogen, Nitrate+Nitrite as N		0.987	mg/L	0.010	99	90	110			
Method: E353.2										Batch: R332382
Lab ID: MBLK		Method Blank				Run: FIA203-B_191216A				12/16/19 09:33
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.006						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA203-B_191216A				12/16/19 09:34
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Lab ID: B19121228-008CMS		Sample Matrix Spike				Run: FIA203-B_191216A				12/16/19 16:25
Nitrogen, Nitrate+Nitrite as N		32.0	mg/L	0.10	110	90	110			
Lab ID: B19121228-008CMSD		Sample Matrix Spike Duplicate				Run: FIA203-B_191216A				12/16/19 16:26
Nitrogen, Nitrate+Nitrite as N		31.6	mg/L	0.10	106	90	110	1.2	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E365.1										Analytical Run: FIA202-B_191219A
Lab ID: ICV		Initial Calibration Verification Standard								12/19/19 11:24
Phosphorus, Total as P		0.512	mg/L	0.0050	102	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/19/19 12:04
Phosphorus, Total as P		0.526	mg/L	0.0050	105	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/19/19 12:22
Phosphorus, Total as P		0.527	mg/L	0.0050	105	90	110			
Method: E365.1										Batch: 140248
Lab ID: MB-140248		Method Blank				Run: FIA202-B_191219A				12/19/19 12:02
Phosphorus, Total as P		ND	mg/L	0.004						
Lab ID: LCS-140248		Laboratory Control Sample				Run: FIA202-B_191219A				12/19/19 12:03
Phosphorus, Total as P		0.201	mg/L	0.0050	100	90	110			
Lab ID: B19121153-002CMS		Sample Matrix Spike				Run: FIA202-B_191219A				12/19/19 12:09
Phosphorus, Total as P		0.201	mg/L	0.0050	100	90	110			
Lab ID: B19121153-002CMSD		Sample Matrix Spike Duplicate				Run: FIA202-B_191219A				12/19/19 12:10
Phosphorus, Total as P		0.199	mg/L	0.0050	100	90	110	1.0	10	
Lab ID: B19121496-001CMS		Sample Matrix Spike				Run: FIA202-B_191219A				12/19/19 12:20
Phosphorus, Total as P		0.243	mg/L	0.0050	104	90	110			
Lab ID: B19121496-001CMSD		Sample Matrix Spike Duplicate				Run: FIA202-B_191219A				12/19/19 12:21
Phosphorus, Total as P		0.241	mg/L	0.0050	103	90	110	0.8	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E410.4										Analytical Run: SPEC3_191217B
Lab ID: CCV		Continuing Calibration Verification Standard								12/17/19 14:07
Oxygen Demand, Chemical (COD)		53.5	mg/L	5.0	107	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								12/17/19 14:07
Oxygen Demand, Chemical (COD)		50.3	mg/L	5.0	101	90	110			
Method: E410.4										Batch: 140207
Lab ID: MB-140207		Method Blank				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		ND	mg/L	3						
Lab ID: LCS-140207		Laboratory Control Sample				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		26.8	mg/L	5.0	110	90	110			
Lab ID: B19121310-001CMS		Sample Matrix Spike				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		34.4	mg/L	5.0	105	90	110			
Lab ID: B19121310-001CMSD		Sample Matrix Spike Duplicate				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		36.0	mg/L	5.0	111	90	110	4.5	10	S
Lab ID: B19121310-004CMS		Sample Matrix Spike				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		36.6	mg/L	5.0	101	90	110			
Lab ID: B19121310-004CMSD		Sample Matrix Spike Duplicate				Run: SPEC3_191217B				12/17/19 14:07
Oxygen Demand, Chemical (COD)		36.0	mg/L	5.0	99	90	110	1.7	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**									Analytical Run: ICPMS208-B_191218A	
Lab ID: **QCS**	3	Initial Calibration Verification Standard							12/20/19 01:32	
Copper		0.0509	mg/L	0.010	102	90	110			
Lead		0.0476	mg/L	0.010	95	90	110			
Zinc		0.0499	mg/L	0.010	100	90	110			
Method: **E200.8**									Batch: 140138	
Lab ID: **MB-140138**	3	Method Blank				Run: ICPMS208-B_191218A			12/20/19 04:36	
Copper		ND	mg/L	0.0004						
Lead		ND	mg/L	0.00009						
Zinc		ND	mg/L	0.005						
Lab ID: **LCS4-140138**	3	Laboratory Control Sample				Run: ICPMS208-B_191218A			12/20/19 04:41	
Copper		0.0949	mg/L	0.0050	95	85	115			
Lead		0.0936	mg/L	0.0010	94	85	115			
Zinc		0.0974	mg/L	0.010	97	85	115			
Lab ID: **B19121143-003CMS4**	3	Sample Matrix Spike				Run: ICPMS208-B_191218A			12/20/19 04:54	
Copper		0.0985	mg/L	0.0050	95	70	130			
Lead		0.0944	mg/L	0.0010	94	70	130			
Zinc		0.128	mg/L	0.010	91	70	130			
Lab ID: **B19121143-003CMSD**	3	Sample Matrix Spike Duplicate				Run: ICPMS208-B_191218A			12/20/19 04:58	
Copper		0.101	mg/L	0.0050	97	70	130	3.7	20	
Lead		0.0951	mg/L	0.0010	95	70	130	1.0	20	
Zinc		0.127	mg/L	0.010	90	70	130	2.6	20	
Lab ID: **B19121314-001AMS4**	3	Sample Matrix Spike				Run: ICPMS208-B_191218A			12/20/19 06:01	
Copper		0.107	mg/L	0.0050	97	70	130			
Lead		0.0951	mg/L	0.0010	94	70	130			
Zinc		0.1000	mg/L	0.010	95	70	130			
Lab ID: **B19121314-001AMSD**	3	Sample Matrix Spike Duplicate				Run: ICPMS208-B_191218A			12/20/19 06:05	
Copper		0.111	mg/L	0.0050	101	70	130	2.9	20	
Lead		0.0998	mg/L	0.0010	99	70	130	4.4	20	
Zinc		0.0998	mg/L	0.010	95	70	130	3.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Gillette, WY Branch

Client: Yellowstone County Public Works **Work Order:** B19121265 **Report Date:** 12/23/19

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A									Batch: 191223A
Lab ID: MBLK1912230750	Method Blank				Run: BAL-ACCU-124_191223A				12/23/19 08:10
Oil & Grease (HEM)	ND	mg/L	0.7						
Lab ID: LCS1912230750	Laboratory Control Sample				Run: BAL-ACCU-124_191223A				12/23/19 08:11
Oil & Grease (HEM)	33	mg/L	5.0	83	78	114			
Lab ID: LCSD1912230750	Laboratory Control Sample Duplicate				Run: BAL-ACCU-124_191223A				12/23/19 08:11
Oil & Grease (HEM)	33	mg/L	5.0	82	78	114	1.8	18	
Lab ID: G19120250-001CMS	Sample Matrix Spike				Run: BAL-ACCU-124_191223A				12/23/19 08:11
Oil & Grease (HEM)	28	mg/L	5.0	67	78	114			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Work Order Receipt Checklist

Yellowstone County Public Works

B19121265

Login completed by: Briana G. Sangiuliano
Date Received: 12/13/2019
Reviewed by: BL2000\lcadreau
Received by: sso
Reviewed Date: 12/16/2019
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The sample for Nutrients and Total Metals was received at pH >2. Preservation was not attempted due to matrix.

ENERGY LABORATORIES
Trust our People. Trust our Data

Chain of Custody & Analytical Request Record

www.energylab.com

Page _____ of _____

Account Information (Billing information)

Company/Name	Yellowstone County
Contact	Mike Black
Phone	254-7926
Mailing Address	PO Box 35024
City, State, Zip	Billings MT 59106
Email	mblack@co.yellowstone.mt.gov
Receive Invoice	☒ Hard Copy ☒ Email
Receive Report	☐ Hard Copy ☒ Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	
Contact	
Phone	
Mailing Address	
City State, Zip	
Email	
Receive Report	☐ Hard Copy ☐ Email
Special Report/Formats	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other

Comments

Project Information

Project Name, PWSID, Permit, etc.	
Sampler Name	Sampler Phone
Sample Origin State	EPA/State Compliance ☐ Yes ☐ No

MINING CLIENTS: please indicate sample type
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V Vegetation
B Bioassay
O Other
DW Drinking Water

Analysis Requested

See Bottle Order

See Attached

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	unnamed creek & Hwy 87	12-13-19	9:50am	6			B19121265
2							
3							
4							
5							
6							
7							
8							
9							
10							

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Mike Black, PE	12-13-19 10:19				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Shane Jeffers	12/13/19 10:19	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check_____	Amount $	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

BOTTLE ORDER 136179

SHIPPED TO: Yellowstone County Public Works

Contact: Mike Black

Order Created by: Tabitha Edwards
Shipped From: Billings, MT
Ship Date: 9/11/2019
VIA: PickUp

Phone: (406) 256-2735

Project: MS4

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
Water Samples (3 Sets)							
250 mL Plastic	1	A4500-H B	pH	0.25 hrs			1
		A2130 B	Turbidity	48 00 hrs			
250 mL Plastic	1	E200 7_8	Metals by ICP/ICPMS, Total		■ HNO3	Cu, Pb, Zn	1
500 mL Plastic	1	E410 4	Chemical Oxygen Demand		☐ H2SO4		1
		E353 2	Nitrogen, Nitrate + Nitrite				
		Calculation	Nitrogen, Total (TKN+NO3+NO2)				
		E351.2	Nitrogen, Total Kjeldahl				
		E365.1	Phosphorus, Total				
1 Liter Clear Glass Narrow Mouth	2	E1664A	Oil & Grease, Gravimetric		☐ H2SO4		1
1 Liter Plastic Wide Mouth	1	A2540 D	Solids, Total Suspended				1

■ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide

■ ■ ☐

ZnAc - Zinc Acetate	HCl - Hydrochloric Acid	H3PO4 - Phosphoric Acid	**We strongly suggest that the samples are shipped the same day as they are collected.**

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets

Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.