

Montana Department of Transportation Municipal Separate Storm Sewer System Stormwater Management Program

DRAFT

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LIST OF ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Traffic
ARM	Administrative Rules of Montana
BMP	Best Management Practice
CAP	Investigation and Corrective Action Plan
CGP	Construction General Permit
COD	Chemical Oxygen Demand
CONST	Construction Site Storm Water Management
Cu	Total Copper
DEES	District Environmental Engineering Specialist
EES	Environmental Engineering Section Supervisor
EPM	Engineering Project Manager
ERP	Enforcement Response Plan
ESB	Environmental Services Bureau
FHWA	Federal Highway Administration
FPPP	Facility Pollution Prevention Plan
FSE	Field Services Engineer
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
MCA	Montana Code Annotated
MCM	Minimum Control Measure
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MEP	Maximum Extent Practicable
MEPA	Montana Environmental Policy Act
mg/L	milligrams per liter
MMS	Maintenance Management System
MPDES	Montana Pollutant Discharge Elimination System
MS4	Municipal Separate Storm Sewer System
NO ₃ /NO ₂	Nitrate + Nitrite
NPDES	National Pollutant Discharge Elimination System
Pb	Total Lead
PDE	Project Development Engineer
PEOIP	Public Education, Outreach, Involvement, and Participation
PESC	Permanent Erosion and Sediment Controls
PI	Public Information

POST	Post-Construction Site Storm Water Management
PPGH	Pollution Prevention and Good Housekeeping
PS&E	Plans, Specifications, and Estimates
ROW	Right-of-Way
SEES	Statewide Environmental Engineering Specialist
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasures
SWMP	Storm Water Management Program
SWPPP	Storm Water Pollution Prevention Plan
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TSS	Total Suspended Solids
VSS	Volatile Suspended Solids
Zn	Total Zinc

1. PERMIT COVERAGE

1.1 INTRODUCTION

This statewide Storm Water Management Program (SWMP) has been developed by the Montana Department of Transportation (MDT) to satisfy applicable requirements of the Montana Pollutant Discharge Elimination System (MPDES) permit for storm water discharges associated with small Municipal Separate Storm Sewer Systems (MS4s). MPDES permits are required for urban areas in Montana with storm sewer systems that serve populations of at least 10,000 people. Cities, counties, universities, military bases, and MDT are some of the entities required to obtain permit coverage. Currently, MDT is permitted in Billings, Great Falls, Missoula, Bozeman, Butte, Helena, and Kalispell. This SWMP identifies the management practices, control techniques, system designs, engineering practices, and other provisions necessary to reduce the discharge of pollutants from these permitted MS4s.

1.2 MUNICIPAL SEPARATE STORM SEWER

A municipal separate storm sewer is a conveyance or system of conveyances owned by a public entity that collects and conveys storm water to surface waters. This system does not provide treatment and is separate from the sanitary sewer. Storm water discharges occur when runoff from rain and snowmelt flows over land and impervious surfaces and is unable to percolate into the ground. This runoff picks up pollutants and transports them, untreated, to waterways via the storm sewer system.

1.2.1 Types of Pollutants

Stormwater pollutant discharges from roadway surfaces vary depending on the road size, amount and type of traffic, deicing practices, and roadside vegetation management. Pollutant sources include motor vehicles (including vehicle exhaust and splashes from vehicle undercarriages), pavement wear, maintenance activities, and construction activities. The Federal Highway Administration's (FHWA) FHWA-RD-88-008: *Pollutant Loadings and Impacts from Highway Stormwater Runoff Volume III: Analytical Investigation and Research Report* (FHWA, April 1990), provides an estimate of the median pollutant concentrations in highway runoff as shown in **Table 1-1** below.

Table 1-1: Median Highway Runoff Pollutant Concentrations

Pollutant	Urban Highway (ADT > 30,000) Pollutant Concentrations (mg/L)	Rural Highway (ADT < 30,000) Pollutant Concentrations (mg/L)
Total Suspended Solids (TSS)	142	41
Volatile Suspended Solids (VSS)	39	12
Total Organic Carbon (TOC)	25	8
Chemical Oxygen Demand (COD)	114	49
Nitrate + Nitrite (NO ₃ /NO ₂)	0.76	0.46
Total Kjeldahl Nitrogen (TKN)	1.83	0.87
Phosphorus as PO ₄	0.40	0.16
Total Copper (Cu)	0.054	0.022
Total Lead (Pb)	0.400	0.080
Total Zinc (Zn)	0.329	0.080

ADT = Average Daily Traffic

mg/L = milligrams per liter

1.2.2 Need for Controls

Because urbanization increases impervious surfaces (e.g., streets, sidewalks, buildings, parking lots, etc.), runoff and potential pollutant transport increases. Introduction of pollutants to the storm sewer system can also occur via illegal dumping, unpermitted discharges, and illicit connections. Uncontrolled, these discharges have the potential to impact waterways and threaten public health. Polluted stormwater can contribute to beach closings, fish-eating advisories, excess algae growth, and poor water clarity in receiving waters. Additionally, poorly managed urban stormwater can alter the natural flow and infiltration of water, scour stream banks, and harm aquatic organisms and ecosystems.

1.3 MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM

The Montana Department of Environmental Quality (MDEQ) administers the MPDES permit program to regulate storm water discharges associated with small MS4s. This permit program is authorized by Section 75-5-402, Montana Code Annotated (MCA) and the Administrative Rules of Montana (ARM) Title 17, Chapter 30, Subchapters 11, 12, and 13. The permit program also satisfies requirements of the National Pollutant Discharge Elimination System (NPDES) program under Section 402 of the federal Clean Water Act.

1.3.1 MS4 Regulatory Boundaries

The geographic areas regulated by the MDEQ under the MS4 program are identified in the definition of a “small MS4” as specified in ARM 17.30.1102(23). These regulated areas include:

- Small MS4s, and portions of them, that are located in the following urbanized areas, as determined by the latest decennial census by the United States Census Bureau:
 - 1) the City of Billings and Yellowstone County;
 - 2) the City of Missoula and Missoula County; and,
 - 3) the City of Great Falls and Cascade County.
- 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 urbanized area:
 - 1) MS4s located in the City of Bozeman;
 - 2) MS4s located in the City of Butte¹;
 - 3) MS4s located in the City of Helena; and,
 - 4) MS4s located in the City of Kalispell.
- MS4s designated by MDEQ pursuant to ARM 17.30.1107; and,
- 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.

1.3.2 Minimum Control Measures

In accordance with MS4 permit requirements, permittees must develop a written SWMP inclusive of the following six minimum control measures (MCM):

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement and Participation
- MCM 3: Illicit Discharge Detection and Elimination

¹ For Butte, the city and county governments are consolidated into a sole entity. As such, the MS4 regulatory boundary should encompass the municipal incorporated boundary and the sewer district area.

- MCM 4: Construction Site Storm Water Management
- MCM 5: Post-Construction Site Storm Water Management
- MCM 6: Pollution Prevention and Good Housekeeping

The underlying goals of these MCMs are described in **Section 2.1** of this report.

1.3.3 Pollutant Reduction Requirements

Under the MS4 permit, MDT is required to reduce the discharge of pollutants from the small MS4s to the maximum extent practicable (MEP). MEP is a statutory standard for the level of pollutant reduction that must be achieved through management practices, control techniques, and system design/engineering methods. MEP is achieved through the implementation of Best Management Practices (BMPs) that are selected, designed, installed, implemented, inspected, and maintained in accordance with good engineering, hydrologic, and pollutant control practices. These BMPs must be used to eliminate or minimize the migration of pollutants to surface waters consistent with the six MCMs listed above.

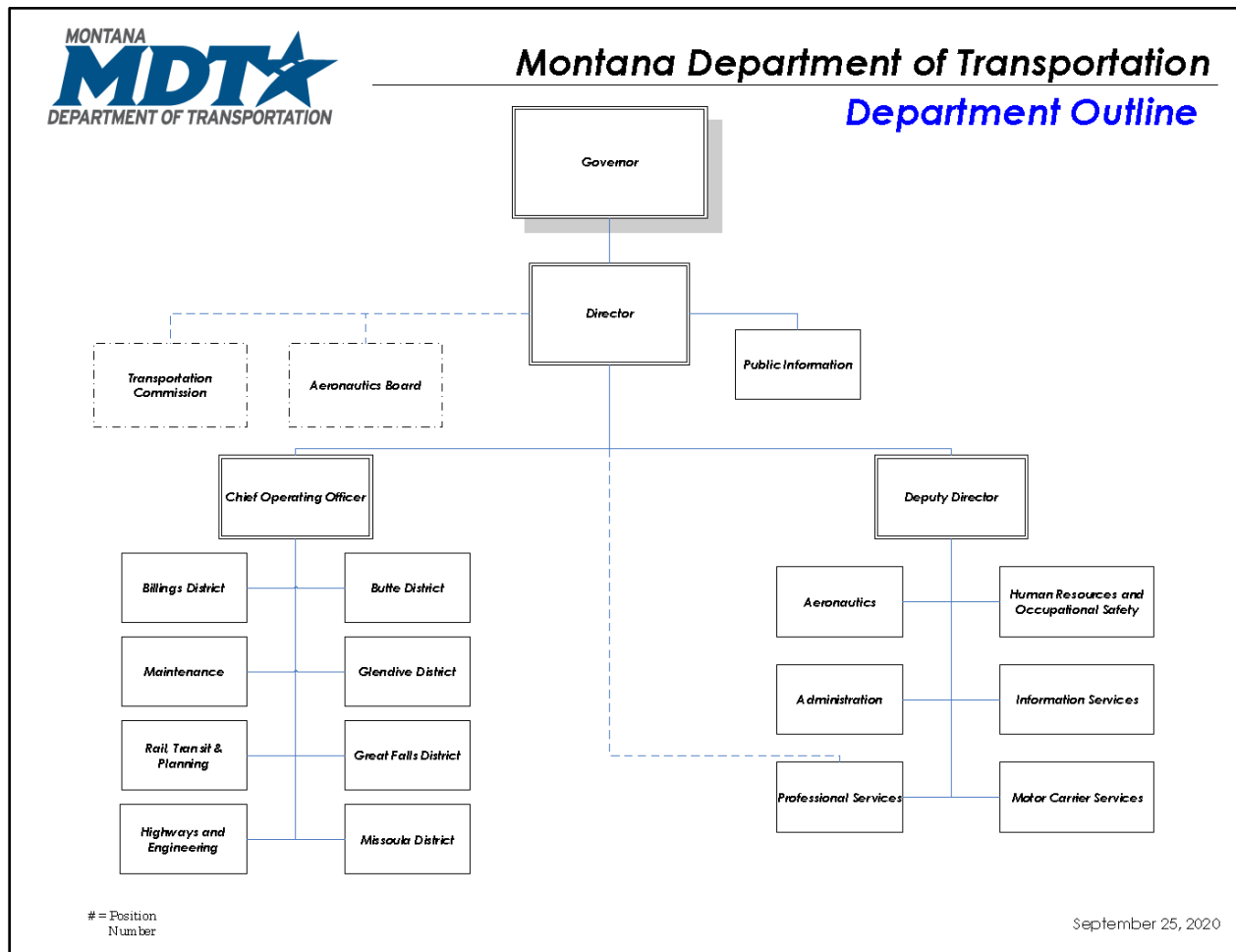
1.4 MONTANA DEPARTMENT OF TRANSPORTATION

MDT's mission is to plan, build, operate, and maintain a safe and resilient transportation infrastructure to move Montana forward.

1.4.1 MDT Organization

MDT, under the leadership of the Director, is organized into nine divisions headed by division administrators and five financial districts headed by district administrators. The division and district administrators operate under the Director, Deputy Director, and Chief Operating Officer as shown in **Figure 1-1** below. The Environmental Services Bureau (ESB) is in the Rail, Transit, and Planning Division and is tasked with managing MDT's statewide MS4 program. Environmental support for the MS4 program is also provided within each financial district by District Environmental Engineering Specialists (DEES), who report directly or indirectly to ESB.

Figure 1-1: MDT Department Outline



1.4.2 MS4 Permit History

In previous permit cycles, MDT worked with governmental entities to reach inter-local agreements in six of the designated MS4s to operate as co-permittees under the Small MS4 General Permit. In Billings, MDT held two MS4 general permit authorizations - one with the City of Billings and the other with Yellowstone County. In Helena, MDT was the sole permittee under the MS4 general permit. These interlocal agreements are no longer in effect.

MDT's interlocal agreements and co-permittee status ended during the 2015 permit renewal process when MDT made the decision to apply for an individual permit instead of seeking coverage under the MS4 general permit. An individual permit application was submitted in November 2014. MDEQ subsequently provided a notice of completeness for individual permit application MT0031844 and pursuant to ARM 17.30.1313 administratively extended MDT's 2010

MS4 general permit authorizations until such time an individual permit is issued. MDT's MS4 permit history is illustrated in **Figure 1-2** below.

Figure 1-2: MDT MS4 Permit History



1.4.3 MS4 Permit Authorizations

MDT's individual permit application is currently pending. As a result, MDT continues to operate under the 2010 MS4 general permit authorizations for each of Montana's seven major urban areas as shown in **Table 1-2** below. A copy of the 2010 MS4 General Permit and MDT authorizations are included in **Appendix A**.

Permit coverage includes geographical areas within the regulated MS4 boundaries that are under MDT's jurisdiction, including roadways and facilities. MDT operates numerous facilities, including, but not limited to, road systems, maintenance shops, sand/salt storage areas, vehicle refueling stations, etc. **Table 1-2** summarizes the MDT facilities currently operating within each MS4.

Table 1-2: MDT MS4 Permit Authorizations

MS4	MS4 Permit Authorization Number¹	Current Permit Authorized Area	MDT District(s) (Financial/Maintenance)²	MDT Facilities
Billings	MTR040001	Within city limits	Billings	Billings Main Office
	MTR040010	Within Yellowstone County urbanized limits, outside of Billings city limits		Billings Airport Maintenance Facility Yellowstone County Sand Storage (Metra) Site
Great Falls	MTR040004	Within urbanized limits	Great Falls	Great Falls Main Office Great Falls 57 th Street Facility
Missoula	MTR040007	Within urbanized limits	Missoula	Missoula Main Office Missoula DeSmet Wye Site Missoula Tamarack Road Facility Missoula Oil Setup Facility
Bozeman	MTR040002	Within city limits	Butte	Bozeman Maintenance Facility Bozeman Rest Area Bozeman Snow Disposal Area
Butte	MTR040006	Within municipal incorporated boundary and sewer district area	Butte	Butte Main Office
Helena	MTR040009	Within city limits	Great Falls/ Butte	Helena Headquarters (HQ) Campus <ul style="list-style-type: none"> • Field Investigation Unit/Communications • Equipment Shop • Motorpool • HQ Campus Yard • Maintenance Helena Aeronautics Division Facility Helena York Wye Site
Kalispell	MTR040005	Within city limits	Missoula	Kalispell Maintenance Facility

¹ MDT's MS4 permit authorizations are administratively extended under the 2010 MS4 General Permit.

² MDT's five districts include financial boundaries and maintenance boundaries. Although these boundaries typically match, there are a few areas that differ. One instance is Helena, which is part of the Great Falls financial district and the Butte maintenance district. As such, duties are split between the DEES.

1.4.4 Legal Authorities

In accordance with section 60-1-102(2), MCA, MDT is the custodian of Montana's federal-aid and state highways. Pursuant to 60-1-102(1), MCA, the legislature intends, "to place a high degree of trust in the hands of those officials whose duty it is, within the limits of available funds, to plan, develop, operate, maintain, and protect the highway facilities of this state for present as well as for future use." Consistent with this intent, MDT plans, develops, operates, and maintains Montana's highways, roadways, and associated transportation facilities, including associated pull-offs, parking areas, and rest areas for the use and benefit of the travelling public.

Given this legislative policy, MDT does not have legal authority to function as a regulatory body. Instead, MDT's legal authority with respect to implementing the MS4 program is limited to the following statutes and rules:

- 27-1-202, MCA. Right to Compensatory Damages;
- 27-19-104, MCA. Contents of Complaint -- Action for Injunction by an Association;
- 61-10-154, MCA. Department of Transportation to Adopt Motor Carrier Safety Standards -- Enforcement -- Designation of Peace Officers -- Duties -- Violations; and
- ARM 18.3.104. Reasons for Debarment.

1.4.5 Non-Traditional Challenges

MDT is considered a "non-traditional" MS4 under the MPDES program. This designation recognizes that stormwater management for state transportation agencies often differ from traditional (i.e., city and county) MS4 storm water programs in the following ways:

- State transportation agencies have different missions than cities and counties and are primarily tasked with the safe transport of goods and the public. As a result, state and federal safety requirements may limit the placement of stormwater controls.
- Roadways often cross multiple jurisdictional boundaries, waterways, wetlands, and watersheds. As a result, stormwater management solutions may need to cover a large geographic area, depending on the location of the system.
- State transportation agencies do not have authority to control stormwater via regulations or ordinances. Instead, controls are established through contract provisions, internal policies and guidelines, and cooperative agreements.

- Unlike a city or county, state transportation agencies do not have their own “citizens” to engage. Instead, users of the transportation system are members of the traveling public, necessitating tailored educational campaigns and outreach efforts.
- Oversight of new development, redevelopment, and construction projects are typically limited to areas within the state transportation agency’s right-of-way (ROW).
- State transportation agencies do not typically oversee projects beyond those they own.
- Access and/or encroachment to the state transportation agency’s ROW is often managed through permit programs.

Additionally, MDT strives to manage the following transportation-specific issues:

- MDT storm water conveyance systems capture runoff from offsite sources and carry pollutants not associated with MDT activities;
- MDT does not have the legal authority to tax or generate fees to fund efforts to comply with its MS4 permit or develop its MS4 program; and
- MDT must balance being respectful of the unique requirements and community considerations of each MS4 area while maintaining consistent statewide practices and processes for design, construction, maintenance, and permitting.

1.4.6 Statewide Administration

To address these challenges, MDT has developed one statewide SWMP for use in each of the permitted MS4s. This integrated approach ensures effective SWMP administration by:

- Assigning one Statewide MS4 Storm Water Coordinator responsible for ensuring compliance with regulatory requirements;
- Creating consistency across MDT in order to discourage real or perceived non-uniformity of contract administration with MDT Contractors and MDT encroachment permitting actions for outside entities;
- Eliminating redundancy in tracking efforts;
- Simplifying the process of reviewing, documenting, reporting, and updating the program; and
- Providing a consistent program that will support future permit compliance.

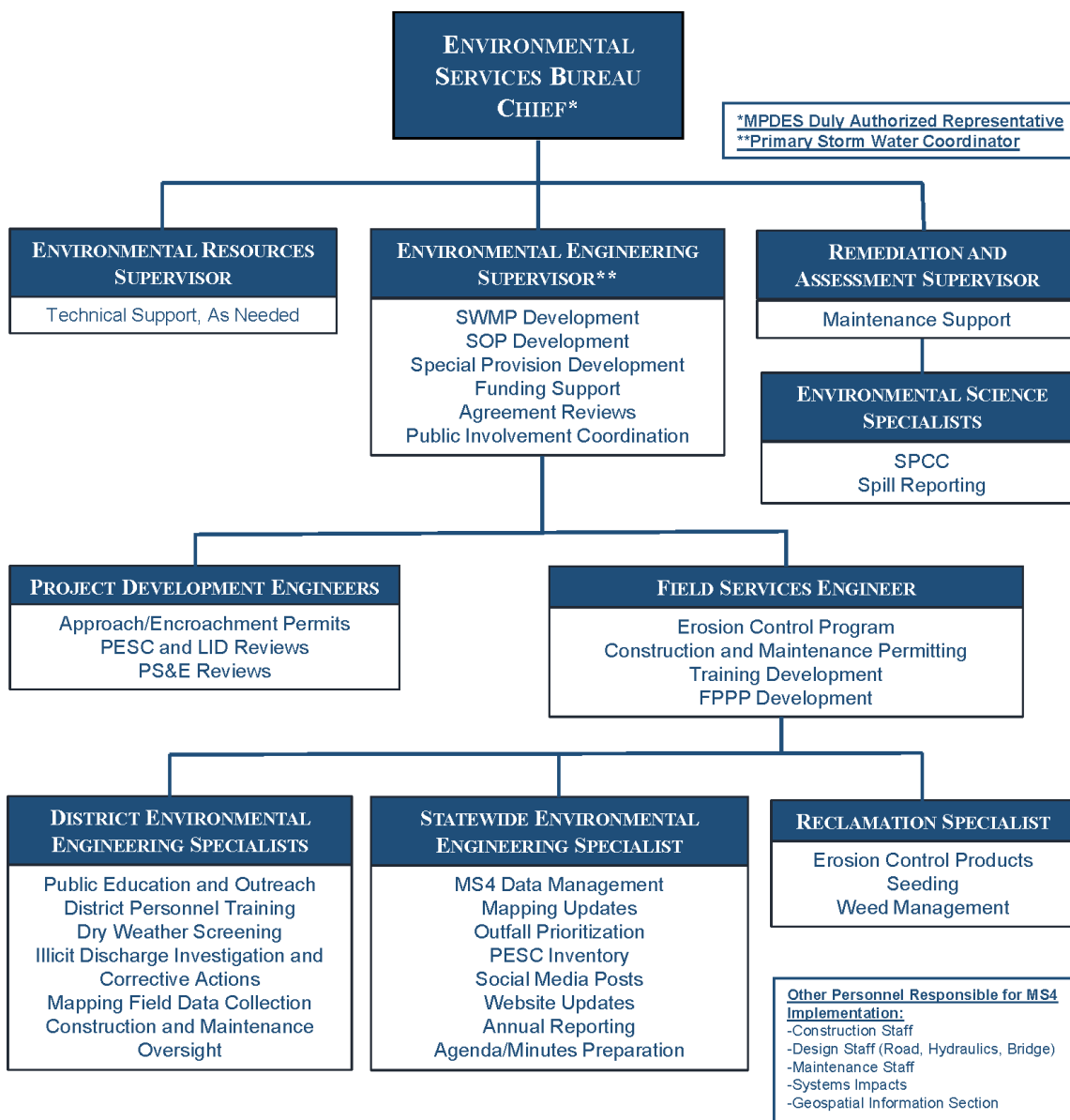
1.5 STORM WATER MANAGEMENT TEAM

MDT has established a storm water team comprised of persons responsible for implementing the SWMP. Additionally, MDT has developed formal mechanisms of communication and coordination between team members to ensure regular communication and submittal of information necessary for permit compliance tracking and reporting.

1.5.1 MS4 Program Management

As described previously, MDT's MS4 program is administered through the ESB. The ESB coordinates with other MDT divisions and districts to communicate and support MS4-related activities and requirements. The Bureau Chief for ESB has been designated as the duly authorized representative (i.e., signatory) and main contact person for all MPDES permit documents. Implementation of the SWMP is primarily assigned to ESB's Environmental Engineering Section, with support from ESB's other two sections: Remediation and Assessment and Environmental Resources. Primary responsibilities are shown in **Figure 1-3** below and further described in **Section 2.0** of this document.

Figure 1-3: MDT Storm Water Management Team



1.5.2 Primary Storm Water Coordinator

MDT's Environmental Engineering Section Supervisor (EESS) serves as the Primary Storm Water Coordinator. This position is responsible for supervising the staff responsible for implementing MDT's MS4 program and leads efforts to develop and implement the SWMP and associated Standard Operating Procedures (SOPs).

1.5.3 Formal Communication Mechanisms

1.5.3.1 Meeting Agendas and Minutes

All meetings between storm water management team members are to be documented. Meeting agendas and minutes are typically prepared and distributed by the Statewide Environmental Engineering Specialist (SEES) or a designee.

1.5.3.2 MS4 Data Manager Email

MDT currently maintains a distribution email for MS4 data management purposes. MS4-related items are to be emailed to the following email address: mdtms4datamanager@mt.gov. The personnel included on the distribution for this email address are determined by the EESS. Currently, recipients include the EESS, Field Services Engineer (FSE), and the SEES. The SEES is responsible for storing and tracking the data received through this distribution email.

1.5.3.3 Standard Operating Procedures and Manuals

MDT has developed numerous SOPs that include manuals, guidance, and forms for use in implementing the statewide SWMP, which are routinely updated. Updates to the SOPs occur as needed and are posted on MDT's intranet site once effective. A summary of the SOPs and manuals current as of the date of SWMP publication are included in **Appendix B**.

2. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

2.1 MINIMUM CONTROL MEASURES

As required by the MS4 permit, MDT has incorporated into its SWMP the identified six MCMs. Implementation of these MCMs is intended to result in reductions of pollutants discharged into surface waters. This section describes the MCMs and their respective BMPs, measurable goals, and implementation schedules. The goals of each MCM are described, along with the rationale for selecting specific BMPs.

2.1.1 MCM 1 & 2: Public Education, Outreach, Involvement, and Participation

An essential component to successful storm water management is public education and outreach. Because source control is the primary means of controlling storm water pollution, the public needs to be educated on the impact of storm water discharges on waterbodies and the steps they can take to reduce pollutants in storm water runoff. Likewise, involving the public and allowing key target audiences to participate in the development and implementation of a storm water program offers increased support and stronger compliance.

2.1.1.1 Target Audiences and Outreach Strategies

Annually, MDT reviews the business types and residential behaviors that are common sources of pollutants, illicit discharges, spills, and/or dumping within its MS4 boundaries. Based on this review, MDT identifies key audiences and outreach strategies to target public education and outreach efforts as described in **Table 2-1** below.

Table 2-1: Key Target Audiences and Outreach Strategies

Key Target Audience	Audience Type	Associated Pollutant(s)	Rational for Selection	Outreach Method(s)	Sources of Illicit Discharges
Roadway Users	External – transient	Trash, petroleum products, tire wear pollutants, transportation-related spills, RV septic waste, livestock transport waste	Users of transportation system with the potential to add pollutants	Website, social media posts, printed material, posters/displays	Spills, dumping
Students	External – transient	Trash, petroleum products, tire wear pollutants, transportation-related spills	Studies indicating early awareness influences behavior	Fairs, classroom presentations, printed material	Spills, dumping
Highway Contractors	External – temporary occupancy	Trash, petroleum products, paints, concrete washout, chemical dust suppressants, sediment, fertilizer	Construction-related disturbances within highway right-of-way, proximity to water crossings, dirt moving equipment	Website, printed material, contract documents, temporary BMP manual, environmental construction oversight	Concrete washout, leaks and spills, unpermitted discharges, material wasting, drilling fluids and returns
Adjacent Residents and Businesses	External – permanent	Fertilizers, pet waste, fats and greases, floor wax, household waste, used oil, wash water, yard waste, paints, chlorine	Permanent users of MDT infrastructure, proximity to storm water inlets, private service line protection	Website, social media posts, fairs, printed material	Used oil, floor wax, wash water
MDT Maintenance Personnel	Internal	Deicing materials, sanding, fertilizer, petroleum products, paints	Runoff potential from maintenance activities, operation of post-construction storm water controls, ability to identify illicit discharges	Internal training presentations, printed materials, posters/displays, maintenance manual BMPs, Facility Pollution Prevention Plans	Spills, dumping
MDT Construction Personnel	Internal	Indirect – construction related discharge	Oversight of contractor operations, ability to identify illicit discharges	Internal training presentations, online BMP training, printed materials, temporary BMP manual, contract documents, environmental construction oversight	Concrete washout, leaks and spills, unpermitted discharges, material wasting, drilling fluids and returns
MDT Design Personnel	Internal	Indirect – post-construction related discharges	Scope and design permanent erosion and sediment controls, develop contract documents	Internal training presentations, Permanent Erosion and Sediment Control manual	None

2.1.1.2 Best Management Practices

MDT has selected the following BMPs to implement MCMs 1 & 2 to the MEP.

- PEOIP-01 MDT Website (Internal/External) – Develop and utilize a website to provide a variety of storm water educational materials for the public and MDT employees.
 - Rationale for selection: Users of MDT facilities are transient through the MDT system. As such, MDT’s public education efforts are primarily online in order to educate and seek input from a wider audience (i.e., roadway users).
- PEOIP-02 MDT Social Media Posts – Create awareness of storm water specific issues by utilizing MDT social media sites (e.g., Facebook, Instagram).
 - Rationale for selection: Passive Outreach Strategy - seeks input from a wider audience (i.e., roadway users).
- PEOIP-03 MDT Newslines – Create awareness amongst MDT stakeholders of storm water related issues.
 - Rationale for selection: Passive Outreach Strategy - Newslines are an MDT publication that is distributed statewide allowing for a wider distribution.
- PEOIP-04 Public Outreach Events - Provide presentations on storm water issues at schools/universities, conferences, civic clubs, libraries, businesses, etc.
 - Rationale for selection: Active Outreach Strategy - local presentations allow for more targeted messaging specific to each MS4.
- PEOIP-05 Public Feedback - MDT will issue news releases annually in each MS4 soliciting public feedback on the SWMP.
 - Rationale for selection: Active Outreach Strategy – provides notice and opportunity for public to become involved in development of SWMP.
- PEOIP-06 Adopt-A-Highway – MDT administers a statewide program where volunteers sign a contract to provide clean up services for a section of highway.
 - Rationale for selection: Active Outreach Strategy - accumulated trash along roadways is a common pollutant in storm water runoff. Engaging volunteers allows for public participation in reducing pollution in waterways.
- PEOIP-07 Montana Storm Water Conference Participation – MDT personnel to participate in statewide conference, when offered.
 - Rationale for selection: Active Outreach Strategy – Allows MDT personnel to be exposed to innovative storm water solutions and to network and engage with other MS4 representatives.
- PEOIP-08 Erosion Control Contractor Stakeholder Group - Create an MDT erosion control subcontractor stakeholder group to discuss storm water concerns and innovations.
 - Rationale for selection: Active Outreach Strategy – Allows MDT contractors who specialize in storm water controls to engage with MDT on its erosion control program and opportunities for improvement.

2.1.1.3 Performance Tracking

Table 2-2 presents the performance tracking for these minimum control measures including the responsible parties, measurable goals, tracking, and implementation schedule.

Table 2-2: Performance Tracking for MCM 1 & 2 Public Education, Outreach, Involvement, and Participation

BMP #	Description	Person(s) Assigned	Measurable Goal(s)	Tracking	Implementation Schedule
PEOIP-01	MDT Website – Internal/External	SEES	Increase the number of website visits each year.	Number of website visits per calendar year.	Annual review
			Review website for currency of information and make updates annually.	Summary of identified changes and date website updated.	Complete by April 1 st of each year.
			Develop and publish annual report or summary.	Date annual report information posted on website.	
			Create an online illicit discharge reporting tool.	Date illicit discharge reporting link incorporated into website.	<ul style="list-style-type: none"> MDT created an online Illicit Discharge reporting tool which was incorporated into the external website 2/23/2023. “Report pollution” tab found on linked page below. https://www.mdt.mt.gov/pubinvolve/stormwater. Storm Water Construction complaints can be made in the comment form found on MDT's main webpage. Current version went live in 2021. https://www.mdt.mt.gov/contact/comment-form.aspx
			Create an online storm water construction complaint reporting tool.	Date storm water construction complaint link incorporated into website.	
PEOIP-02	MDT Social Media Posts	SEES	Post 12 storm water educational items on social media each year.	Number of followers, likes, comments per year.	Quarterly posts, Annual review
			Post 2 illicit discharge educational item on social media each year.		
PEOIP-03	MDT Newslines	SEES	Publish 1 storm water related article each year.	Distribution Numbers	Annual review
PEOIP-04	Public Outreach Events	DEES	Participate in one event each year in each MS4.	Date of event, location, and number of people in attendance.	Identify and plan events in each MS4 by no later than March 30 th of each year. Conduct outreach activities by no later than December 31 st of each year.

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BMP #	Description	Person(s) Assigned	Measurable Goal(s)	Tracking	Implementation Schedule
			Provide printed materials.	Types and numbers of materials provided.	
			Solicit input at each event using SWMP feedback form.	Number of completed feedback forms and comments received.	
PEOIP-05	Public Feedback	EESS	Annually, MDT will issue public notice in each MS4 soliciting public feedback on the SWMP. Develop an SOP for issuing public feedback notice and follow-up.	Dates public notices issued, feedback received.	Publish public input solicitation by July 1st of each year for 30 days. Annual review of comments received. Implement public feedback SOP June 2025.
PEOIP-06	Adopt-A-Highway	Adopt-A-Highway Program Manager	MDT will maintain or increase the number of miles adopted each year under the Adopt-A-Highway program.	Number of miles adopted within each MS4.	Annual review
PEOIP-07	Montana Storm Water Conference Participation	EESS, FSE, DEES, Hydraulics Engineer	Participate in Montana Storm Water Conference, when offered.	Conferences offered and MDT attendance information.	Annual review
PEOIP-08	Erosion Control Contractor Stakeholder Group	FSE	Develop an erosion control subcontractor stakeholder group that meets annually to discuss storm water concerns and innovations.	Stakeholder group participants and meeting attendance.	Compiled and implemented a stakeholder group in 2023. Stakeholder meeting held April 18, 2024. Meetings held annually.

2.1.2 MCM 3: Illicit Discharge Detection and Elimination

In order to eliminate illicit discharges into permitted MS4s, MDT will develop and implement an Illicit Discharge Detection and Elimination (IDDE) program. The IDDE program is intended to detect and eliminate illicit discharges by informing individuals of the hazards associated with illegal discharges and improper waste disposal, prohibiting non-storm water discharges into the MS4, and implementing appropriate enforcement actions as needed to eliminate discharges. Administration of this program involves qualifying the significance of non-storm water discharges, prioritizing outfalls susceptible to illicit discharges, mapping storm sewer infrastructure, and conducting visual reconnaissance activities.

2.1.2.1 Significant Non-Storm Water Discharges

Annually, MDT reviews potential non-storm water discharges that have been identified as significant contributors of pollutants (i.e., illicit discharges). Using available information, MDT has compiled a list of these significant non-stormwater discharges, associated pollutants, and controls. These significant non-stormwater discharges are listed in **Table 2-3** below.

Table 2-3: Significant Non-Stormwater Discharges

Non-Stormwater Discharges	Associated Pollutants	Discharge Controls
Contaminated Pumped Groundwater in Superfund Areas	Heavy Metals	MDT staff is trained to report any illicit discharges to MDT's Environmental Services Bureau for investigation. MDT staff also provides educational materials on recognizing and reporting illicit discharges to MS4 communities.
Foundation Drains in Superfund Areas	Heavy Metals	MDT staff is trained to report any illicit discharges to MDT's Environmental Services Bureau for investigation. MDT staff also provides educational materials on recognizing and reporting illicit discharges to MS4 communities.
Unpermitted Discharges (Industrial Process Water)	Petroleum Products, Heavy Metals	MDT staff is trained to report any illicit discharges to MDT's Environmental Services Bureau for investigation. MDT staff also provides educational materials on recognizing and reporting illicit discharges to MS4 communities.
Construction related Discharges (Concrete Wash Water, Core Drilling Fluid)	High pH, sediments, oils	MDT performs environmental inspections on construction sites to ensure the storm water construction permit issued by DEQ is followed. MDT staff is trained to report any illicit discharges to MDT's Environmental Services Bureau for investigation. MDT staff also provides educational materials on recognizing and reporting illicit discharges to MS4 communities.
Building Exterior Pressure Washing Discharge	Soaps, sediment, paint chips, temperature	MDT staff is trained to report any illicit discharges to MDT's Environmental Services Bureau for investigation. MDT staff also provides educational materials on recognizing and reporting illicit discharges to MS4 communities.

2.1.2.2 Insignificant Non-Storm Water Discharges

Annually, MDT reviews occasional incidental non-storm water discharges that are considered non-significant contributors of pollutants. Using available information, MDT identifies these insignificant non-stormwater discharges, associated pollutants, and controls. These insignificant non-stormwater discharges will not be addressed as illicit discharges and are listed in **Table 2-4** below.

Table 2-4: Insignificant Non-Stormwater Discharges

Non-Stormwater Discharges	Associated Pollutants	Discharge Controls
Discharges associated with landscape watering	Can pick up pollutants from impervious surfaces	Flow should be contained to vegetated areas.
Discharges associated with individual residential vehicle washing or charity car washes	Soaps, detergents, sediment, oils/grease	Education and outreach to encourage car washing at commercial carwash or in an area where wash water infiltrates, such as vegetated areas.
Discharges associated with water line flushing and fire hydrant flushing with no disinfection chemicals	Can pick up pollutants from impervious surfaces	Segregate flow to prevent introduction of pollutants. Flow should be discharged to vegetated areas if possible, or directly to storm drain system to avoid flowing across impervious surfaces where pollutants may be picked up.
Street, bridge, and pavement wash waters from street washing/sweeping activities	Sediment, debris, oil/grease, vehicle fluids, metals	Minimize amount of water used and use vacuum to prevent discharge.
Rising groundwater and uncontaminated groundwater infiltration	Can pick up pollutants from impervious surfaces	Segregate flow to prevent introduction of pollutants. Flow should be discharged to vegetated areas if possible, or directly to storm drain system to avoid flowing across impervious surfaces where pollutants may be picked up.
Uncontaminated pumped groundwater	Can pick up pollutants from impervious surfaces	Erosion and sediment controls to keep diverted flows from discharging sediment to storm drain system; implementation of dewatering plan.
Discharges associated with firefighting activities or accident/emergency cleanup from traffic accidents	Sediment, debris, vehicle fluids, chemicals being transported by vehicle	If time and resources allow, plug the storm drain collection system or dam, dike or berm runoff for temporary storage and proper disposal of runoff. Follow Safety Data Sheet for any chemical spills and report spills to Disaster and Emergency Services and MDEQ.
Overflows or diversions from streams, springs, riparian habitats, or wetlands	Can pick up pollutants from impervious surfaces	Erosion and sediment controls to keep diverted flows from discharging sediment to storm drain system
Discharges that are regulated under a separate MPDES permit (e.g., construction dewatering)	Sediment, nutrients, metals, etc.	Follow permit requirements

2.1.2.3 Best Management Practices

MDT has selected the following BMPs to implement MCM 3 to the MEP.

- IDDE-01 Non-Storm Water Discharge Identification – Determine which potential non-storm water discharges or flows are significant and insignificant contributors of pollutants to the MS4.
 - Rationale for selection: Allows MDT to focus investigative and corrective action efforts on significant contributors of pollutants to the MS4.
- IDDE-02 Storm Sewer System Mapping – Develop an interactive geographical information system (GIS)-based MS4 storm sewer map that shows locations of storm sewer system components within each MS4.
 - Rationale for selection: Provides a tool for investigating illicit discharges, containing spills, and identifying high priority areas.
- IDDE-03 High Priority Assessment – Identify areas and outfalls that are most likely to contribute pollutants to the MS4.
 - Rationale for selection: Prioritizing outfalls allows for increased oversight in areas most likely to result in discharges that could cause or contribute to pollution of state waters.
- IDDE-04 IDDE Investigation and Corrective Action Plan (CAP) – Identifies processes that MDT uses to locate the source of an illicit discharge and select the appropriate corrective action.
 - Rationale for selection: Allows for consistent and timely responses to illicit discharge events.
- IDDE-05 Enforcement Response Plan (ERP) – Identifies policies and procedures for MDT to exert authority over MS4 users.
 - Rationale for selection: Allows for consistent and timely enforcement to eliminate prohibited discharges.
- IDDE-06 Dry Weather Screening – Inspect outfalls during dry weather to detect illicit discharges and connections into the MS4
 - Rationale for selection: Proactive measure to identify and eliminate illicit discharges.
- IDDE-07 IDDE Field Guidance – Develop guidance to assist MDT personnel with detection and elimination of illicit discharges into the MS4
 - Rationale for selection: Engages additional MDT personnel in identifying illicit discharges.

2.1.2.4 Performance Tracking

Table 2-4 presents the performance tracking for this minimum control measure including the responsible parties, measurable goals, tracking, and implementation schedule.

Table 2-5: Performance Tracking for MCM 3 Illicit Discharge Detection and Elimination

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
IDDE-01	Non-Storm Water Discharge Identification	SEES	Develop a list of potential non-storm water discharges identified as significant contributors of pollutants (i.e., illicit discharges). Document list in SWMP, along with associated pollutants and local controls.	Illicit discharge investigation data, identified list updates, and date SWMP updated.	List of potential significant non-storm water discharges was completed 4/24/2023. Added to MDT SWMP May 2023.
			Annually assess list of non-stormwater discharges identified as significant contributors and update SWMP.		Conduct annual review by March 1 st of each year. Incorporate updates into SWMP by September 30 th of each year.
			Annually assess list of non-stormwater discharges identified as non-significant contributors that will not be addressed as illicit discharges and update SWMP.		Conduct annual review by March 1 st of each year. Incorporate updates into SWMP by September 30 th of each year.
IDDE-02	Storm Sewer System Mapping	SEES / Geospatial Analyst	Complete and update storm sewer system maps for each MS4 illustrating storm sewer system components including outfall locations, inlets, open channels, subsurface conduits/pipes, dry wells, manholes, and other similar discrete conveyances utilizing online interactive GIS mapping tool. Include mapping elements for receiving waters and high priority areas/outfalls.	Data included in MDT's online MS4 mapping tool.	Complete maps by December 31, 2024. Update annually thereafter.
		SEES	Review agreements with cities and counties to determine changes to MDT's storm sewer infrastructure responsibility.	Agreements, stormwater responsibility table	Complete responsibility table by October 31 st of each year. Annual Review
		Geospatial Analyst	Update MS4 Boundary information as described in MDT's <i>Mapping Update Procedure SOP</i> .	Date MS4 boundaries updated in MDT's online MS4 mapping tool.	Annually
		DEES	Collect new mapping data elements as described in MDT's <i>Mapping Update Procedure SOP</i> .	Transmission of collected data elements, date incorporated into MDT's online MS4 mapping tool.	Complete data collection efforts by October 31 st . Annually

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BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
IDDE-03	High Priority Assessment	SEES	Identify high priority areas and outfalls in each MS4 as described in MDT's IDDE CAP.	High priority outfall designation	Complete high priority outfall designation by December 31, 2023. Update in accordance with MDT's IDDE CAP.
			Review statewide dry weather screening information and illicit discharge incident reports to identify whether there are newly identified high priority outfalls.	High priority outfall designation	Annual Review
IDDE-04	IDDE Investigative and Corrective Action Plan	DEES	Implement procedures described in MDT's IDDE CAP.	Illicit discharge investigation and corrective action data	Investigate within 7 calendar days, confirm elimination within 6 months from date of discovery.
		EESS	Update MDT's IDDE CAP.	Date guidance updated	Annually
IDDE-05	Enforcement Response Plan	DEES	Implement procedures described in MDT's ERP.	Enforcement action data	As described in MDT's ERP.
		EESS	Review written policies and procedures identified in MDT's ERP and update as needed.	Date of review, date guidance updated	Once every 5 years.
IDDE-06	Dry Weather Screening	DEES	Conduct dry weather screening (e.g., outfall visual assessment) at each high priority outfall.	MDT Outfall Visual Assessment form	Annually (by December 31 st of each year)
			Conduct dry weather screening (e.g., outfall visual assessment) at each outfall at least once every five years.		At least 20% of outfalls annually (by December 31 st of each year).
IDDE-07	IDDE Field Guidance	SEES	Develop an IDDE Field Guide that is designed to assist MDT personnel with detection and elimination of illicit discharges into the MS4.	Distribution numbers	Completed MDT IDDE Field Guide August 29, 2023. Annual review thereafter.

2.1.3 MCM 4: Construction Site Storm Water Management

To control construction site discharges into the MS4, MDT will develop, implement, and enforce a construction site storm water management program. This program applies to MDT-administered construction projects that disturb 1 acre or more, including activities that are part of a larger common plan of development. Administration of this program includes requirements to control waste and implement erosion and sediment controls, review site plans, inspect sites, enforce contract provisions, and consider public input when received.

MDT's construction site storm water management program is developed with a recognition that MDT contractors have "operational control" of active construction sites, are sole permittees under MDEQ's CGP, and that program enforcement is through contract administration procedures since MDT lacks the authority to implement ordinances or other regulatory mechanisms. As sole permittee, the contractor is responsible for evaluating their proposed construction means, methods, and schedule, selecting BMPs best suited for the site, and conducting routine inspections. Copies of the contractor's CGP package, including the Storm Water Pollution Prevention Plan (SWPPP), completed erosion control plans, and compliance inspection reports are provided by the contractor to the MDT construction crew providing oversight. MDT construction personnel perform periodic inspections of the construction site and BMPs. These inspections are to ensure that BMPs installed by the contractor are installed and maintained according to MDT specifications and FHWA requirements related to storm water management. If a possible deficiency is detected, the contractor is notified and asked to remedy the issue. If potential permit non-compliance is noted, MDT's ERP is followed.

2.1.3.1 Best Management Practices

MDT has selected the following BMPs to implement MCM 4 to the MEP.

- CONST-01 Storm Water Control Contract Provisions - MDT will use contractual agreements to ensure that projects are constructed in a manner that complies with federal, tribal, state, and local regulations.
 - Rationale for selection: Inclusion of storm water related provisions into contract packages allows for contract enforcement by MDT.
- CONST-02 Stormwater Management Plan Review Checklist – MDT will utilize a stormwater management plan review checklist to confirm completeness of the CGP SWPPP packages prepared by contractors.

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- Rationale for selection: Ensures consistent review of storm water management plans and compliance with regulatory requirements to the maximum extent of contractual agreement.
- CONST-03 Environmental Construction Oversight Inspections - MDT environmental and construction personnel inspect features as they are being constructed to ensure that they are constructed according to the contract documents and to ensure compliance with federal, tribal, state, and local laws.
 - Rationale for selection: Ensures construction storm water management controls are installed, operated, and maintained as designed.
- CONST-04 ERP - Identifies policies and procedures for MDT to exert authority over MDT contractors.
 - Rationale for selection: Allows for consistent and timely enforcement to address identified deficiencies.
- CONST-05 Final Walk-Through – During the project finalization process, conduct a final MPDES walk-through for projects that require MPDES CGP coverage. Ensure BMPs are installed and functioning properly. For sites that have not yet reached final stabilization, transfer CGP coverage from contractor to MDT maintenance or a local entity.
 - Rationale for selection: Once physical work at a construction site is concluded, the contractor is no longer in operational control and CGP coverage is transferred to the appropriate entity. During this walk-through, MDT may direct the contractor to remove unnecessary temporary BMPs, replace temporary BMPs with permanent or long-term BMPs, provide additional temporary or permanent BMPs or perform BMP maintenance. Once the on-site conditions are acceptable and there are no unresolved violations for the site, CGP coverage is transferred.
- CONST-06 Program Evaluation - Discuss and solicit feedback on stormwater-related issues and suggested program improvements.
 - Rationale for selection: Identifies issues and allows for improvement of the SWMP.
- CONST-07 Construction Site Storm Water Management Public Input – Address storm water complaints identified by the public via MDT’s website, social media sites, and/or phone calls.
 - Rationale for selection: Allows consideration of public input when received and provides timeframe to resolve identified issues.
- CONST-08 Construction Site Personnel Training – Train MDT personnel in the selection, implementation, inspection, and maintenance of storm water BMPs.
 - Rationale for selection: Ensure staff are qualified to review storm water construction BMPs and understand inspection protocols and enforcement responses.

2.1.3.2 Performance Tracking

Table 2-5 presents the performance tracking for this minimum control measure including the responsible parties, measurable goals, tracking, and implementation schedule.

Table 2-6: Performance Tracking for MCM 4 Construction Site Storm Water Management

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
CONST-01	Storm Water Control Contract Provisions	EESS / FSE	Update and maintain standard special provisions for: <ul style="list-style-type: none"> Storm Water Permitting Requirements Under the MPDES Protection of Storm Water Drainage System and Compliance with Local Permit Requirements 	Date special provision(s) last updated	Annual Review
		FSE	Update MDT's <i>Erosion and Sediment Control BMP Manual</i> as needed to address new or changed regulatory requirements and/or BMP specifications.	Date manual last updated	
		Project Development Engineers (PDEs)	Ensure all projects let in MS4s contain the standard special provisions as outlined in MDT's <i>Plans, Specifications, and Estimates (PS&E) Review Guidance for Projects Located in MS4s SOP</i> .	Projects let in each MS4 and verification that required special provisions are included in contract documents.	
CONST-02	Stormwater Management Plan Review Checklist	FSE	Develop a storm water management plan review checklist that documents technology-based effluent limitation requirements specified in the most current MPDES CGP. This checklist will be used to confirm completeness of the CGP SWPPP packages prepared by contractors.	Date checklist finalized.	Construction Storm Water Management Plan review checklist developed and completed 12/21/2023.
		DEES	Beginning January 1, 2024, for projects within MS4s that require MPDES CGP authorization, utilize a stormwater management plan review checklist to confirm completeness of the CGP SWPPP packages prepared by contractors.	Projects let in each MS4 that require MPDES CGP authorization, date checklist completed and findings	Annual review starting January 1, 2024.
CONST-03	Environmental Construction Oversight Inspections	Engineering Project Manager (EPM) and construction crews	For MDT-administered construction projects, the EPM and/or MDT construction crew will inspect all BMPs bi-weekly and document findings in BMP Inspection Report.	Tracked separately in AASHTOWARE: date(s) of inspection(s) and findings	Periodic audit of records stored in AASHTOWARE

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BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
		FSE	Update MDT's <i>MS4 Construction and Post-Construction DEES Inspection Procedure</i> SOP and environmental construction oversight inspection checklist as needed to address new or changed regulatory requirements.	Date(s) of updated SOPs and/or forms	Annual review
		DEES	Complete environmental construction oversight inspections in accordance with MDT's <i>MS4 Construction and Post-Construction DEES Inspection Procedure</i> SOP. Document findings using Environmental Construction Inspection form.	Active construction projects in MS4s, date(s) of environmental oversight inspection(s) and findings, including associated MPDES CGP authorization number, location, size and topography of site, and proximity of site to waterbodies.	
CONST-04	Enforcement Response Plan	DEES	Implement procedures described in MDT's ERP.	Enforcement action data	As described in MDT's ERP.
		EES	Review written policies and procedures identified in MDT's ERP and update as needed.	Date of review, date guidance updated	Once every 5 years.
CONST-05	Final Walk-Through	DEES	For projects that require MPDES CGP authorization, conduct a final walk-through inspection in accordance with MDT's <i>MS4 Construction and Post-Construction DEES Inspection Procedure</i> SOP. Document findings using Preliminary and Final MPDES/NPDES Permit Walk-through forms, or with MPDES/NPDES Final Stabilization Inspection form for projects where CGP termination is proposed.	Projects let in each MS4 that require MDPES CGP authorization, date of Preliminary and Final Walk-through inspections, and date project closed out	Annual review

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BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
CONST-06	Program Evaluation	DEES	Attend at least one MDT District EPM meeting per year to discuss stormwater-related issues and solicit feedback on suggested program improvements. Document feedback using SWMP feedback form(s) and/or through meeting summary.	Date and location of EPM meeting, attendees, topics covered, feedback received	Annual Review
		SEES	Annually review feedback and determine if there are topics that need to be discussed further with appropriate stormwater program staff and whether changes to the SWMP are recommended.	Feedback received	Annual Review
CONST-07	Construction Site Storm Water Management Public Input	EPM	Address storm water complaints identified by the public via MDT's website and/or phone calls. Enlist assistance from DEES to resolve.	Project, location, feedback received, resolution	MDT's website updated in 2023 and includes the ability to report complaints. Annual review starting Jan 1, 2024.
		DEES	When requested by EPM, conduct an environmental construction oversight inspection within 14 days of the complaint. Document findings using Environmental Construction Inspection form.	Date(s) of environmental oversight inspection(s) and findings	
CONST-08	Construction Site Personnel Training	DEES/ SEES	Conduct routine training in accordance with Section 2.2.2 of this document.	Participant information	As specified in Section 2.2.2 of this document.

2.1.4 MCM 5: Post-Construction Site Storm Water Management

To ensure that discharges from new and redevelopment projects include controls to prevent or minimize water quality impacts, MDT will develop, implement, and enforce a post-construction site storm water management program. This program applies to MDT-administered projects that disturb 1 acre or more, including activities that are part of a larger common plan of development. Administration of this program includes requirements for regulated projects to implement storm water management controls that reflect or improve upon predevelopment hydrology, include a combination of structural and non-structural BMPs, and ensure adequate long-term operation and maintenance of post-construction BMPs (e.g., permanent erosion and sediment controls [PESC]).

The program also includes mechanisms to address post-construction runoff from private parties to the extent allowable under state law. Some development and redevelopment activities by private parties require MDT approval for encroachments and/or approach permits. MDT's granting of the approach and encroachments permits generally constitute a "state action" under the Montana Environmental Policy Act (MEPA). Through the MEPA compliance process, MDT is able to review the proposed work and provide MS4-related information for inclusion in the permit issuance correspondence.

2.1.4.1 Best Management Practices

MDT has selected the following BMPs to implement MCM 5 to the MEP.

- POST-01 Identify Regulated Projects – Review projects to determine if the project is in an MS4, whether the project is considered a new or redevelopment project, and whether the area of disturbance is expected to be over the applicable regulatory threshold(s).
 - Rationale for selection: Identifies projects for which designers should incorporate storm water management controls that reflect or improve upon predevelopment hydrology. While MDT does not have the authority to write ordinances or requirements for storm water design criteria on non-MDT proposed projects, MDT can and does enforce MDT standards on MDT projects.
- POST-02 PESC Design – Describe procedures and methods used to address long-term erosion associated with highway construction and the resultant highway-related storm water runoff.
 - Rationale for selection: Provides information to designers on the selection of appropriate PESC measures to be included in MDT plans packages.

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- POST-03 Low Impact Development (LID) Practice Analysis - Evaluate LID techniques for MDT construction projects and at its facilities within the MS4 areas when upgrades to the facilities are implemented and new or redevelopment takes place.
 - Rationale for selection: Ensures new and redevelopment projects reflect or improve upon the predevelopment hydrology through infiltration, evapotranspiration, and capture for reuse.
- POST-04 Offsite Treatment Criteria and Formal Review/Approval Process – Develop and apply criteria for determining when offsite treatment may be allowed.
 - Rationale for selection: Provides preference for on-site treatment except for instances of technical or logistical infeasibility.
- POST-05 Post-Construction Storm Water Control Inspections – Consistently and thoroughly inspect PESC features.
 - Rationale for selection: Ensures post-construction storm water management controls are installed, operated, and maintained as designed.
- POST-06 Federal Re-Vegetation Management Program – Provide additional revegetation efforts when necessary to reach final stabilization for eligible projects.
 - Rationale for selection: Prioritizes use of federal re-vegetation funds for projects located in MS4s.
- POST-07 ERP - Identifies policies and procedures for MDT to exert authority over MDT contractors.
 - Rationale for selection: Allows for consistent and timely enforcement to address identified deficiencies.
- POST-08 Post-Construction Storm Water Control Inventory – Maintain an inventory of post-construction storm water management controls.
 - Rationale for selection: Allows for effective asset management to ensure routine inspections and maintenance actions of post-construction storm water control occurs.
- POST-09 Inspection Prioritization – Utilize a protocol to determine priority and minimum inspection frequency of post-construction storm water management controls.
 - Rationale for selection: Prioritizes inspections based on potential water quality impacts.
- POST-10 Program Evaluation - Discuss and solicit feedback on stormwater-related issues and suggested program improvements.
 - Rationale for selection: Identifies issues and allows for improvement of the SWMP.
- POST-11 Post-Construction Site Personnel Training - Train MDT personnel in the selection, implementation, inspection, and maintenance of storm water BMPs.

- Rationale for selection: Ensure staff are qualified to review storm water post-construction BMPs and understand inspection protocols and enforcement responses.

2.1.4.2 Performance Tracking

Table 2-6 presents the performance tracking for this minimum control measure including the responsible parties, measurable goals, tracking, and implementation schedule.

Table 2-7: Performance Tracking for MCM 5 Post-Construction Site Storm Water Management

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
POST-01	Identify Regulated Projects	PDEs	PDEs will review 100% of MDT-administered construction projects to determine if the project is in an MS4, whether the project is considered a new or redevelopment project, and whether it is expected to be over the regulatory threshold(s). The PDEs will document this determination in the project's environmental document (e.g., categorical exclusion, environmental assessment, or environmental impact statement.)	Projects located in MS4, new or redevelopment project designation, and whether project is over regulatory threshold(s).	Annual Review
			PDEs will review 100% of the encroachment and approach permit application environmental checklists for projects located within an MS4. The PDEs will provide appropriate MS4-related information to be included in the permit issuance correspondence.	Encroachment/approach permits issued within an MS4, environmental checklist review date and comments.	
			Investigate alternative methods to address MS4 requirements in encroachment and approach permit applications to include new UPAS and Maintenance Permitting systems.	Date alternative method implemented.	
POST-02	PESC Design	Road Designers	Evaluate projects in accordance with MDT's <i>PESC Design Guidelines</i> . Document recommendations in milestone reports.	Project, location, PESC type(s)	Annual Review
		District Hydraulics Engineer	Assist in selection of appropriate PESC treatment for various types of erosion. In coordination with Road Design, develop plans and specifications for selected PESC.		
		PDE	Review projects throughout project development and ensure PESC considered and incorporated into projects as appropriate.		

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BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
		Hydraulics Engineer	In coordination with MDT Environmental Engineering Section, update MDT's <i>PESC Design Guidelines</i> as needed to address new or changed regulatory requirements and/or design guidelines.	Date manual last updated	
POST-03	LID Practice Analysis	EESS	In coordination with MDT Hydraulics Section, the EESS will update and maintain LID Practice Analysis form as needed to address new or changed regulatory requirements and changes to project development procedures.	Date(s) of updated form	Annual Review
		PDEs	Identify in environmental document projects that require an LID Practice Analysis and work with District Hydraulics Engineer to document conclusions.	Projects that require an LID analysis and date(s) LID Practice Analysis form completed.	
		District Hydraulics Engineers	For 100% of identified projects, District Hydraulics engineers will complete the LID Practice Analysis form to document how post-construction runoff from the first 0.5 inches of rainfall is being managed.	Projects that require an LID analysis and date(s) LID Practice Analysis form completed.	
POST-04	Offsite Treatment Criteria and Formal Review/Approval Process	EESS and Hydraulics Engineer	Develop criteria for determining when offsite treatment will be allowed on MDT projects and a formal review and approval process for these determinations.	Date(s) criteria and approval process finalized	MDT developed a draft process in 2023 and will Implement 2024.
		SEES	Starting January 1, 2024, maintain an inventory of regulated projects that utilize off-site treatment for post-construction storm water runoff.	Location of the project, type and location of off-site treatment control(s), and rationale for approval of off-site treatment(s).	Annual review starting January 1, 2025.

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BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
POST-05	Post-Construction Storm Water Control Inspections	EPM and construction crews	For MDT-administered construction projects where post-construction storm water controls (e.g., permanent erosion and sediment controls) are installed, the EPM and/or MDT construction crew will inspect all BMPs bi-weekly and document findings in BMP Inspection Report.	Tracked separately in AASHTOWARE: date(s) of inspection(s) and findings	Periodic audit of records stored in AASHTOWARE
		Maintenance Section Personnel	For projects where MDT is authorized to discharge under the MPDES CGP, maintenance section personnel will inspect post-construction storm water controls (e.g., permanent erosion and sediment controls) in accordance with permit requirements. Inspections will be documented using DEQ's self-inspection report form.	Project name, MDPES CGP authorization number and issuance date, permit transfer date for projects transferred to MDT maintenance	Annual review
			For other post-construction storm water control (e.g., permanent erosion and sediment controls) inspections, maintenance section personnel will conduct routine inspections in accordance with agreements, MDT's Maintenance Manual, and site-specific O&M Manuals, as applicable. Findings will be documented in Maintenance Management System (MMS).	Tracked separately in MMS: date(s) of inspection(s) and findings	Periodic audit of records stored in MMS
		DEES	For projects that have reached final stabilization and termination under the CGP is proposed, the DEES will inspect the site and document findings with MPDES/NPDES Final Stabilization Inspection form. For MDT authorizations, the DEES will also complete a Notice of Termination.	Project name, MDPES CGP authorization number, date(s) inspected, final stabilization determination, date NOT issued	Annual review
POST-06	Federal Re-Vegetation Management Program	SEES	Annually, the SEES will identify projects with open CGP permits held by MDT for more than two growing seasons. The SEES will provide the list to the FSE and Reclamation Specialist for consideration of project nomination under the ESB-administered federal re-vegetation program.	Identified project name, MDPES CGP authorization number, and recommended improvement(s)	Annual review

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
		Reclamation Specialist	For projects nominated within MS4s, the reclamation specialist will determine if improvements to storm water run-off control and infiltration can be improved with further re-vegetation using the Federal Revegetation Management Program. If improvements are identified, the reclamation specialist will develop and let a contract under this program.	Dates(s) and location(s) of projects let under Federal Revegetation Management Program in an MS4	
POST-07	Enforcement Response Plan	DEES	Implement procedures described in MDT's ERP.	Enforcement action data	As described in MDT's ERP.
		EES	Review written policies and procedures identified in MDT's ERP and update as needed.	Date of review, date guidance updated	Once every 5 years.
POST-08	Post-Construction Storm Water Control Inventory	SEES	Beginning January 1, 2023, develop and maintain an inventory of post-construction storm water controls utilizing information contained in milestone reports, hydraulics reports, LID Practice Analysis form, and construction plans and specifications.	Location, type of control, owner/operator, maintenance responsibility, O&M Manual, and installation date (if known)	Annual review starting January 1, 2024.
POST-09	Inspection Prioritization	FSE	In coordination with MDT Maintenance Division, develop a protocol to determine priority and minimum inspection frequency for post-construction storm water controls (e.g., permanent erosion and sediment controls). Priority must be based on potential water quality impacts, with consideration for the operation and maintenance needs, proximity to waterbodies, drainage area treated, land use type, and location within an impaired watershed.	Date(s) protocol and inspection checklist finalized	Complete by December 31, 2024.
			In coordination with MDT Maintenance Division, develop a post-construction storm water control inspection checklist for incorporation into MMS.		

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
		Maintenance Division Operations Manager	With financial support from ESB, incorporate additional fields into MMS to capture post-construction storm water control inspection information. Communicate inspection requirements to maintenance personnel.	Date inspection checklist incorporated into MMS	December 31, 2024
		SEES	Update post-construction storm water control inventory with priority ranking and minimum inspection frequency.	Priority ranking, inspection frequency	Annual review starting January 1, 2025.
		DEES	Communicate with maintenance section personnel the post-construction storm water control inspection frequency and assist with inspections as requested.	Date(s) of communication or assistance, maintenance personnel involved	Periodic audit of records stored in MMS
POST-10	Program Evaluation	DEES	Attend at least one MDT Maintenance Division section person meeting per year to discuss stormwater-related issues and solicit feedback on suggested program improvements. Document feedback using SWMP feedback form(s) and/or through meeting summary.	Date and location of section person meeting, attendees, topics covered, feedback received	Annual Review
		SEES	Annually review feedback and determine if there are topics that need to be discussed further with appropriate stormwater program staff and whether changes to the SWMP are recommended.	Feedback received	Annual Review
POST-11	Post-Construction Site Personnel Training	EES, Highways Engineer	Conduct routine training in accordance with Section 2.2.3 of this document.	Participant information	As specified in Section 2.2.3 of this document.

2.1.5 MCM 6: Pollution Prevention and Good Housekeeping

The goal of MCM 6 is to develop and implement an operation and maintenance program with the goal of preventing or reducing pollutant runoff from MDT operations. This program includes employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. To administer this program, MDT has developed site-specific Facility Pollution Prevention Plans (FPPPs) tailored to each facility's unique function and day-to-day activities for MDT facilities located within a small MS4.

2.1.5.1 Facility and Activity Inventory

MDT has organized its facilities and activities into five general categories based on their basic functions. These general categories are as follows:

- Maintenance Yards
- Raw Material Storage Yards
- Vehicle Parking Facilities
- Snow Disposal Facilities
- Infrastructure Maintenance Activities

Provided in **Tables 2-8 to 2-12** below is a list of MDT-owned and/or operated facilities and activities, the associated contaminants, and the positions responsible for pollution prevention. This inventory is reviewed and updated annually. All the facilities and activities listed below are administered by MDT's Maintenance Division.

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS**Table 2-8: Maintenance Yards**

MS4	Facility	Maintenance Yard Activities	Potential Pollutants	Responsible Personnel
Butte	Main Office	Vehicle & Equipment Fueling	Gasoline, Diesel	Maintenance Chief/FPPP Lead FPPP Inspector
		Vehicle & Equipment Maintenance, Repair, Parking/Storage, Washing	Oils, antifreeze, salt, sediment	
		Outdoor Raw Material Storage	Sand/Salt, Millings, Street Sweepings	
		Salt Brine Storage	Salt	
		Road Maintenance & Painting Material Storage	Emulsion oil and Paint	
		Lawn Care	Herbicides	
Bozeman	Maintenance Facility	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead FPPP Inspector
		Raw Material Storage, Loading/Unloading	Sand/Salt	
		Salt Brine Storage	Salt	
		Lawn Care	Herbicides	
Kalispell	Maintenance Facility	Vehicle & Equipment Fueling	Gasoline, Diesel	Maintenance Chief/FPPP Lead FPPP Inspector
		Vehicle & Equipment Maintenance, Repair, Parking/Storage, Washing	Oils, antifreeze, salt, sediment	
		Raw Material Storage	Sand/Salt	
		Road Maintenance & Painting Material Storage	Emulsion oil and Paint	
		Lawn Care	Herbicides	
Great Falls	Main Office Facility	Vehicle & Equipment Fueling	Gasoline, Diesel	Maintenance Chief/FPPP Lead FPPP Inspector
		Vehicle & Equipment Maintenance, Repair, Parking/Storage, Washing	Oils, antifreeze, salt, sediment	
		Road Maintenance & Painting Material Storage	Emulsion oil and Paint	
		Lawn Care	Herbicides	
Missoula	Main Office	Vehicle & Equipment Fueling	Gasoline, Diesel	Maintenance Chief/FPPP Lead FPPP Inspector
		Vehicle & Equipment Maintenance, Repair, Parking/Storage, Washing	Oils, antifreeze, salt, sediment	
		Raw Material Storage	Sand/Salt	

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

MS4	Facility	Maintenance Yard Activities	Potential Pollutants	Responsible Personnel
		Road Maintenance & Painting Material Storage	Emulsion oil and Paint	
		Lawn Care	Herbicides	
		Salt Brine Storage	Salt	
Billings	Main Office	Vehicle & Equipment Fueling	Gasoline, Diesel	Maintenance Chief/FPPP Lead
		Vehicle & Equipment Maintenance, Repair, Parking/Storage, Washing	Oils, antifreeze, salt, sediment	FPPP Inspector
		Raw Material Storage	Sand/Salt	
		Road Maintenance & Painting Material Storage	Emulsion oil and Paint	
		Lawn Care	Herbicides	
Billings	Airport Maintenance	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead
		Raw Material Storage	Sand/Salt, Millings	FPPP Inspector
		Salt Brine Storage	Salt	
Helena	Section Shop and Yard	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead
		Raw Material Storage	Sand/Salt	FPPP Inspector
		Salt Brine Storage	Salt	
		Paint Stripe Testing	Paint	
Helena	Equipment Shop	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead
		Vehicle & Equipment Fueling	Gasoline, Diesel	FPPP Inspector
Helena	FIU Communications	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead
				FPPP Inspector
Helena	Aeronautics	Vehicle & Equipment Maintenance, Repair, Parking/Storage	Oils, antifreeze, salt, sediment	Maintenance Chief/FPPP Lead
		Pest Control	Rodenticide	FPPP Inspector

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS**Table 2-9: Raw Material Storage Yards**

MS4	Facility	Raw Material Storage Activities	Potential Pollutants	Responsible Personnel
Billings	Yellowstone County Sand Storage (Metra)	Raw Material Storage	Sand/Salt, Street Sweepings	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector
Helena	York Wye	Raw Material Storage	Sand/Salt, Street Sweepings	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector
Missoula	DeSmet Wye	Raw Material Storage	Sand/Salt, Street Sweepings, Biological Waste	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector
Missoula	Oil Setup	Raw Material Storage	Topsoil, Emulsion Oil, Millings, Sweepings, Garbage	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector
Missoula	Tamarack	Raw Material Storage	Salt, Sediment	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector
Great Falls	57th Street Facility	Raw Material Storage	Salt, Sediment, Sweepings	Maintenance Chief/FPPP Lead
		Loader Equipment Storage	Equipment Oils/Fluids	FPPP Inspector

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS**Table 2-10: Vehicle Parking Facilities**

MS4	Facility	Vehicle Parking Facility Activities	Potential Pollutants	Responsible Personnel
Helena	Motor Pool	Vehicle Fueling	Gasoline	Maintenance Chief/FPPP Lead
		Vehicle Parking	Oils, Antifreeze, Fuels	FPPP Inspector
Helena	HQ Campus	Vehicle Parking	Oils, Antifreeze, Fuels	Maintenance Chief/FPPP Lead
		Lawn Care	Herbicides	FPPP Inspector

Table 2-11: Snow Disposal Facilities

MS4	Facility	Snow Disposal Facility Activities	Potential Pollutants	Responsible Personnel
Bozeman	Snow Storage Facility	Snow Storage	Sediment, vehicle oils/fluids, salt	Maintenance Chief/FPPP Lead
				FPPP Inspector

Table 2-12: Infrastructure Maintenance Activities

Infrastructure Maintenance Activity	Potential Pollutants	Responsible Personnel
Roadway Deicing Operations	Salt, Sand	Maintenance Superintendent
Pavement Maintenance	Emulsion Oil	
Roadway Painting	Paint	Section Supervisor
Roadway Sweeping	Sand	
Stormwater Infrastructure O&M (e.g., Culvert Cleaning, Retention/Detention Pond Sediment Dredging)	Sediment	

2.1.5.3 **Best Management Practices**

MDT has selected the following BMPs to implement MCM 6 to the MEP.

- PPGH-01 MDT Facility and Activity Inventory – Develop and maintain inventory of MDT-owned and operated facilities and activities.
 - Rationale for selection: Identify potential for MDT operations to contribute contaminants to the MS4.
- PPGH-02 MDT Facility and Activity Mapping – Add MDT facilities to MS4 maps.
 - Rationale for selection: Completes mapping of storm sewer system and identifies areas of potential discharge from MDT facilities.
- PPGH-03 FPPPs and Spill Prevention, Controls, and Countermeasures (SPCCs) – Develop and implement FPPPs to identify facility-specific potential pollutant sources, associated BMPs, and inspection protocols. Incorporate SPCC plans into the FPPPs for facilities with a total aboveground oil storage capacity greater than 1,320 gallons.
 - Rationale for selection: Prevents and reduces pollution contributions to the MS4 from MDT facilities.
- PPGH-04 Facility Storm Water Control Updates – Establishes funding prioritization for storm water control enhancements at existing MDT facilities.
 - Rationale for selection: Allows for installation of additional BMPs to prevent and reduce pollution contributions to the MS4 from MDT facilities.
- PPGH-05 Facility Storm Water Awareness Posters – Create storm water BMP poster for use at MDT maintenance facilities.
 - Rationale for selection: Educates MDT personnel on various pollutants associated with MDT facilities and associated BMPs.
- PPGH-06 Field and Facility Personnel Training - Educate staff regarding storm water characteristics, water quality issues, and individual responsibilities regarding the implementation of the Statewide SWMP, FPPPs, SPCC plans, and associated SOPs.
 - Rationale for selection: Ensures staff understand storm water impacts associated with various maintenance activities and controls that can be implemented.
- PPGH-07 Maintenance Manual and SOPs – Review and update MDT’s Maintenance Manual and SOPs to address new or changed regulatory requirements and/or design guidelines.
 - Rationale for selection: Ensure MDT guidance and SOPs are up-to-date and reflect latest recommendations for storm water protection.
- PPGH-08 Street Sweeping - Implement a street sweeping program that encompasses the streets and roadways, maintenance yards, and parking areas that MDT is responsible for maintaining. The street sweeping frequency depends on need and travel volumes. Sweepers also respond to certain types of spills that require clean-up.
 - Rationale for selection: Prevents and reduces pollution contributions to the MS4 associated with MDT’s winter maintenance operations.

- PPGH-09 Winter Maintenance Program - MDT will evaluate the Winter Maintenance Program for feasible ways to transition to more environmentally friendly methods.
 - Rationale for selection: MDT must provide a reasonably safe level of service during the winter by conducting various snow removal and ice control actions. By identifying feasible ways to transition to more environmentally friendly methods, pollutant contributions to the MS4 can be reduced.
- PPGH-10 Roadside Weed Management – Minimize the use of chemical spraying for roadside weed management.
 - Rationale for selection: Reduces the contribution of pollutants to the MS4.

2.1.5.4 Performance Tracking

Table 2-7 presents the performance tracking for this minimum control measure including the responsible parties, measurable goals, tracking, and implementation schedule.

Table 2-13: Performance Tracking for MCM 6 Pollution Prevention and Good Housekeeping

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
PPGH-01	MDT Facility and Activity Inventory	SEES	Maintain an inventory of MDT-owned or operated facilities and activities that have the potential to contribute contaminants to the MS4.	Type of facility, type of activity, location, associated contaminants, responsible position, and MDT Division.	Annual Review
PPGH-02	MDT Facility and Activity Mapping	SEES / Geospatial Analyst	Complete and update MS4 maps illustrating the location of each facility and activity identified in the MDT Facility and Activity Inventory.	Data included in MDT's online MS4 mapping tool.	Completed MS4 facility mapping 2023. Facility Data assessed, monthly and facility changes mapped and updated annually.
PPGH-03	FPPPs and SPCC	FSE	Ensure each MDT facility located within an MS4 has a site-specific FPPP. If the facility also has an SPCC plan, ensure it is appended to the FPPP. Update in accordance with MDT's <i>FPPP Update and Training Procedure</i> SOP.	Facilities located in MS4, date FPPP issued, date FPPP updated, SPCC plan identification	Annual Review
		Maintenance Chief	Ensure FPPP is implemented and assign FPPP Inspector.	Assigned FPPP Inspector, contact information	
		FPPP Inspector	Review FPPP and conduct monthly inspections of the facility. Complete FPPP Inspection Checklist.	Facility, date inspection conducted, findings	Monthly
		DEES	Review monthly inspection forms and ensure corrective action(s) taken.	Corrective action(s) taken	
		SEES	Review inspection forms and confirm identified corrective actions have occurred. Maintain central repository of inspection and FPPP documents. Distribute documents in accordance	Inspection report receipt, follow-up action required	

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
			with MDT's <i>FPPP Inspection Transmittal Procedure SOP</i> .		
PPGH-04	Facility Storm Water Control Updates	DEES	Conduct an onsite review of each facility and complete the Annual FPPP Inspection Summary form in accordance with the <i>FPPP Update and Training Procedure SOP</i> . Identify recommend storm water control updates.	Facility, date Annual FPPP Inspection Summary completed	By December 31 st each year.
		SEES, FSE, EESS	Review each of the Annual FPPP Inspection Summary forms and prioritize funding for recommend storm water control updates.	Facility, recommended storm water control updates, prioritization	By April 1 st each year.
		FSE, EESS, Facilities Bureau Chief	Annually meet to prioritize facility projects for funding that will benefit water quality in the MS4s (e.g., vehicle wash bays, secondary containment, salt/sand shed, handling and storage, etc.) and develop a schedule for implementation. ESB funding will be provided for facility projects that will be completed within the schedule.	Meeting date and summary with prioritization and schedule for implementation	By May 1 st of each year.
PPGH-05	Facility Storm Water Awareness Posters	SEES	Develop a poster for use at MDT facilities showing the various pollutants associated with MDT facilities and best practices to manage them.	Date(s) poster transmitted to each facility	<u>The Good Housekeeping/ Pollution Prevention poster created in 2023 and distributed in 2024.</u>
PPGH-06	Field and Facility Personnel Training	DEES, SEES	Conduct site-specific FPPP training in accordance with MDT's <i>FPPP Update and Training Procedure SOP</i> and Section 2.2.4 of this document.	Date(s) of training, participant information, topics covered	As specified in MDT's <i>FPPP Update and Training Procedure SOP</i>
		SEES	Develop an on-line IDDE training program for use by MDT field	Date training made available on-line	By no later than December 31, 2024.

SECTION 2 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

BMP #	Description	Person(s) Assigned	Measurable Goal	Tracking	Implementation Schedule
			personnel. Incorporate requirements described in Section 2.2.4 of this document.		
PPGH-07	Maintenance Manual and SOPs	Maintenance Division Operations Manager	In coordination with MDT Environmental Engineering Section, update MDT's <i>Maintenance Operations and Procedures Manual</i> as needed to address new or changed regulatory requirements and/or design guidelines.	Date manual last updated	Once every 5 years
		EESS	Develop written SOPs and/or site-specific O&M Manuals when needed to address new or changed regulatory requirements and/or design guidelines.	Date SOP or site-specific O&M manuals issued/updated	
PPGH-08	Street Sweeping	Maintenance personnel	Sweep 100% of the facilities and MDT maintained roads within small MS4s a minimum of one time each year. Recycle sanding materials whenever feasible.	Miles swept, year, location	Annual Review
PPGH-09	Winter Maintenance Program	EESS, FSE	Review Winter Maintenance Plans for areas/sections located in MS4s. Make recommendations for environmental considerations, as appropriate.	Date(s) plans reviewed, locations covered, recommendations	Once every five years
PPGH-10	Roadside Weed Management	Reclamation Specialist	Work with maintenance personnel to encourage mechanical mowing vegetation management whenever possible. For instances when chemical spraying is necessary, follow the recommendations outlined in MDT's <i>Statewide Integrated Roadside Vegetation Management Plan</i> and conduct spraying under the supervision of a licensed chemical applicator.	Date(s) of contact, recommendations	Once every five years

2.2 TRAINING

MDT has developed a comprehensive stormwater training program. In addition to routine internal training events, select individuals of the storm water management team are sent to outside training as needed to ensure members are up to date on subject material and have required certifications, when applicable. Participant information is tracked for all training events, and training materials and documentation are maintained in accordance with MDT's *MS4 Data Management Plan* SOP.

Table 2-8 summarizes the various training types and frequency offered.

Table 2-14: Training Types and Frequency

Training Type	Target Audience	Frequency
Comprehensive Storm Water Management	Storm Water Management Team	Once every five years
On-line SWPPP Administrator	Maintenance personnel	On-Demand – Once every three years
Water Permitting/BMP	Construction personnel	On-Demand – Once every three years
PESC/LID	Road design, hydraulics, bridge, and environmental personnel	Once every five years
FPPP Implementation	Maintenance facility personnel	Once every three years
IDDE (To Be Developed)	Maintenance, construction, and environmental personnel	On-Demand - Once every three years
Storm Water BMPs, Inspection Protocol, and ERP	EPMs, Maintenance Section personnel	Annually
External - SWPPP Administrator/Preparer	FSE, DEES, SEES	Once every three years

2.2.1 Storm Water Management Team

MDT conducts comprehensive training for all members of the storm water management team at least once per permit term (i.e., once every five years). This training is intended to educate team members about permit updates and implementation responsibilities for the upcoming permit term.

The ESB is responsible for developing training materials and coordinating training events. This training is offered internally and is either conducted by members of the Environmental Engineering Section and/or through consultant services.

2.2.2 Construction Site Personnel

MDT conducts construction site SWPPP training utilizing MDT's on-line SWPPP Administrator and/or Water Permitting/BMP training programs, which were last updated in 2019. These online training programs are available on-demand and are intended for personnel involved in reviewing construction sites. Inspectors and plan reviewers are expected to take this course at least once every three years. The ESB is responsible for developing and updating the on-line training materials as needed.

This on-line training program is supplemented by annual training events conducted by the DEES. The DEES present on a multitude of storm water topics, including inspection protocols, selection, implementation, and maintenance of stormwater BMPs, and MDT's ERP. These training events are typically conducted at the district level during EPM meetings for construction personnel and at Section meetings for maintenance personnel. The DEES are responsible for presenting training materials and compiling participant information for each training event conducted. The SEES supports this effort by providing training presentations and topics that can be tailored by the DEES.

To ensure presenters are properly credentialed, the FSE, SEES, and DEES are all required to take outside DEQ-approved SWPPP Administrator and Preparer trainings and keep their certifications current. Additional personnel are sent to these outside training events as budgets allow.

2.2.3 Post-Construction Site Personnel

MDT conducts post-construction stormwater training at least once per permit term (i.e., once every five years). This training is intended to educate plan reviewers and inspectors on PESC and LID design, construction, and maintenance requirements. Post-construction stormwater training is conducted in coordination with MDT's Highways and Engineering Division, with funding allocated through their annual training budget. Training materials are developed collaboratively between ESB, road design and hydraulics personnel. This training is offered internally and is developed in-house and/or through consultant services. MDT will investigate the possibility of developing an on-line training program that could be offered both internally and externally.

This post-construction stormwater training is supplemented by annual training events conducted by the DEES. The DEES present a multitude of storm water topics, including inspection protocols, selection, implementation, and maintenance of stormwater BMPs, and MDT's ERP. These training events are typically conducted at the district level during EPM meetings for construction personnel and at Section meetings for maintenance personnel. The DEES are responsible for presenting training materials and compiling participant information for each training event conducted. The SEES supports this effort by providing training presentations and topics that can be tailored by the DEES.

2.2.4 Field and Facility Personnel

MDT conducts routine training for facility personnel responsible for FPPP implementation in accordance with MDT's *FPPP Update and Training Procedure SOP*. This training includes an overview of MS4 permit requirements, potential storm water impacts and associated BMPs, as well as SOPs associated with MCM 6.

Additionally, MDT is developing an on-line training program that will be specific to IDDE. Once complete, this training will be offered to MDT field personnel at least once every three years.

2.3 MONITORING REQUIREMENTS

Currently, MDT is not required under its MS4 permit authorizations to perform sampling, testing, or reporting of storm water discharges from their small MS4s. Should self-monitoring be required in the future, this SWMP will be updated to describe the required monitoring. It is expected that future monitoring would include both storm event and impaired waterbody monitoring. A list of impaired waterbodies for each MS4 is included in **Appendix C**. A Storm Water Monitoring Plan has been developed in anticipation of future storm event and impaired waterbody monitoring requirements and is included in **Appendix D** of this SWMP for planning purposes. It will be updated once MDT's MS4 permit requires sampling, testing, and reporting of storm water discharges.

2.3.1 Storm Event Monitoring (RESERVED)**2.3.1.1 Storm Event Monitoring Locations****2.3.1.2 Storm Event Monitoring Frequency****2.3.2 Impaired Waterbody Monitoring (RESERVED)****2.3.2.1 Pre-Total Maximum Daily Load (TMDL)****2.3.2.2 Approved TMDL Wasteload Allocations****2.4 RECORDING REQUIREMENTS****2.4.1 Monitoring Records**

Currently, MDT is not required to perform sampling, testing, or reporting of storm water discharges from their small MS4. Should self-monitoring be conducted, however, the following information must be recorded and maintained:

- Date, exact place, and time of sampling
- Estimated duration (in hours) of the storm event(s) sampled
- Total rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff
- Name(s) of individuals which performed the sampling or measurements
- Analytical laboratory test result data and reports for storm water samples and/or records which minimally indicate:
 - Date(s) analyses were performed
 - Time analyses were initiated
 - Initials or name(s) of individual(s) who performed the analyses
 - References and written procedures, when available, for the analytical techniques or methods used
 - Results of such analyses, including bench sheets, instrument readouts, computer disks or tapes, etc. used to determine the results.

2.4.2 Retention of Records

In accordance with ARM 17.30.1342(10)(b), *“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*

permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the department at any time.” Given the nature and evolution of the MS4 SWMP, it is recommended that records be maintained for a longer timeframe than identified, preferably for at least two permit terms (i.e., 10 years).

2.5 REPORTING AND EVALUATION OF THE SWMP

2.5.1 Annual Report

MDT is required to prepare and submit an annual report to MDEQ each year describing the status of MDT’s SWMP. This annual report is prepared using MDEQ’s annual reporting form. A signed copy of this report must be submitted by March 1st of each year covering the preceding calendar year. Copies of the last five years’ annual reports are posted on MDT’s stormwater website.

2.5.2 SWMP Updates

MDT’s SWMP will continue to evolve over the duration of the program as the SWMP is intended to be a living document that will be refined throughout program implementation. It will be reviewed on an annual basis to ensure it reflects improvements or changes to the program. MDT’s process for continued program improvement is through evaluating the effectiveness associated with the current BMPs, measurable goals, SOPs, guidance, policies, and practices, as well as the overall SWMP. In addition, the public will have an opportunity to provide input to improve the function of the program and further protect water quality. Updates to the SWMP based on MDT evaluations and/or public input, and the rationale for decision making, will be documented and the revised SWMP will be made available on MDT’s website.

2.5.3 Public Review

MDT recognizes public involvement and public participation is an important component of a successful stormwater program. The public can be an effective partner in improving water quality by building greater environmental awareness, leveraging support in achieving water quality goals, and increasing compliance. To allow for public participation, each SWMP revision will include a 30-day public review and comment period. The intent of this public comment period is to solicit input on the final SWMP document to improve the implementation of MDT’s program. As described in **Section 2.1.1**, MDT will provide opportunity annually for the public to provide

feedback on the SWMP. MDT's response to comments received during the annual public comment period are included in **Appendix E**. MDT also has a SWMP feedback form on its internet site that allows comments to be submitted at any time.

3. SPECIAL CONDITIONS

3.1 SHARING RESPONSIBILITY

As allowed by the MS4 general permit, a small MS4 may share responsibility to implement MCMs with another entity to satisfy their MPDES permit obligations. Shared obligations must be in writing and maintained as part of the permittee's SWMP. Implementation of the control measure, or component thereof, must be completed to a degree at least as stringent as corresponding MPDES permit requirements. Notably, each individual MS4 remains responsible for compliance with its permit obligations if the other entity fails to implement the control measure. As such, MDEQ recommends shared obligations be described in a legally binding agreement.

MDT has numerous written agreements that assign certain maintenance responsibilities of MDT system routes, or portions thereof, to municipalities within their jurisdiction. These agreements include Memorandums of Understanding, Memorandums of Agreement, construction and maintenance agreements, storm drain agreements, and /or project specific agreements. The ESB maintains copies of these executed agreements within each MS4. For new agreements, the EESS is responsible for reviewing proposed agreements and recommending inclusion of MS4-related provisions.

3.2 QUALIFYING LOCAL PROGRAM (IF APPLICABLE)

A qualifying local program is a local municipal storm water management program that imposes relevant MCMs. As allowed in ARM 17.30.111(9), if a permit application indicates a qualifying local program requires a small MS4 to implement one or more of the six MCMs, the permittee may elect to follow the qualifying program's requirements rather than the applicable MCMs stated in the permit. At this time, there are no known qualifying local programs. As such, MDT follows the MCMs stated in the MPDES MS4 permit.

3.3 OWNERSHIP, AUTHORITY, OR RESPONSIBILITY FOR SWMP IMPLEMENTATION

MDT must implement the SWMP on all new areas added to the permittee's portion of the small MS4 as expeditiously as possible. This expectation also applies to instances in which the permittee becomes responsible for implementing storm water controls. Examples may include newly

annexed areas due to boundary updates, construction projects, changes in written agreements, addition of MDT facilities, etc.

To address these changes, MDT has developed an *MS4 Mapping Update Procedure* SOP. This SOP requires MDT's MS4 maps to be updated annually. Procedures to identify newly annexed areas, changes in maintenance responsibility, etc. are described. Once identified, the SWMP activities described here-in are to be conducted. For MCMs that cannot be implemented immediately, steps will be taken to complete the work within a reasonable timeframe.

3.4 CHANGES IN STORM WATER COORDINATOR

MDEQ requires a formal 'Storm Water Coordinator' be identified in the permit application. Should the Storm Water Coordinator person/position change, MDT must notify MDEQ in writing within 15 calendar days of the change.

3.5 RECORDS FOR INSPECTION

MDT is required to maintain a copy of its MPDES permit, permit authorization letter(s), required SWMP documents, annual reports, discharge monitoring reports, and other pertinent records. These records are to be maintained by the Storm Water Coordinator and made available to MDEQ inspectors upon request.

3.6 TWENTY-FOUR HOUR NOTICE OF NONCOMPLIANCE OR ILLICIT DISCHARGE

Serious incidents of noncompliance affecting the environment (i.e., may seriously endanger health or the environment) are to be reported to MDEQ Water Protection Bureau or the Office of Disaster and Emergency Services as soon as possible, but no later than 24-hours from first becoming aware of the circumstances. A follow-up written submission to the MDEQ Water Protection Bureau must also be provided within 5 days.

4. REFERENCES

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<https://rules.mt.gov/gateway/Subchapterhome.asp?scn=17%2E30%2E6>

Montana Secretary of State, Administrative Rules of Montana 17.30.11: Storm Water

Discharges. <https://rules.mt.gov/gateway/Subchapterhome.asp?scn=17%2E30.11>

Montana Secretary of State, Administrative Rules of Montana 17.30.12: Montana Pollutant Discharge Elimination System Standards.

<https://rules.mt.gov/gateway/Subchapterhome.asp?scn=17%2E30.12>

Montana Secretary of State, Administrative Rules of Montana 17.30.13: Montana Pollutant Discharge Elimination System Permits.

<https://rules.mt.gov/gateway/Subchapterhome.asp?scn=17%2E30.13>

Appendix A

2010 Small MS4 General Permit and MDT Authorizations

GENERAL PERMIT
FOR
STORM WATER DISCHARGE ASSOCIATED WITH SMALL
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

PERMIT NUMBER MTR040000

MONTANA DEPARTMENT OF
ENVIRONMENTAL QUALITY

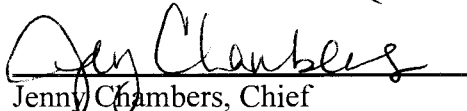
AUTHORIZATION TO DISCHARGE UNDER
THE MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM

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 Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)* are permitted to discharge storm water resulting only from Small MS4s to state waters in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV, V, and VI.

This Permit shall become effective January 1, 2010.

This Permit and the authorization to discharge shall expire at midnight, December 31, 2014.

FOR THE MONTANA DEPARTMENT
OF ENVIRONMENTAL QUALITY



Jenny Chambers, Chief
Water Protection Bureau
Permitting and Compliance Division

Date: December 30, 2009

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APPLICABILITY

MPDES General Permit MTR040000 is a second-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 regulates storm water discharges from Small MS4s. To elaborate, ARM 17.30.1103(1)(d) requires MPDES permit coverage for Small MS4s that are identified in ARM 17.30.1102(23) or designated pursuant to ARM 17.30.1105. Regulated Small MS4s are required to apply for, and obtain, authorization for the discharge of storm water into state waters. This permit does not authorize, or supersede permitting requirements for, "storm water discharge associated with construction activity" as defined in ARM 17.30.1102(28), "storm water discharge associated with industrial activity" as defined in ARM 17.30.1102(29), "storm water discharge associated with mining and oil and gas activity" as defined in ARM 17.30.1102(30), or storm water discharges required or covered under another MPDES permit.

PART I. EFFLUENT LIMITATIONS

Effective immediately upon issuance of an authorization under this General Permit and lasting through the General Permit's 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. No discharge of storm water containing pollutants from process wastewater streams may occur under this General Permit.**
- B. 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.**
- C. 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 Storm Water Management Program (SWMP). Management practices defined within the SWMP must help eliminate or minimize the discharge of pollutants to state waters.**
- D. 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 (MS4)*, the permittee was required to develop, implement, and enforce a SWMP, as stated in Part II of that General Permit, no later than the December 31, 2009 expiration date. This requirement is still valid and binding under this reissued January 1, 2010 to December 31, 2014 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, although for the few new inclusions or revisions to the SWMP as stated in Part II of this reissued General Permit, the permittee must develop, implement, and enforce those additional or revised components no later than January 1, 2012.**
- E. For any regulated Small MS4s which have been designated through ARM 17.30.1102(23) and have never been authorized, the permittee must develop, implement, and enforce a SWMP, as stated in Part II of the General Permit, no later than five years from the initial date of permit authorization.**

PART II. STORM WATER MANAGEMENT PROGRAM (SWMP)

A. Requirements

1. Permittees shall develop, implement, and enforce a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants from the permitted Small MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Montana Water Quality Act. Implementation of Best Management Practices (BMPs) consistent with the provisions of the SWMP and the requirements in this General Permit shall constitute compliance with the requirement of reducing pollutants to the MEP. The SWMP must include management practices, control techniques, systems, designs, good standard engineering practices, and such other provisions necessary for the control of such pollutants. The Application Form for a new Small MS4 authorization (never been authorized) under the General Permit requires the following information for each of the six minimum control measures described in Part II.B.:
 - a. The BMPs that the permittee or another entity will implement for each of the six storm water minimum control measures;
 - b. The measurable goals for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action; and
 - c. The person or persons (or position(s)) responsible for implementing or coordinating the BMPs for the SWMP.

Another type of Application Form is used for the "reapplication" (renewal of authorizations) under subsequent General Permits, and is slightly different than the original Application Form in that it does not typically include a resubmittal of the items in Parts II.A.1.a., b., and c. above. For "reapplications", the Application Form and instructions state required inclusions.

Permittees can refer to the Department website for a link to EPA's Menu of BMPs for use in the development and implementation of the SWMP. Additionally, permittees can refer to EPA's January 2007 "MS4 Program Evaluation Guidance" for typical compliance expectations for the SWMP.

The Department encourages permittees to utilize the vast amount of guidance developed by the EPA and others around the country with respect to BMPs. In Montana, due to numerous factors (the amount of information available nationally and from EPA, the geographic variability, the climate variability, the geology and topography variability, a relatively low population, a relatively low amount of industrial activity, a relatively low amount of permitted MS4s and respective drainage areas, a relatively low amount of significant historical storm water-related pollution problems, a relatively low amount of precipitation, and to promote flexibility for new technologies, new ideas, and local input)

the Department does not utilize a customized Montana-specific storm water BMP manual at this time. Similarly, the Department has no list of approved BMPs specific to Montana at this time.

Permittees can also look up information about various MPDES permits in their area, including Department-issued storm water construction, industrial, and mining permit authorizations by referencing the EPA "ECHO" website, which as of the issuance of this General Permit, may be found at http://www.epa-echo.gov/echo/compliance_report_water_icp.html

Small MS4 permitting information, forms, and links may be accessed through the Department's internet homepage: <http://www.deq.mt.gov>

2. In addition to the requirements listed above, the permittee shall maintain documentation describing how and why each of the BMPs and measurable goals for the SWMP was selected. The information required for such documentation is given in Part II.B. for each minimum control measure.

B. Minimum Control Measures

The six minimum control measures that must be included in the Storm Water Management Program are:

1. Public Education and Outreach on Storm Water Impacts

- a. The permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on waterbodies and the steps that the public can take to reduce pollutants in storm water runoff.
- b. The permittee shall maintain documentation with respect to the development of a storm water public education and outreach program. This documentation must address both the overall public education program and the individual BMPs, measurable goals and responsible persons/positions for the program. This documentation must include the following information, at a minimum:
 - i. Identify how the permittee plans to inform individuals and households about the steps they can take to reduce storm water pollution.
 - ii. Identify how the permittee plans to inform individuals and groups on how to become involved with the SWMP (with activities such as local stream and beach restoration activities).
 - iii. Identify the target audiences for the education program which are likely to have significant storm water impacts (including commercial, industrial, and institutional entities) and why those target audiences were selected.
 - iv. Identify the target pollutant sources the public education program is designed to address.
 - v. Identify the outreach strategy, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) to be used to reach the target audiences, and how many people are expected to be reached by the outreach strategy over the General Permit term.
 - vi. Identify who is responsible for overall management and implementation of the storm water public education and outreach program and, if different, who is responsible for each of the BMPs identified for this program.
 - vii. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.

2. Public Involvement/Participation

- a. The permittee shall at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.
- b. The permittee shall maintain documentation with respect to the development of a storm water public involvement/participation program. This documentation must address both the overall public involvement/participation program and the individual BMPs, measurable goals, and responsible persons/positions for this program. This documentation must include the following information, at a minimum:
 - i. Identify how the public was involved in the development and submittal of the permit application and the SWMP.
 - ii. Identify plans to actively involve the public in the development and implementation of the SWMP.
 - iii. Identify the target audiences for the public involvement program, including a description of the types of ethnic and economic groups engaged. The permittee is encouraged to actively involve all potentially affected stakeholder groups, including commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and educational organizations, among others.
 - iv. Identify the types of public involvement activities included in this program. Where appropriate, consider the following types of public involvement activities:
 - (a) Citizen representatives on a storm water management panel;
 - (b) Public hearings;
 - (c) Working with citizen volunteers willing to educate others about the program; and
 - (d) Volunteer monitoring or stream/beach clean-up activities.
 - v. Identify who is responsible for the overall management and implementation of the storm water public involvement/participation program and, if different, who is responsible for each of the BMPs identified for this program.
 - vi. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.

3. Illicit Discharge Detection and Elimination (IDDE)

- a. The permittee shall:
- i. 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;
 - ii. Develop, and keep updated, a storm sewer system map, showing the location and number of all outfalls (as defined in ARM 17.30.1102(14) and Part VI. 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 complete IDDE program and the SWMP would typically include mapping storm sewer system components including inlets, open channels, subsurface conduits/pipes, dry wells (discharges to ground water directly), and other similar discrete conveyances. The permittee must provide a copy of the developed map(s) or any updates to the Department with the next annual report required under Part IV.I.;

NOTE: To differentiate between the terms "municipal separate storm sewer" and "surface water", and only for the purposes of determining "outfall" locations with respect to Part II.B.3. of this General Permit, the Department provides the following clarification. If the ephemeral stream (drainage) has been used (altered, constructed, depended upon, maintained, etc.) to manage rainfall or snowmelt storm water runoff from any areas developed for any purpose, then consider it part of the "municipal separate storm sewer". Also, natural ephemeral streams which drain into the aforementioned storm water conveyances in the preceding sentence would also need to be considered part of the "municipal separate storm sewer". Other natural and unaltered ephemeral streams which do not drain from any areas developed for any purpose, and which drain directly into downgradient intermittent (has a ground water component) surface waters or into perennial surface waters would not be considered a part of the "municipal separate storm sewer". Of course, downgradient intermittent and perennial surface waters are not considered a part of the "municipal separate storm sewer" for the purposes of determining "outfall" locations. Consequently, formal "outfall" locations would then be where "municipal separate storm sewer" components discharge into downgradient perennial waterbodies, intermittent waterbodies, or natural and unaltered ephemeral streams which do not drain from any areas developed for any purpose.

Another helpful consideration is that natural or manmade conveyance structures used solely for transporting storm water which originates within the designated MS4 are not "surface water". An outfall is 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.

- iii. To the extent allowable under State, Tribal or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges (except those listed under Part II.B.3.a.vi. below) into the permitted storm sewer system and implement appropriate enforcement procedures and actions;
 - iv. Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the permitted system;
 - v. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and
 - vi. Address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if the permittee identifies them as significant contributors of pollutants to the 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 fire fighting 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).
 - vii. The permittee may also develop a list of other similar occasional incidental non-storm water discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-storm water discharges 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.). The permittee must document, as a part of the SWMP, any local controls or conditions placed on these discharges. The permittee must include a provision prohibiting any individual non-storm water discharge that is determined to be contributing significant amounts of pollutants to the Small MS4.
- b. The permittee shall maintain documentation with respect to the development of a storm water IDDE program. This documentation must address both the overall IDDE program and the individual BMPs, measurable goals, and responsible persons/positions for this program. This documentation must include the following information, at a minimum:
- i. Identify how a storm sewer map was developed. Describe the sources of information used for the maps, and how verifying the outfall locations and storm

sewer system components with field surveys was performed. Also, describe how the map will be regularly updated.

- ii. Identify the mechanism (ordinance or other regulatory mechanism) used to effectively prohibit illicit discharges into the Small MS4 and why that mechanism was chosen.
- iii. Identify the appropriate enforcement procedures and actions which are used to ensure the illicit discharge ordinance (or other regulatory mechanism) is implemented.
- iv. Identify the plan to detect and address illicit discharges to the system, including discharges from illegal dumping and spills. This plan must include documented procedures for screening outfalls, including frequency. The plan must include dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources. The plan must also address on-site sewage disposal systems that flow into the storm drainage system. The description must address the following, at a minimum:
 - (a) Procedures for locating priority areas which include areas with higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines, for example) and/or ambient sampling to locate impacted reaches.
 - (b) Procedures for tracing the source of an illicit discharge, including the specific techniques the permittee will use to detect the location of the source.
 - (c) Procedures for removing the source of the illicit discharge.
 - (d) Procedures for program evaluation and assessment.
- v. Identify the plan to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Include in this description how this plan will coordinate with the public education minimum control measure and the pollution prevention/good housekeeping minimum control measure programs. This plan must identify measures to train pertinent municipal employees on the illicit discharge program.
- vi. Identify who is responsible for overall management and implementation of the storm water illicit discharge detection and elimination program and, if different, who is responsible for each of the BMPs identified for this program.
- vii. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.

4. Construction Site Storm Water Runoff Control

- a. The permittee shall develop, implement, and enforce a program to reduce pollutants in any 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. The program must include the development and implementation of, at a minimum:

- i. An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal, or local law;
 - ii. Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;
 - iii. Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
 - iv. Procedures for the Small MS4 permittee to perform site plan review (i.e. the Storm Water Pollution Prevention Plan (SWPPP)) for consistency 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;
 - v. Procedures for receipt and consideration of information submitted by the public; and
 - vi. Procedures for the Small MS4 permittee to perform site inspection and enforcement, in part based upon the site plan in Part II.B.4.a.iv., of erosion, sediment, and waste control BMPs.
- b. The permittee shall maintain documentation with respect to the development of a construction site storm water control program. This documentation must address both the overall construction site storm water control program, and the individual BMPs, measurable goals, and responsible persons/positions for the program. This documentation must include the following information, at a minimum:
- i. Identify the mechanism (ordinance or other regulatory mechanism) which will be used to require erosion and sediment controls at construction sites and why this mechanism was chosen.
 - ii. Identify the plan to ensure compliance with the erosion and sediment control regulatory mechanism, including the sanctions and enforcement mechanisms to be used to ensure compliance. Describe the procedures for when certain sanctions will be used. Possible sanctions include non-monetary penalties (such

as stop work orders), fines, bonding requirements, and/or permit denials for non-compliance.

- iii. Identify the requirements for construction site operators to implement appropriate erosion and sediment control BMPs and control waste at construction sites that may cause adverse impacts to water quality. Such waste includes, but is not limited to, discarded building materials, concrete truck washouts, chemicals, litter, and sanitary waste.
- iv. Identify the procedures for site plan review, including the review of pre-construction site plans, which incorporate considerations of potential water quality impacts and appropriate storm water pollution prevention BMPs. Describe procedures and the rationale for how certain sites for site plan review will be determined, if not all plans are to be reviewed. Describe the estimated number and percentage of sites which will have pre-construction site plans reviewed.
- v. Identify the procedures for receipt and consideration of information submitted by the public. Consider coordinating this requirement with the public education program.
- vi. Identify procedures for site inspection and enforcement of control measures, including how sites for inspection will be selected and prioritized.
- vii. Identify who is responsible for overall management and implementation of the construction site storm water control program and, if different, who is responsible for each of the BMPs identified for this program.
- viii. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.
- ix. Identify measures to train pertinent municipal employees on the construction program

5. Post-Construction Storm Water Management in New Development and Redevelopment

- a. The permittee shall:
 - i. 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;
 - ii. Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community;

- iii. Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law;
 - iv. Ensure adequate long-term operation and maintenance of BMPs;
 - v. Develop and implement procedures for the Small MS4 permittee to perform site plan review which incorporates consideration of potential water quality impacts including appropriate post-construction BMPs; and,
 - vi. Develop and implement procedures for the Small MS4 permittee to perform site inspection and enforcement of post-construction BMPs.
 - vii. For new development or redevelopment projects greater than or equal to one acre, the program shall include a process, where such practices are practicable, to require the implementation of low impact development practices that infiltrate, evapotranspire, or capture for reuse the runoff generated from the first 0.5 inches of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation. This process must be in place by January 1, 2012.
- b. The permittee shall maintain documentation with respect to the decision process used for the development of a post-construction storm water program. This documentation must address both the overall post-construction storm water program and the individual BMPs, measurable goals, and responsible persons/positions for the program. This documentation must include the following information, at a minimum:
- i. Identify how the program to address storm water runoff from new development and redevelopment projects was developed. Include in this description any specific priority areas for this program.
 - ii. Identify how the program will be specifically tailored to the local community, to minimize water quality impacts, and to attempt to maintain pre-development runoff conditions and hydrology. This includes the process, where such practices are practicable, to implement low impact development practices that infiltrate, evapotranspire, or capture for reuse the runoff generated from the first 0.5 inches of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation.
 - iii. Identify any non-structural BMPs in the program, including, as appropriate:
 - (a) Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive waterbodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation;

- (b) Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure;
 - (c) Education programs for developers and the public about project designs that minimize water quality impacts; and
 - (d) Other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly-connected impervious areas, and source control measures often thought of as good housekeeping, preventive maintenance, and spill prevention.
- iv. Identify any structural BMPs in the program, including, as appropriate:
- (a) Storage practices such as wet ponds and extended-detention outlet structures;
 - (b) Filtration practices such as grassed swales, bioretention cells, sand filters and filter strips; and
 - (c) Infiltration practices such as infiltration basins and infiltration trenches.
- v. Identify the mechanisms (ordinance or other regulatory mechanisms) which will be used to address post-construction runoff from new developments and redevelopments and why that mechanism was chosen. If a mechanism needs to be developed, describe the plan and a schedule to do so. If the ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with the program.
- vi. Identify how the long-term operation and maintenance (O&M) of the selected BMPs will be ensured. Options to help ensure that future O&M responsibilities are clearly identified include an agreement between the permittee and another party such as the post-development landowners or regional authorities.
- vii. Identify who is responsible for the overall management and implementation of the post-construction storm water program and, if different, who is responsible for each of the BMPs identified for this program.
- viii. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.
- ix. Identify the procedures for site plan review of post-construction storm water management BMPs which incorporate considerations of potential water quality impacts. Describe procedures and the rationale for how certain sites for site plan review will be determined, if not all plans are to be reviewed. Describe the estimated number and percentage of site plan reviews to be performed.

- x. Identify procedures for site inspection and enforcement of post-construction storm water management BMPs, including how sites for inspection will be selected and prioritized. Inspections must include an evaluation of whether BMPs were built properly and are being maintained properly.

6. Pollution Prevention/Good Housekeeping for Municipal Operations

- a. The permittee shall:
 - i. 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 municipal operations; and
 - ii. Using training materials available from EPA, the State of Montana, the Tribe, or other organizations, the program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, vehicle fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.
- b. The permittee shall maintain documentation with respect to the decision process for the development of a pollution prevention/good housekeeping program for municipal operations. This documentation must address both the overall pollution prevention/good housekeeping program and the individual BMPs, measurable goals, and responsible persons/positions for the program. This documentation must include the following information, at a minimum:
 - i. Identify the operation and maintenance program to prevent or reduce pollutant runoff from municipal operations. The program must specifically list the municipal operations which are impacted by this operation and maintenance program. The permittee shall also include a list of facilities or activities (excluding construction) which are owned or operated by the permittee that are subject to the Department's other MPDES storm water discharge permits, and which discharge into the permitted Small MS4. Include the Department's MPDES permit number for each facility or activity.
 - ii. Identify the municipal government employee training program, including frequency, which will be used to prevent and reduce storm water pollution from activities such as park and open space maintenance, vehicle fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. Describe any existing, available materials which are planned to be used. Describe how this training program will be coordinated with the outreach programs developed for the public information minimum control measure and the illicit discharge minimum control measure.
 - iii. The program description must specifically address the following areas:
 - (a) Maintenance activities, maintenance schedules, and long-term inspection procedures (including frequency) for controls to reduce floatables and other pollutants to the permitted Small MS4.

- (b) Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste handling and disposal areas, vehicle fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, and snow disposal areas operated by the permittee.
 - (c) Procedures for the proper disposal of waste removed from the permitted Small MS4 through the permittee's municipal operations, including dredge spoil, accumulated sediments, floatables, catch basin cleaning, and other debris.
 - (d) Procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices.
- iv. Identify who is responsible for overall management and implementation of the pollution prevention/good housekeeping program and, if different, who is responsible for each of the BMPs identified for this program.
 - v. Identify how the success of this minimum control measure will be evaluated, including how the measurable goals for each of the BMPs were selected.

C. 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 minimum control measure requirements stated in Part II.B.

D. Sharing Responsibility

Implementation of one or more of the minimum control measures may be shared with another entity, or the entity may fully take over the measure. The permittee may rely on another entity only if:

1. The other entity, in fact, implements the control measure;
2. The particular control measure, or component of that measure, is at least as stringent as the corresponding permit requirement.
3. The other entity agrees to implement the control measure on the permittee's behalf. Written acceptance of this obligation is required. This obligation must be maintained as part of the description of the permittee's SWMP. If the other entity agrees to report on the minimum control measure, the permittee must supply the other entity with the reporting requirements contained in this General Permit. If the other entity fails to

implement the control measure on the permittee's behalf, then the permittee remains liable for any discharges due to that failure to implement.

E. Reviewing and Updating Storm Water Management Programs

1. Storm Water Management Program Review

The permittee must do an annual review of their SWMP in conjunction with preparation of the annual report required under Part IV.I.

2. Storm Water Management Program Updates Required by the Department

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

- a. Address impacts on receiving water quality caused, or contributed to, by discharges from the Small MS4;
- b. Include more stringent requirements necessary to comply with new federal statutory or regulatory requirements; or
- c. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the Montana Water Quality Act.
- d. Changes requested by the Department must be made in writing, set forth the time schedule for the permittee to develop the changes, and offer the permittee the opportunity to propose alternative program changes to meet the objective of the requested modification. All changes required by the Department will be made in accordance with ARM 17.30.1365, ARM 17.30.1361, or as appropriate ARM 17.30.1362.

3. Transfer of Ownership, Operational Authority, or Responsibility for Storm Water Management Program 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 practicable, but no later than one year from addition of the new areas. Implementation may be accomplished in a phased manner to allow additional time for controls that cannot be implemented immediately.

- a. 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 affected 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.

- b. Only those portions of the SWMP specifically required as permit conditions shall be subject to the modification requirements of ARM 17.30.1365. Addition of components, controls, or requirements by the permittee and replacement of an ineffective or infeasible BMP implementing a required component of the SWMP with an alternate BMP expected to achieve the goals of the original BMP shall be considered minor changes to the SWMP and not modifications to the permit.

PART III. SPECIAL CONDITIONS

A. Discharges to Water Quality Impaired Waters

1. Water Quality Controls for Discharges to Impaired Waterbodies

The permittee's SWMP must include a section describing how the SWMP will control discharges of pollutants of concern and ensure storm water discharges will not cause or contribute to instream exceedances of water quality standards. This discussion must specifically identify measures and BMPs that will collectively control the discharges of pollutants of concern. Information on impaired waterbodies may be obtained from the Department or from the Montana DEQ website: <http://cwaic.mt.gov/>

2. Consistency with Total Maximum Daily Load (TMDL) Allocations

If a TMDL has been approved for any waterbody into which the permittee discharges storm water, and the TMDL considered and addressed MPDES-regulated storm water discharges, then the Department shall incorporate the Waste Load Allocation, as applicable, into the permittee's permit as required by 75-5-703, MCA.

PART IV. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Self-Monitoring Requirements

Storm water monitoring requirements contained in this General Permit must initiate on the effective date of authorization issued under this General Permit, or 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. Factors which may trigger additional monitoring requirements could include, but are not limited to: atypical discharges into the Small MS4; SWMP development, implementation, and enforcement effectiveness; storm water quality issues; potential contamination issues; historical issues; compliance issues; new requirements; or other water quality issues.

1. Storm Water Discharge Monitoring

The cities of Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula 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. These samples must be obtained within the city limits of each of the above cities, regardless of whether the cities are co-permitted with others such as the county.

2. Specific Monitoring Parameters

For Small MS4 permittees stated in Part IV.A.1., the standard 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	Semiannual	Grab or Composite
Chemical Oxygen Demand (COD), mg/L	Semiannual	Grab or Composite
Total Phosphorus, mg/L	Semiannual	Grab or Composite
Total Nitrogen, mg/L	Semiannual	Grab or Composite
pH, standard units	Semiannual	Instantaneous
Copper, mg/L	Semiannual	Grab or Composite
Lead, mg/L	Semiannual	Grab or Composite
Zinc, mg/L	Semiannual	Grab or Composite
Estimated Flow, gpm	Semiannual	Instantaneous ⁽⁴⁾
Oil and Grease ⁽⁵⁾ , mg/L	Semiannual	Grab

(1) Detection limits are pursuant to levels defined in WQB-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 Location

- a. For each half-year monitoring period, each of the identified Small MS4 permittees in Part IV.A.1. must sample at the following locations within the permitted geographic area:
 - i. a discharge point which represents storm water runoff drainage areas from a relatively commercial and/or industrial area; and,
 - ii. a discharge point which represents storm water runoff drainage areas from a relatively residential area.
- b. The formal names for the initially selected sampling locations must be consistently identified as "001A" for the industrial/commercial location, and "002A" for the residential location. If a new sampling location is necessary to replace the initially selected location, then a new unused and unique identifying outfall name/number will be assigned by the Department.

4. Monitoring Frequency

- a. Except as stated in Part IV.A.4.b., 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. One set of samples must be taken between January 1st and June 30th of each permitted calendar year and the other set between July 1st and December 31st. Samples must not be collected from back-to-back storm events.
- b. All permittees required to monitor must be able to dependably collect samples during each six month monitoring period. In order to help ensure the consistent and routine accumulation of required monitoring information at identified outfalls, as well as obtaining grab samples within the first thirty minutes of the discharge, permittees are encouraged to use automatic samplers at the two required monitoring locations. The use of automatic samplers may be required by the Department due to non-compliance.
- c. To ensure consistent and complete sampling throughout the General Permit cycle:
 - i. If a permittee is not able to dependably obtain a sample at the identified required sampling outfall during a six-month monitoring period due to a reported lack of storm water runoff, then a new sampling location must be obtained with dependable storm water runoff.
 - ii. If a permittee fails to obtain the required sample or reports "No Discharge" on the Discharge Monitoring Report form at a particular outfall for two consecutive six-month monitoring periods or for three total six-month monitoring periods during the General Permit cycle, then the permittee must obtain a new monitoring location outfall prior to the next regularly scheduled sampling period. This new outfall monitoring location will be identified by the permittee with a new unique and

previously unused outfall name/number which will be assigned by the Department. The new outfall monitoring location must be indicated on updated SWMP documentation. The Department must be provided with a copy of the outfall location and respective drainage area on an updated MS4 map.

- iii. If a permittee fails to obtain the required sample or reports "No Discharge" on the Discharge Monitoring Report form at a particular outfall for any six-month monitoring period and for any reason during the General Permit cycle, then the permittee must collect a substitute sample during the subsequent six-month monitoring period in addition to their regularly scheduled sample. The substitute sample must be collected from a different storm event from the regularly scheduled sample. In making up the missed sampling event, all pertinent sampling, monitoring, reporting, and recordkeeping requirements shall still apply. For the purposes of meeting this permit requirement, a "different storm event" means rainfall events separated by at least 48 hours of no measurable precipitation.
- d. For new authorizations issued under this General Permit, the first required monitoring period must be the first complete Discharge Monitoring Report (see Part IV.E.) period following the date the authorization was issued.

5. Sample Type

For all discharges, sampling data must typically be obtained by collecting a grab sample. The grab sample must be taken during the first thirty minutes of the discharge. If a grab sample is not taken within the first thirty minutes of the discharge, the permittee shall maintain with the monitoring records required in Part IV.G. of this General Permit a written description of why the collection of a grab sample was impracticable during the first thirty minutes.

A composite sample may be required by the Department on a case-by-case basis. If required, composite samples shall either be flow-weighted or time-weighted.

6. Evaluation of Storm Water Quality Monitoring Test Results

Upon the completion of each sampling event, and upon receipt of the sampling test results by the permittee, the permittee shall evaluate each parameter test result by:

- a. comparison with the pertinent median concentration in Table 2 below;
- b. comparing the pH value to the desired range of 6 to 9 standard units; and
- c. comparing the Oil & Grease concentration with the receiving water standard of 10 mg/L.

If there is an exceedance of the median concentration, the acceptable pH range, or the oil & grease standard value, the permittee shall evaluate the source and reason for this, and consider additional BMPs and/or other management measures which may need to be initiated to improve the quality of storm water discharges. These measures must be

implemented as necessary and updated in the SWMP as required in Part II.E. A summary of the evaluation of storm water quality data, including the results of the above comparisons, and additional BMPs and/or other measures which may be necessary must be submitted in addition to the annual report form required to be submitted to the Department in Part IV.I.

Table 2. Median Concentrations

Parameter, units	Median Concentration
Total Suspended Solids, mg/L	125
Chemical Oxygen Demand, mg/L	80
Total Phosphorus, mg/L	0.41
Total Nitrogen, mg/L	2.00
Total Copper, mg/L	0.040
Total Lead, mg/L	0.165
Total Zinc, mg/L	0.210

Source: *EPA Environmental Impacts of Stormwater Discharges: A National Profile*, published June 1992 (Nationwide Urban Runoff Program (NURP))

B. Representative Sampling

Samples and measurements taken for the purpose of monitoring under Part IV. must be representative of the volume and nature of the monitored discharge. A sample location must be selected such that it is a representative location for the storm water runoff drainage area within the Small MS4. Samples of the storm water discharge must be obtained prior to the storm water discharge mixing with water from the receiving intermittent or perennial waterbody.

C. 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.

D. 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.

E. Reporting of Monitoring Results

1. Discharge monitoring results must be recorded on Discharge Monitoring Report (DMR) forms provided by the Department. The permittee shall complete and submit to the Department a DMR form for each point source outfall requiring monitoring. If sampling was not completed for any reason, it must be noted on the DMR form.
2. Results of the self-monitoring must be reported semiannually on the DMR form to the Department, postmarked no later than the 28th day of the month following the half-year reporting period; the due date of one semiannual report is July 28th and the due date of the other semiannual report is January 28th. DMR forms must be submitted to the following address:

Montana Department of Environmental Quality
Water Protection Bureau
P.O. Box 200901
Helena, Montana 59620-0901
Phone: (406) 444-3080

All reports, notifications, and inquiries regarding the conditions of this General Permit must be submitted to the Department at the above address, and must comply with the signatory requirements stated in Part V.K.2.

F. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this General Permit, using approved analytical methods as specified in this General Permit, the results of this monitoring must be included in the reporting of the data submitted in the DMR. Such increased frequency must also be indicated.

G. 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:

- i. The date(s) analyses were performed;
 - ii. The time analyses were initiated;
 - iii. The initials or name(s) of individual(s) who performed the analyses;
 - iv. References and written procedures, when available, for the analytical techniques or methods used; and
 - v. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc. used to determine these results.
6. If not in compliance with Part IV.A.5. of the General Permit, a written description of why the collection of a sample was impracticable during the first thirty minutes.

H. 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. This period may be extended by request of the Department at any time.

I. 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 submit the original signed copy of the annual report form and required attachments to the Department by March 1st of each year for the preceding calendar year.
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 standard EPA annual report form, or if available, a Department-customized version of the standard EPA annual report form, must be used by all permittees or co-permittees in the completion of annual reports. No retyped, reformatted, or customized versions of the form may be developed and used, only the hard-copy or electronic versions provided by the Department.
5. If additional information is requested on or with a Department-customized version of the standard EPA annual report form, then the permittee must submit this additional

information at the same time as the form. If an electronic EPA or DEQ form submittal is used, then the required additional information must be submitted separately but at the same time as the form.

6. For those permittees required to perform storm water sampling and analytical testing, the summary of the evaluation of storm water quality data and additional BMPs and/or other measures which may be necessary, as required in Part IV.A.6. 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 identify these.
8. Full-size hard-copies of storm sewer system maps, including updates, must be submitted to the Department with the annual report form 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 stated in Parts V.K.2. and V.K.4.

J. Changes In Small MS4 Contact Person

The Application Form identifies a formal Small MS4 Contact Person for each permittee or co-permittee. Should the Small MS4 Contact Person 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 Small MS4 Contact Person", specifically identify the permit authorization number, and specifically identify the formal "Small MS4 Name" as identified on the Application Form. The written notification letter for a change in the Small MS4 Contact Person must be signed by a person meeting the requirements of Part V.K.1.c.

K. 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 Small MS4 Contact Person for their respective Small MS4, and shall be made available to Department inspectors upon request for all permittees and co-permittees.

PART V. STANDARD MPDES PERMIT CONDITIONS

A. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. 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. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall first apply for and obtain a new permit. The Application Form and fee must be submitted at least 30 days before the expiration date of this permit. The Department reserves the authority to administratively extend permit coverage in the event the General Permit is no longer effective, if the permittee has reapplied for permit coverage.

C. Need to Halt or Reduce Activity not a Defense

It may 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.

F. 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.

G. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

H. 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.

I. Inspection and Entry

The permittee shall allow the Department, 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, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

J. Monitoring and Records (See Part IV of the General Permit)

K. Signatory and Certification Requirements

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

1. All permit applications shall be signed as follows:
 - a. For a corporation, by a responsible corporate officer. A responsible corporate officer means:
 - i. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
 - ii. the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

- c. For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes:
 - i. the chief executive officer of the agency; or
 - ii. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. All reports required by permits, other information requested by the Department, must be signed by a person described in Part V.K.1. or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. the authorization is made in writing by a person described in Part V.K.1.;
 - b. the authorization specifies 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 any individual occupying a named position); and,
 - c. the written authorization is submitted to the Department.
3. Changes to authorization. If an authorization under Part V.K.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part V.K.2. 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 Part V.K.1. or 2. 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."

L. 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 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.

M. 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.

N. Permit 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.

O. Monitoring Reports - (See Part IV of the General Permit)

P. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

Q. Twenty-Four Hour Reporting

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. This oral report must be made to the Water Protection Bureau at (406) 444-3080.
2. A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
3. The following must be included as information which must be reported within 24 hours:
 - a. any unanticipated bypass which exceeds any effluent limitation in the permit;
 - b. any upset which exceeds any effluent limitation in the permit;
 - c. violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours; and
4. The Department 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.
5. Reports shall be submitted to the address in Part IV.E., Reporting of Monitoring Results.

R. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Part IV. or Parts V.L., P., or Q. at the time monitoring reports are submitted. The reports must contain the information listed Part V.Q. above.

S. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

T. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. and 3. below.
2. Notice:
 - a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least 10 days before the date of the bypass.
 - b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part V.Q. (Twenty-Four Hour Reporting).
3. Prohibition of bypass.
 - a. Bypass is prohibited and the Department may take enforcement action against a permittee for a bypass, unless:
 - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,
 - iii. The permittee submitted notices as required under Part V.T.2. above.
4. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in Part V.T.3.i.

U. Upset

1. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Part V.U.2. below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. an upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. the permitted facility was at the time being properly operated;
 - c. the permittee submitted notice of the upset as required in Part V.Q.3.b. (24-hour notice); and
 - d. the permittee complied with any remedial measures required under Part V.D.
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

V. 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 a civil penalty 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. Except as provided in permit conditions on Part III.G. (Bypass of Treatment Facilities), nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

W. 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 both.

X. 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.

Y. 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.

Z. Reopener Provision

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 effluent limits than contained in this permit.

2. Waste Load Allocation

A Waste Load Allocation is developed and approved by the Department and/or EPA for incorporation in this permit.

3. 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.

AA.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 consisting of 20% of the fee plus interest on the required fee computed at the rate established under 15-1-216(4), MCA, or
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.

PART VI. 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. "**Hazardous substance**" means any substance designated under 40 CFR Part 116 pursuant to section 311 of the federal Clean Water Act.
8. "**Illicit Connection**" means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.
9. "**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 fire fighting activities.
10. "**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).
11. "**MS4**" means a municipal separate storm sewer system.
12. "**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:
 - (i) designed or used for collecting or conveying storm water;
 - (ii) not a combined sewer; and
 - (iii) not part of a publicly owned treatment works (POTW) as defined in ARM Title 17, chapter 30, subchapter 13.
- 13. **"Outfall"** means a point source, as defined in Part VI.15. of this General Permit, at the point where a municipal separate storm sewer discharges to surface waters. 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.
- 14. **"Owner or operator"** means a person who owns, leases, operates, controls, or supervises a point source.
- 15. **"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.
- 16. **"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.
- 17. **"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.
18. **"Small MS4"** means a small municipal separate storm sewer system.
19. **"State waters"** is defined at 75-5-103, MCA
20. **"Storm Water"** means storm water runoff, snow melt runoff, and surface runoff and drainage.
21. **"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.
22. **"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.
23. **"Time-weighted composite sample"** means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.
24. **"Total Maximum Daily Load" or "TMDL"** is defined at 75-5-103, MCA
25. **"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.



Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

May 19, 2010

Yellowstone County

Attn: Bill Kennedy, Yellowstone County Commission Chairman c/o Mike Black,
Yellowstone County Civil Engineer

P.O. Box 35024
Billings, MT 59107

Montana Department of Transportation

Attn: Dwane Kailey, Chief Operations Officer c/o Stefan Streeter, Billings District
Administrator

424 Morey Street, P.O. Box 20437
Billings, MT 59104-0437

RE: Authorization Letter: Yellowstone County Small MS4 and Montana Department
of Transportation Small MS4
Authorization Number MTR040010

Dear Mr. Kennedy and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The initial application was received on December 10, 2009, a revised application on March 24, 2010, and the revised complete application on May 13, 2010 and May 17, 2010. In accordance with the provisions of the General Permit, the Department authorizes Yellowstone County (County) and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Alkali Creek (for County and MDT);
Blue Creek (for County and MDT);
Canyon Creek (for County and MDT);
City/County Drain (for County and MDT);
Five-Mile Creek (for County and MDT);
Yellowstone River (for County and MDT);
Yegen Drain (for County and MDT);
Billings Bench Water Association (BBWA) Canal (for County and MDT);
Shiloh Drain (for County and MDT);

Grey Eagle Ditch (for County and MDT);
Suburban Ditch (for County and MDT);
Dry Creek (for County and MDT);
Lockwood Ditch (for County and MDT);
Coulson Ditch (for County and MDT);
Unnamed tributary to Blue Creek (for County and MDT);
Unnamed tributary to Dry Creek (for County and MDT);
Cove Creek (for County);
Cove Ditch (for County);
Snow Ditch (for County);
Arnold Drain (for County);
Holling Drain (for County); and,
Canyon Creek Ditch (for County).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area (outside of City of Billings limits) and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

In accordance with Part III.A. of the General Permit, the County's and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

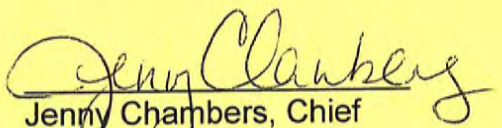
Permit Authorization MTR040010
Page 3 of 3
May 19, 2010

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.


Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



Brian Schweitzer, Governor
Richard H. Opper, Director

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March 18, 2010

City of Billings

Attn: Christina F. Volek, City Administrator c/o Boris A. Krizek, Environmental Engineer
P.O. Box 30958 (2251 Belknap Ave.)
Billings, MT 59111

Montana Department of Transportation

Attn: Dwane Kailey, Chief Operations Officer c/o Stefan Streeter, Billings District
Administrator
424 Morey Street, P.O. Box 20437
Billings, MT 59104-0437

RE: Authorization Letter: City of Billings Small MS4 and Montana Department of
Transportation Small MS4
Authorization Number MTR040001

Dear Ms. Volek and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The initial application was received on November 27, 2009, a partial revised application on February 3, 2010, and the revised complete application on March 12, 2010. In accordance with the provisions of the General Permit, the Department authorizes the City of Billings (City) and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

- Alkali Creek (for City and MDT);
- Blue Creek (for City);
- Canyon Creek (for City and MDT);
- City/County Drain (for City and MDT);
- Cove Creek (for City);
- Five-Mile Creek (for City);
- Hogan's Slough (for City);
- Yellowstone River (for City and MDT);
- Yegen Drain (for City and MDT);
- Big Ditch (for City);

Billings Bench Water Association (BBWA) Canal (for City and MDT);
Cove Ditch (for City);
High Ditch (for City);
Snow Ditch (for City);
Arnold Drain (for City);
Shiloh Drain (for City and MDT);
Spring Creek (for City);
Grey Eagle Ditch (for City and MDT);
Suburban Ditch (for City and MDT);
Lake Elmo (for City);
Holling Drain (for City and MDT); and,
Canyon Creek Ditch (for City and MDT).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area (portion within City of Billings limits) and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and

March 18, 2010

certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.

In accordance with Part III.A. of the General Permit, the City's and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.

A handwritten signature in blue ink that reads "Jenny Chambers".

Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000

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FEB 24 2010



Montana Department of
ENVIRONMENTAL QUALITY

DEPT. OF TRANSPORTATION
BUTTE, MONTANA 59701

Brian Schweitzer, Governor
Richard H. Opper, Director

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February 22, 2010

City of Bozeman

Attn: Chris A. Kukulski, City Manager c/o Debbie Arkell, Director of Public Service

P.O. Box 1230

Bozeman, MT 59771-1230

Montana State University - Bozeman

Attn: Robert V. Lashaway, Associate Vice President Administration and Finance c/o

Jeff Butler, Director – Facilities Services

P.O. Box 172760

Bozeman, MT 59717

Montana Department of Transportation

Attn: Dwane Kailey, Chief Operations Officer c/o Jeffrey M. Ebert, Butte District
Administrator

3751 Wynne Avenue, P.O. Box 3068

Butte, MT 59702-3068

RE: Authorization Letter: City of Bozeman Small MS4; Montana State University -
Bozeman Small MS4; and, Montana Department of Transportation Small
MS4

Authorization Number MTR040002

Dear Mr. Kukulski, Mr. Lashaway, and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The initial application was received on November 25, 2009, a partial revised application on January 4, 2010 and January 6, 2010, and the revised complete application on February 16, 2010. In accordance with the provisions of the General Permit, the Department authorizes the City of Bozeman (City), Montana State University – Bozeman (MSU), and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Spring Creek (for City);
Bozeman Creek (for City and MDT);

Bridger Creek (for City);
East Gallatin River (for City and MDT);
Farmers Canal (for City and MSU);
Bear Creek (for City);
Baxter Creek (for City and MDT);
Maynard Border Ditch (for City and MDT);
Mandeville Creek (for City and MSU);
Middle Creek Ditch (for City and MSU);
West Gallatin Canal (for MSU); and,
Unnamed Ditch - West End MSU Boundary (for MSU).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.

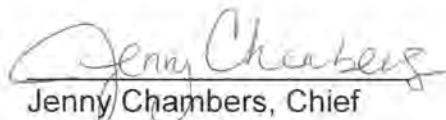
In accordance with Part III.A. of the General Permit, the City's, MSU's, and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.



Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



**Montana Department of
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JAN 19 2010

DEPT. OF TRANSPORTATION
BUTTE, MONTANA 59701
Brian Schweitzer, Governor
Richard H. Opper, Director

January 14, 2010

City and County of Butte-Silver Bow
Attn: Paul David Babb, Chief Executive c/o Dan Dennehy, Director of Public Works
126 West Granite Street
Butte, MT 59701

Montana Department of Transportation
Attn: Dwane Kailey, Chief Operations Officer c/o Jeffrey M. Ebert, Butte District
Administrator
3751 Wynne Avenue, P.O. Box 3068
Butte, MT 59702-3068

RE: Authorization Letter: City of Butte Small MS4 and Montana Department of
Transportation Small MS4
Authorization Number MTR040006

Dear Mr. Babb and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The complete application was received on November 25, 2009 and December 17, 2009 (fee). In accordance with the provisions of the General Permit, the Department authorizes the City and County of Butte-Silver Bow (City) and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Blacktail Creek (for City and MDT);
Silver Bow Creek (for City and MDT);
Basin Creek (for City and MDT);
Sand Creek (for City and MDT); and,
Grove Gulch Creek (for City and MDT).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.

In accordance with Part III.A. of the General Permit, the City's and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Permit Authorization MTR040006
Page 3 of 3
January 14, 2010

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.



Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



LINE	ITEM
	BUTTE DISTRICT
	DISTRICT ADMINISTRATOR
	DIST. CONST. SUPERV.
	ASST. DIST. CONST. SUPERV.
	FIELD PROJ. MGRS.
	ENGR. OFFICER
1	ENGR. SERV. SUPERV.
	RAW
	DESIGN
	LAB
	TRAFFIC
	UTILITIES
2	DIST. PROJ. ENG.
	PERSONNEL SPEC.
	DIST. PLNG. OFFICER
3	CH. P.C. UNIT
4	MAINT. UPTS. UNIT
5	SHOP UPTS. UNIT
	PLM. EN. SUPERV. AT M
	MAINT. SUPERV. SWS
	LAND SURVEY
6	ENV. ENG.



Montana Department of

ENVIRONMENTAL QUALITY

REC'D BY MT DEPT
OF TRANSPORTATION
GREAT FALLS

JAN 19 AM 10:34

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

January 14, 2010

City of Great Falls

Attn: Gregory T. Doyon, City Manager c/o Jim Young, Senior Civil Engineer

P.O. Box 5021

Great Falls, MT 59403

Cascade County

Attn: Joe Briggs, Board of County Commissioners Chairman c/o David L. Sutton, Road
& Bridge Department Director

279 S. Vaughn Frontage Road

Great Falls, MT 59404

Montana Department of Transportation

Attn: Dwane Kailey, Chief Operations Officer c/o Michael P. Johnson, Great Falls
District Administrator

200 Smelter Avenue NE, P.O. Box 1359

Great Falls, MT 59403-1359

RE: Authorization Letter: City of Great Falls Small MS4; Cascade County Small MS4;
and, Montana Department of Transportation Small MS4
Authorization Number MTR040004

Dear Mr. Doyon, Mr. Briggs, and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The complete application was received on November 30, 2009, with a resubmitted clarification on December 29, 2009. In accordance with the provisions of the General Permit, the Department authorizes the City of Great Falls (City), Cascade County (County), and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Missouri River (for City, County, and MDT);
Sun River (for City, County, and MDT); and,
Sand Coulee Creek (for City, County, and MDT).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.

In accordance with Part III.A. of the General Permit, the City's, County's, and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

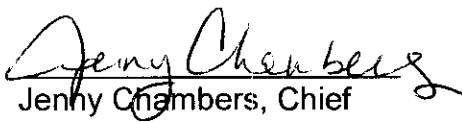
Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

Permit Authorization MTR040004
Page 3 of 3
January 14, 2010

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.


Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



**Montana Department of
ENVIRONMENTAL QUALITY**

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JAN 19 2010

DEPT. OF TRANSPORTATION
BUTTE, MONTANA 59701

Brian Schweitzer, Governor
Richard H. Opper, Director

January 14, 2010

Montana Department of Transportation
Attn: Dwane Kailey, Chief Operations Officer c/o Jeffrey M. Ebert, Butte District
Administrator
3751 Wynne Avenue, P.O. Box 3068
Butte, MT 59702-3068

RE: Authorization Letter: Montana Department of Transportation Small MS4 *HELENA*
Authorization Number MTR040009

Dear Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The initial application was received on November 25, 2009, a revised application on January 7, 2010, and a complete application on January 13, 2010 (fee). In accordance with the provisions of the General Permit, the Department authorizes the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4 into the following receiving surface waters:

Tenmile Creek;
Prickly Pear Creek; and,
Helena Valley Canal.

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The permittee's Small MS4 under this permit authorization will be that within the permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. The permittee must submit an annual report pertaining to their permitted Small MS4 unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual report must completely address all Small MS4 discharges regulated under this permit authorization. For the permittee's Small MS4, ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

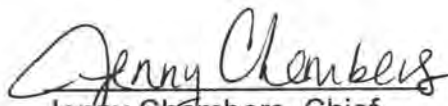
In accordance with Part III.A. of the General Permit, MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.



Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000

BUTTE DISTRICT	
	DISTRICT ADMINISTRATOR
	DIST. CONST. SUPERV.
	ASST. DIST. CONST. SUPERV.
	FIELD PROJ. MGRS.
	ENGR. OFFICER
	ENGR. SERV. SUPERV.
	RAW
	DESIGN
	LAB
	TRAFFIC
	UTILITIES
	DIST. PROJ. ENG.
	PERSONNEL SPEC.
	DIST. FINANC. OFFICER
	CH. FLD. MAINT. BY BO
	MAINT. SUPTS. BY BO
	SHOP SUPTS. BY BO
	FLD. REC. SUPERV. BY BO
	MAJOR CARRIER SRVS.
	LAND SURVEYOR
	ENV. ENGR.

Handwritten notes: "50" next to "ENGR. OFFICER", "JMW" next to "TRAFFIC", "2" next to "DIST. PROJ. ENG.", "1" next to "PERSONNEL SPEC.", "1" next to "DIST. FINANC. OFFICER", "1" next to "CH. FLD. MAINT. BY BO", "1" next to "MAINT. SUPTS. BY BO", "1" next to "SHOP SUPTS. BY BO", "1" next to "FLD. REC. SUPERV. BY BO", "1" next to "MAJOR CARRIER SRVS.", "1" next to "LAND SURVEYOR", "1" next to "ENV. ENGR."



Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor
Richard H. Opper, Director

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January 14, 2010

City of Kalispell
Attn: Jane Howington, City Manager c/o James Hansz, Director of Public Works & City Engineer
P.O. Box 1997
Kalispell, MT 59903-1997

Montana Department of Transportation
Attn: Dwane Kailey, Chief Operations Officer c/o Doug Moeller, Missoula District Administrator
2100 W Broadway, P.O. Box 7039
Missoula, MT 59807-7039

RE: Authorization Letter: City of Kalispell Small MS4 and Montana Department of Transportation Small MS4
Authorization Number MTR040005

Dear Ms. Howington and Mr. Kailey:

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The complete application was received on November 24, 2009. In accordance with the provisions of the General Permit, the Department authorizes the City of Kalispell (City) and the Montana Department of Transportation (MDT) to discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Whitefish River (for City);
Stillwater River (for City and MDT);
Ashley Creek (for City and MDT);
Spring Creek (for City and MDT);
Bowser-Spring Creek (for City and MDT); and,
Unnamed perennial surface water-tributary to Ashley Creek from Foy's Lake (for City).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations,

self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.

In accordance with Part III.A. of the General Permit, the City's and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

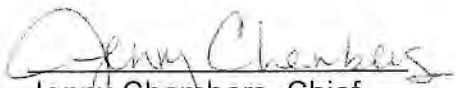
Permit Authorization MTR040005

Page 3 of 3

January 14, 2010

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.

A handwritten signature in cursive script, appearing to read "Jenny Chambers", is written over a horizontal line.

Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.dem.mt.gov

[illegible]

Attn: John Engen, Mayor c/o R. Steven King, Public Works Director
435 Ryman Street
Missoula, MT 59802-4297

Attn: Bill Carey, Board of County Commissioners Chairman c/o Tim Elsea, County
Engineer
6089 Training Drive
Missoula, MT 59808

Attn: Kevin A. Krebsbach, Associate Director c/o Hugh Jesse, Facilities Services
Director
Building 32, Campus Drive
Missoula, MT 59812

Attn: Dwane Kailey, Chief Operations Officer c/o Doug Moeller, Missoula District
Administrator
2100 W Broadway, P.O. Box 7039
Missoula, MT 59807-7039

RE: Authorization Letter: City of Missoula Small MS4; Missoula County Small MS4;
University of Montana Small MS4; and, Montana Department of
Transportation Small MS4
Authorization Number MTR040007

The Department has reviewed your application to discharge storm water from the above referenced municipal separate storm sewer systems and has determined that these qualify for coverage under the Department's January 1, 2010 *General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4)*, MTR040000 (General Permit). The complete application was received on November 24, 2009. In accordance with the provisions of the General Permit, the Department authorizes the City of Missoula (City), Missoula County (County), the University of Montana (UM), and the Montana Department of Transportation (MDT) to

discharge storm water from the above referenced Small MS4s into the following receiving surface waters:

Clark Fork River (for City, County, MDT, and UM);
Bitterroot River (for City, County, MDT, and UM);
Rattlesnake Creek (for City, County, and MDT);
Grant Creek (for City, County, and MDT);
Pattee Creek (for City, County, MDT, and UM); and,
Butler Creek (for County and MDT).

The General Permit is valid only when accompanied by this authorization letter. A copy of the General Permit is enclosed. Please take special note of the effluent limitations, self-monitoring and reporting requirements and any special conditions in the General Permit.

Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by the Department pursuant to the Montana Water Quality Act.

The co-permittee's Small MS4 under this permit authorization will be those within the urbanized area and permitted area as identified in the permittee's application.

Part IV.I. of the General Permit provides requirements for annual reports. Each co-permittee must submit an annual report pertaining to their permitted Small MS4(s) unless formal shared responsibilities allow another entity to complete your annual report obligations for you. The annual reports must completely address all Small MS4 discharges regulated under this permit authorization. For each co-permittee's Small MS4(s), ensure you address all required items for the annual reports as stated in the General Permit and the standard annual reporting form, including appropriate certifications and signatures. A new annual report submittal date of March 1st will initiate with the report to be submitted for the 2010 calendar year.

Permittees are subject to the self-monitoring and reporting requirements stated in Part IV of the General Permit. For the City, these requirements include monitoring two storm water discharge sampling locations as specified in the General Permit. Discharge Monitoring Report (DMR) forms will be sent to the contact person identified in your application. These forms must be completed and submitted at the frequency specified in the General Permit even if no discharge occurs during the period. All information or reports, including DMRs that are required by the General Permit must be signed and certified as specified in the General Permit and submitted to the Department at the address given in the General Permit. Failure to submit DMR forms, as identified in the General Permit, is a violation of the General Permit.


In accordance with Part III.A. of the General Permit, the City's, County's, UM's, and MDT's SWMP must address the pollutants of concern for which the receiving water bodies are listed on the State's 303(d) list. This discussion must specifically address Best Management Practices that will address the pollutants of concern.

Annual fees are based on ARM 17.30.201. Annual fees are assessed for each calendar year in which the authorization remains active.

Issuance of a permit authorization under this General Permit does not waive obligations to obtain other permits that may be required.

This authorization is issued pursuant to the Montana Pollutant Discharge Elimination System (MPDES) program under the authority of 75-5-402, MCA, of the Montana Water Quality Act and Section 402 and 303 of the federal Clean Water Act.

Please include your permit authorization number on any correspondence or communication with the Department. If you have any questions, feel free to contact the Water Protection Bureau at (406) 444-3080.


Jenny Chambers, Chief
Water Protection Bureau
Permitting & Compliance Division

Enclosure: General Permit MTR040000



Montana Department of
ENVIRONMENTAL QUALITY

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DEC 23 2014

ENVIRONMENTAL

Steve Bullock, Governor
Tracy Stone-Manning, Director

P. O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • Website: www.deq.mt.gov

December 19, 2014

Tom Martin, MDT Environmental Services Bureau Chief
Montana Department of Transportation
PO Box 201001
Helena, MT 59620

MASTER FILE
COPY

Re: Notice Of Completeness, Montana Department of Transportation, Montana Pollutant Discharge Elimination System (MPDES) Permit MT0031844

Dear Tom Martin:

The Montana Department of Environmental Quality (Department) received a submitted application for the above-referenced individual MPDES permit on November 24, 2014. The Department has reviewed the application for completeness and determined the application is substantially complete [Administrative Rules of Montana (ARM) 17.30.1322].

The Notice of Completeness applies to the submitted Department forms and supplemental documents signed and dated November 24, 2014 (ARM 17.30.1364(5)). If any additional information is needed during the process of drafting the permit, the Department will contact you.

In accordance with ARM 17.30.1313, your current permit(s) will be administratively extended should the Department fail to issue an individual permit prior to your current permit(s) expiration. An administratively extended permit remains in full force and effect until such time as the Department issues your individual permit.

If you have any questions regarding your MPDES permit, I can be reached directly at (406) 444-5326 or email cdavies@mt.gov.

Sincerely,

Carolina Davies
MT Dept of Environmental Quality
Water Protection Bureau

✓ cc: Douglas Lieb, MDT Statewide Project Development Engineer

Appendix B

Standard Operating Procedures and Manuals

MCM	Document Name	Document Type	Form Number	Last Revised
Program-Wide	MS4 Data Management Plan	Guidance	N/A	November 2021
	MS4 Data Manager Email Distribution	Guidance	N/A	April 2017
	MS4 Annual Report	MDEQ Guidance	N/A	January 2016
	Butte MS4 Boundary	MDEQ Guidance	N/A	August 2021
	Storm Water Management Program Yearly Tracking Calendar	Spreadsheet	N/A	January 2024
	MS4 Storm Water Monitoring Plan	Guidance	N/A	October 2023
	Storm Water Management Feedback	Online Form	MDT-ENV-021	March 2024
	Training Sign-In Sheet	Form	N/A	August 2014
	MS4 Local Requirements	Spreadsheet	N/A	May 2024
3 - IDDE	MS4 Mapping Update Procedure	Guidance	N/A	March 2021
	MS4 Outfall Inventory Guidance	Guidance	N/A	February 2021
	MS4 Inlet and Other Storm Water Infrastructure Mapping Guidance	Guidance	N/A	March 2022
	Illicit Discharge Investigation and Corrective Action Plan	Guidance	N/A	January 2024
	MDT Outfall Visual Assessment (Dry Weather Screening)	Form	MDT-ENV-017	February 2022
	Illicit Discharge Incident Report	Form	MDT-ENV-012	September 2021
3 – IDDE 4-Construction Site Storm Water Management	MS4 Enforcement Response Plan	Guidance	N/A	December 2021

MCM	Document Name	Document Type	Form Number	Last Revised
5-Post-Construction Site Storm Water Management	Post-Construction Guidance Manul	Guidance	Pending	N/A
3 – IDDE 5-Post-Construction Site Storm Water Management	Maintenance Agreement Locations	Guidance	N/A	October 2020
3 – IDDE 4- Construction Site Storm Water Management	Management Memo: Reporting Environmental Violations to Regulatory Agencies	Guidance	03-01	March 2008
5-Post-Construction Site Storm Water Management 6 – Pollution Prevention and Good Housekeeping	IDDE Field Guide for Construction and Maintenance Staff	Guidance	N/A	July 2023
4-Construction Site Storm Water Management	Erosion and Sediment Control BMP Manual	Manual	N/A	December 2016
	Environmental Construction Inspection	Form	MDT-ENV-010	April 2023
	BMP Inspection Report	Form	MDT-ENV-004	April 2023
	Construction Stormwater Management Plan Review Checklist	Form	MDT-ENV-023	November 2023
	Water Pollution Control Inspection Report	Form	MDT-ENV-014	January 2016
4-Construction Site Storm Water Management	MS4 Construction and Post-Construction DEES Inspection Procedures	Guidance	N/A	February 2016
	MPDES/NPDES Permit Close-out Checklist	Form	MDT-ENV-105_17_Checklist	April 2014

MCM	Document Name	Document Type	Form Number	Last Revised
5-Post-Construction Site Storm Water Management	Preliminary MPDES/NPDES Permit Walk-through	Form	MDT-ENV-105_17_1A	November 2014
	Final MPDES/NPDES Permit Walk-through	Form	MDT-ENV-105_17_1B	November 2014
	MPDES/NPDES Final Stabilization Inspection	Form	MDT-ENV-018	August 2017
5-Post-Construction Site Storm Water Management	Permanent Erosion and Sediment Control Design Guidelines	Manual	N/A	January 2018
	MS4 Definition of Redevelopment	Guidance	N/A	June 2016
	Low Impact Development Practice Analysis	Form	MDT-ENV-007	May 2023
	Categorical Exclusion Documentation	Form	MDT-ENV-020	April 2023
	Offsite Treatment Criteria and Approval Process	Guidance	N/A	Pending
	PS&E Review Guidance for Projects Located in MS4s	Guidance	N/A	February 2021
	MDT Environmental Checklist	Form	MDT-ENV-006	April 2017
	Post-Construction Guidance Manual	Guidance	N/A	Pending
6 – Pollution Prevention and Good Housekeeping	Maintenance Operations and Procedures Manual	Manual	N/A	December 2009
	FPPPs	Plans	N/A	Varies
	FPPP Inspection Transmittal Procedure	Guidance	N/A	July 2015
	FPPP Inspection Checklist	Form	MDT-ENV-008	January 2023
	Annual FPPP Inspection Summary	Form	MDT-ENV-032	March 2024
	FPPP Update and Training Procedures	Guidance	N/A	June 2023
	Good Housekeeping / Pollution Prevention Poster	Poster	N/A	12/23
	Statewide Integrated Roadside Vegetation Management Plan	Plan	N/A	February 2018

Appendix C

Impaired Waterbodies

The following tables outline the findings as of 2020 specific to each MDT Permit Authorization. For those causes of impairment with a Total Maximum Daily Load (TMDL) and a Waste Load Allocation (WLA) designated as not applicable (N/A) in the table below, a TMDL and WLA would not be developed for this cause of impairment but would be developed for an associated pollutant (e.g., algae would not have a WLA, but a WLA would be developed for nitrogen and phosphorus.)

MDT Permit Authorization: MTR040001 Billings MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL ¹	TMDL Assigned WLA to MS4
Canyon Creek (MT43F002_021)	No	Flow regime modification	N/A	N/A
Yellowstone River (MT43F001_010)	Yes	Algae	N/A	N/A
		Arsenic	No	TBD
		Benthic Macroinvertebrates	N/A	N/A
		Dissolved Oxygen	No	TBD
		Eutrophication	No	TBD
		Oil and Grease	No	TBD
		Periphyton (Aufwuchs) Indicator Bioassessments	N/A	N/A
		Sediment	No	TBD
Yellowstone River (MT43F001_011)	Yes	Cause Unknown	N/A	N/A
		Chlorophyll-a	N/A	N/A
		Nitrate/Nitrite (Nitrite + Nitrate as N)	No	TBD
		Oil and Grease	No	TBD
		Other anthropogenic substrate alterations	N/A	N/A
		Physical substrate habitat alterations	N/A	N/A

N/A = Not Applicable

TBD = To Be Determined

¹ Yellowstone Watershed is listed as a MDEQ priority area scheduled for TMDL completion after 2022.

MDT Permit Authorization: MTR040002 Bozeman MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4 ²
Bridger Creek (MT41H003_110)	No	Chlorophyll-a	N/A	N/A
		Nitrate/Nitrite (Nitrite + Nitrate as N)	Yes	Yes*
Bear Creek (MT41H003_081)	No	Algae	N/A	N/A
		Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Phosphorus (Total)	Yes	No
		Sedimentation-Siltation	Yes	Yes**
East Gallatin River (MT41H003_010)	Yes	Nitrogen (Total)	Yes	Yes*
		Phosphorus (Total)	Yes	Yes*
Mandeville Creek (MT41H003_021)	Yes	Nitrogen (Total)	Yes	Yes*
		Phosphorus (Total)	Yes	Yes*
Sourdough (Bozeman Creek) (MT41H003_040)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Chlorophyll-a	N/A	N/A
		Escherichia coli	Yes	Yes*
		Nitrogen (Total)	Yes	Yes*
		Sedimentation-Siltation	Yes	Yes**

*The MS4s were assigned a WLA of 0 pounds per day (lbs/day) when the storm water system is not activated. When the storm water system is activated, MDEQ assumes the WLAs are met by adhering to the permit requirements and using monitoring as an adaptive management approach to minimize pollutant loads (MDEQ, 2017).

**Percent reduction allocations were developed for the MS4s. MDEQ assumes adhering to permit Best Management Practices (BMPs) and other requirements equates to meeting the WLAs (MDEQ, 2017).

N/A = Not Applicable

² Per MDEQ's 2017 *General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems* (MDEQ, 2017), WLAs apply to all MS4s that were co-permittees at the time of the *Lower Gallatin Planning Area TMDLs and Framework Water Quality Improvement Plan* (MDEQ, 2013) development; therefore, WLAs are aggregated and not individually assigned to each MS4.

MDT Permit Authorization: MTR040004 Great Falls MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL ³	TMDL Assigned WLA to MS4
Missouri River (MT41Q001_011)	Yes	Chromium (total)	No	TBD
		Mercury	No	TBD
		Physical substrate habitat alterations	N/A	N/A
		Polychlorinated biphenyls	No	TBD
		Sedimentation-Siltation	No	TBD
		Selenium	No	TBD
		Turbidity	No	TBD
Missouri River (MT41Q001_022)	No	Sedimentation-Siltation	No	TBD
Sand Coulee Creek (MT41Q002_040)	No	Lead	No	TBD
		Salinity	No	TBD
		Zinc	No	TBD
Sun River (MT41K001_020)	Yes	Flow regime modification	N/A	N/A
		Nitrogen (Total)	Yes	No
		Phosphorus (Total)	Yes	No*
		Sedimentation-Siltation	Yes	No
		Total Suspended Solids (TSS)	Yes	No

*Although no MS4 WLAs were developed for the Lower Sun River, 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 (MDEQ, 2017).

N/A = Not Applicable

TBD = To Be Determined

³ Missouri River – Three Forks to Marias Watershed is listed as a MDEQ priority area scheduled for TMDL completion after 2022.

MDT Permit Authorization: MTR040005 Kalispell MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4
Middle Ashley Creek (MT76O002_020)	Yes	Flow regime modification	N/A	N/A
		Nitrogen (Total)	Yes	Yes*
		Phosphorus (Total)	Yes	Yes*
		Sedimentation-Siltation	Yes	Yes*
		Temperature	Yes	No**
Lower Ashley Creek (MT76O002_030)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Chlorophyll-a	N/A	N/A
		Dissolved Oxygen	Yes	No
		Nitrate-Nitrite (Nitrite + Nitrate as N)	Yes	No
		Nitrogen (Total)	Yes	Yes*
		Phosphorus (Total)	Yes	Yes*
		Sedimentation-Siltation	Yes	Yes*
		Temperature	Yes	No**
Spring Creek (MT76O002_040)	Yes	Alteration in stream-side or littoral	N/A	N/A
		Arsenic	No	TBD
		Dissolved Oxygen	Yes	No
		Flow Regime Modification	N/A	N/A
		Nitrate-Nitrite (Nitrite + Nitrate as N)	Yes	No
		Nitrogen (Total)	Yes	Yes*
		Phosphorus (Total)	Yes	Yes*
		Physical substrate habitat alterations	N/A	N/A
Stillwater River (MT76P001_010)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Sedimentation-Siltation	Yes	Yes*

*Percent reduction allocations were developed for the City of Kalispell MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs (MDEQ, 2017).

**Although no MS4 WLAs were developed for Ashley Creek, to meet the intent of the TMDL goals and future recommendations, City of Kalispell MS4 must follow the minimum control measures provided in the MPDES permit authorization for permit MTR04005, or any subsequent permit renewals (MDEQ, 2014).

N/A = Not Applicable

TBD = To Be Determined

MDT Permit Authorization: MTR040006 Butte MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4
Silver Bow Creek* (MT76G003_020)	Yes	Arsenic	Yes	Yes*
		Cadmium	Yes	Yes*
		Copper	Yes	Yes*
		Lead	Yes	Yes*
		Mercury	Yes	Yes*
		Nitrate	Yes	No
		Nitrogen (Total)	Yes	Yes**
		Phosphorus (Total)	Yes	Yes**
		Physical substrate habitat alterations	N/A	N/A
		Sedimentation-Siltation	Yes	Yes***
		Zinc	Yes	Yes*

*The WLAs in lbs/day were assigned to the Butte-Silver Bow MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs (MDEQ, 2017).

** The Butte-Silver Bow MS4 was assigned a WLA of 0 lbs/day when the storm water system is not activated. When the storm water system is activated, MDEQ assumes the WLAs are met by adhering to the permit requirements and using monitoring as an adaptive management approach to minimize pollutant loads (MDEQ, 2017).

***Percent reduction allocations were developed for the Butte-Silver Bow MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs (MDEQ, 2017).

N/A = Not Applicable

MDT Permit Authorization: MTR040007 Missoula MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4
Bitterroot River (MT76H001_030)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Lead	Yes	No
		Temperature	Yes	No
Clark Fork River (MT76E001_010)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Arsenic	Yes	No
		Cadmium	Yes	No
		Chlorophyll-a	N/A	N/A
		Copper	Yes	No
		Iron	Yes	No
		Lead	Yes	No
		Mercury	Yes	No
		Nitrogen (Total)	Yes	No
		Phosphorus (Total)	Yes	No
		Zinc	Yes	No
Clark Fork River (MT76M001_020)	Yes	Chlorophyll-a	Yes	No
		Copper	Yes	Yes*
		Iron	Yes	Yes*
		Lead	Yes	Yes*
		Nitrogen (Total)	Yes	No
		Organic Enrichment	Yes	No
		Phosphorus (Total)	Yes	No
Clark Fork River (MT76M001_030)	Yes	Arsenic	Yes	Yes*
		Cadmium	Yes	Yes*
		Copper	Yes	Yes*
		Iron	Yes	Yes*
		Lead	Yes	Yes*
		Eutrophication	Yes	Yes*
		Zinc	Yes	Yes*
Grant Creek (MT76M002_130)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Algae	N/A	N/A
		Flow regime modification	N/A	N/A
		Nitrate/Nitrite (Nitrite + Nitrate as N)	Yes	Yes*
		Nitrogen (Total)	Yes	Yes*
		Sedimentation-Siltation	Yes	Yes*
		Temperature	Yes	Yes

*Percent reduction allocations were assigned to the Missoula MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs (MDEQ, 2017).

N/A = Not Applicable

MDT Permit Authorization: MTR040009 Helena MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4
Prickly Pear Creek (MT41I006_030)	No	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Ammonia (Un-ionized)	No	TBD
		Arsenic	Yes	No
		Cadmium	Yes	No
		Copper	Yes	No
		Lead	Yes	No
		Flow regime modifications	N/A	N/A
		Nitrogen (Total)	Yes	No*
		Phosphorus (Total)	Yes	No*
		Physical substrate habitat alterations	N/A	N/A
		Sedimentation-Siltation	Yes	No*
		Temperature	No	TBD
		Zinc	Yes	No
Prickly Pear Creek (MT41I006_040)	No	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Arsenic	Yes	No
		Cadmium	Yes	No
		Copper	Yes	No
		Lead	Yes	No
		Physical substrate habitat alterations	N/A	N/A
		Sedimentation-Siltation	Yes	No*
		Temperature	Yes	No
		Zinc	Yes	No
Tenmile Creek (MT41I006_143)	Yes	Alteration in stream-side or littoral vegetative covers	N/A	N/A
		Arsenic	Yes	No
		Cadmium	Yes	No
		Copper	Yes	No
		Lead	Yes	No
		Flow regime modifications	N/A	N/A
		Nitrogen (Total)	Yes	No*
		Eutrophication	Yes	No
		Phosphorus (Total)	Yes	No*
		Sedimentation-Siltation	Yes	No*
		Zinc	Yes	No

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL	TMDL Assigned WLA to MS4
Lake Helena (MT41I007_010)	No	Arsenic	Yes	No
		Lead	Yes	No
		Nitrogen (Total)	Yes	No*
		Phosphorus (Total)	Yes	No*

*Although no MS4 WLAs were developed for Tenmile Creek and Prickly Pear Creek (both discharge to Lake Helena), 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 (MDEQ, 2017).

N/A = Not Applicable

TBD = To Be Determined

MDT Permit Authorization: MTR040010 Yellowstone County MS4

Impaired Water	MDT Outfall Discharging to Waterbody?	Impairment	Approved TMDL ⁴	TMDL Assigned WLA to MS4
Yellowstone River (MT43F001_010)	Yes	Algae	N/A	N/A
		Arsenic	No	TBD
		Benthic Macroinvertebrates	No	TBD
		Dissolved Oxygen	No	TBD
		Eutrophication	No	TBD
		Oil and Grease	No	TBD
		Periphyton (Aufwuchs) Indicator Bioassessments	No	TBD
		Sediment	No	TBD
Yellowstone River (MT43F001_011)	Yes	Cause Unknown	N/A	N/A
		Chlorophyll-a	N/A	N/A
		Nitrate/Nitrite (Nitrite + Nitrate as N)	No	TBD
		Oil and Grease	No	TBD
		Other anthropogenic substrate alterations	N/A	N/A
		Physical substrate habitat alterations	N/A	N/A

N/A = Not Applicable

TBD = To Be Determined

⁴ Yellowstone Watershed is listed as a MDEQ priority area scheduled for TMDL completion after 2022.

Appendix D

MDT MS4 Storm Water Monitoring Plan

**MONTANA DEPARTMENT OF TRANSPORTATION
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER MONITORING PLAN**

Prepared for:



Montana Department of Transportation

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Helena, MT 59620

Prepared by:



WESTON SOLUTIONS, INC.

805 N. Last Chance Gulch

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October 2023



Revision History Table

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LIST OF ACRONYMS

μmhos/cm	Microohms per centimeter
BMP	Best Management Practice
°C	degrees Celsius
CFR	Code of Federal Regulations
COC	Chain-of-custody
COD	Chemical Oxygen Demand
CWAIC	Clean Water Act Information Center
DNS	Did Not Sample
EPA	Environmental Protection Agency
GPM	gallons per minute
HPDE	high-density polyethylene
ID	Sample identifier
L	liter
mA	milliampere
mL	milliliter
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
mg/L	Milligrams per Liter
MPN	Most probable number
MS4	Municipal Separate Storm Sewer System
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NTU	Nephelometric Turbidity Units
PCB	Polychlorinated Biphenyls
Permit	MDEQ 2022 General Permit for Storm Water Discharges Associated with Small MS4s
pH	potential of hydrogen
Plan	MS4 Storm Water Monitoring Plan
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
s.u.	Standard Units
SWMP	Storm Water Management Program
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
WLA	Wasteload Allocations

1.0 Introduction

The Montana Department of Transportation (MDT) operates its storm sewer system under authorization of the Montana Pollutant Discharge Elimination System permit for storm water discharges associated with small Municipal Separate Storm Sewer Systems (MS4s) (Permit). This MS4 Storm Water Monitoring Plan (Plan) describes the sampling and analysis program for the collection of storm water samples by MDT's Environmental Services Bureau. To comply with the Permit, permittees must perform sampling, analysis, and reporting to address two types of required self-monitoring: Storm Event Monitoring and Impaired Waterbody Monitoring. This Plan will guide implementation of MDT's storm water sampling program within each small MS4 in Montana (i.e., Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula). The purpose of the Plan is to describe the sampling, analysis, data assessment, data management, and other monitoring-related activities to ensure that quality control and consistency are maintained.

The Plan was produced to guide MDT to successfully satisfy the MS4 storm water monitoring requirements described in the 2022 General Permit for Storm Water Discharges Associated with Small MS4s, Permit Number MTR040000, issued by the Montana Department of Environmental Quality (MDEQ). This Plan is managed in accordance with MDT's Storm Water Management Program (SWMP).

This Plan is intended to undergo an annual public comment period in conjunction with MDT's SWMP updates to allow for the public to provide comments. All input, responses, and sampling plan modifications will be documented in a response to comments and made available on MDT's storm water website: <https://www.mdt.mt.gov/pubinvolve/stormwater/default.aspx>.

2.0 Monitoring Program Requirements and Objectives

Water quality monitoring is intended to track annual and long-term effectiveness of the Best Management Practices (BMPs) described in MDT's SWMP. The rationale, frequency, and monitoring locations for both types of monitoring are described in **Section 3.0 Monitoring Framework and Rationale**.

2.1 Storm Event Monitoring

It is assumed that MDT will be required to perform semi-annual sampling, analysis, and reporting of storm water discharges from at least four locations within each of the small MS4s during a storm event with a measurable amount of discharge. To conduct this work, MDT has established a network of at least four monitoring locations with at least one location representing a predominantly commercial and/or industrial area, and at least one location representing a predominantly residential area within each small MS4. Exceptions to these monitoring locations are noted in **Section 3.3 Sample Location Rationale**. While not proposed as part of the network, the Permit also allows one monitoring location to be upstream, outside the MS4 boundary to evaluate water quality entering the MS4.

2.2 Impaired Waterbody Monitoring

MDT maintains an inventory of all outfalls discharging to impaired waterbodies. Information on impaired waterbodies is obtained from MDEQ's Clean Water Act Information Center (CWAIC) website (<http://cwaic.mt.gov/>). This information provides the identified pollutant(s) of impairment associated with the waterbody and whether a waterbody has an approved Total Maximum Daily Load (TMDL) that defines the maximum amount of a pollutant a waterbody can receive and still meet water quality standards.

Permittees must supplement the Storm Event Monitoring (**Section 2.1**) with additional Impaired Waterbody Monitoring to evaluate MS4 loading into impaired waterbodies and the BMP effectiveness to further target and reduce discharges to impaired waterbodies. This additional monitoring is based on the TMDL status: either pre-TMDL or approved TMDLs (with assigned wasteload allocations [WLAs] to the MS4s.) It is assumed that MDT will be required to perform semi-annual sampling, analysis, and reporting of storm water discharges from at least four locations within each of the small MS4s that discharge to impaired waterbodies. The sample locations selected consider the largest drainage areas, surrounding land uses which could contribute to impairments, and high priority areas identified under MDT's SWMP.

2.3 Monitoring Analysis

Because MDT has not conducted storm event or impaired waterbody monitoring before, the data collected will provide a baseline of existing conditions. After four years of sample collection for the identified sites, MDT will be able to evaluate trends for those parameters and evaluate whether storm water contribution trends are increasing or decreasing to assess overall BMP effectiveness. Based on the trend-analysis, additional BMPs may be implemented, and future monitoring results can be compared to the baseline samples to further evaluate BMP effectiveness.

3.0 Monitoring Framework and Rationale

3.1 Monitoring Parameters

Within each MS4 semi-annual samples will be collected at each monitoring location (one sample must be taken between January 1st and June 30th of each calendar year and the other sample between July 1st and December 31st). The list of the parameters for Storm Event Monitoring, analytical methods, and sample types are identified in **Table 3-1** below. This list applies to all storm event samples.

Table 3-1. Storm Event Monitoring Parameters, Method, and Sample Type

Parameter	Units	Analytical Method ³	Type
Estimated Flow	gpm	NA	Instantaneous
pH	s.u.	EPA 150.1	Instantaneous
Specific Conductance ¹	µmhos/cm	EPA 120.1	Instantaneous
Dissolved Oxygen ¹	mg/L	SM 4500-OG	Instantaneous
Temperature ¹	°C	SM 2550 B	Instantaneous
Turbidity ¹	NTU	EPA 180.1	Instantaneous
Chemical Oxygen Demand (COD)	mg/L	EPA 410.3/EPA 410.4	Grab or Composite
Total Suspended Solids (TSS)	mg/L	SM 2450 D	Grab or Composite
Total Phosphorus	mg/L	EPA 365.3/EPA 365.1	Grab or Composite
Total Nitrogen ²	mg/L	Calculated	Grab or Composite
Total Kjeldahl Nitrogen (TKN)	mg/L	EPA 351.2	Grab or Composite
Total Nitrate/Nitrite (Nitrite + Nitrate as N)	mg/L	EPA 353.2/EPA 300A	Grab or Composite
Oil and Grease	mg/L	EPA Method 1664A	Grab
Copper, Total Recoverable	µg/L	EPA 200.8	Grab or Composite
Lead, Total Recoverable	µg/L	EPA 200.8	Grab or Composite
Zinc, Total Recoverable	µg/L	EPA 200.7/EPA 200.8	Grab or Composite

¹ Although not required under the Permit, measurement of these parameters is typical for water quality monitoring and is recommended for assessment purposes. Standard operating equipment can be used to measure in conjunction with other instantaneous measurements.

² Total Nitrogen is calculated from TKN and Total Nitrate + Nitrite as N.

³ Other equivalent EPA-approved methods (40 Code of Federal Regulation [CFR] 136) may be substituted provided the target reporting limits are met.

The list of potential additional parameters for impaired waterbody monitoring, analytical methods, and sample types are identified in **Table 3-2**. This parameter list will apply to the specific impairment cause for the impaired waterbodies. Sampling and analysis will occur for the pollutant(s) listed as a source of impairment specific to the receiving waterbody. These parameters

are from the identified impairment causes described in **Section 3.2**. Total Suspended Solids (TSS) will be a surrogate for sediment impaired waterbodies, unless otherwise directed in a TMDL. The waterbody impairment sampling rationale for each MS4 is provided in **Section 3.3**.

Table 3-2. Impaired Waterbody Monitoring Parameters, Method, and Sample Type

Parameter	Units	Analytical Method ¹	Type
Arsenic, Total Recoverable	µg/L	EPA 200.8	Grab or Composite
<i>Escherichia coli</i>	MPN/100ml	A9223 B	Grab
Mercury, Total	µg/L	EPA 245.2	Grab or Composite
Nitrate as N	mg/L	EPA 353.2/EPA 300A	Grab or Composite
Chromium (Total)	mg/L	EPA 200.8	Grab or Composite
Polychlorinated Biphenyls (PCB)	mg/L	EPA 608.3	Grab or Composite
Iron, Total Recoverable	mg/L	EPA 200.7	Grab or Composite
Cadmium, Total Recoverable	µg/L	EPA 200.8	Grab or Composite
Selenium, Total Recoverable	µg/L	EPA 200.8	Grab or Composite

¹ Other equivalent EPA-approved methods (40 CFR 136) may be substituted provided the target reporting limits are met.

3.2 Impaired Water Bodies Within MS4s

MDEQ's CWAIC was accessed on February 20, 2023, to verify impaired water(s) and associated impairment(s) within each MS4. A list of the impaired waterbodies in each of the MS4s with an MDT outfall discharging to that waterbody, the associated impairment pollutants, and TMDL status are identified in **Appendix A**. The lists only identify impairment causes for pollutants that a TMDL could be developed (e.g., flow regimes would not have a TMDL or WLA); however, the list will include those impairment causes that are linked to a pollutant that a TMDL and WLA could be developed (e.g., algae would not have a WLA, but a WLA would be developed for nitrogen and phosphorus.) This list of impaired waterbodies will be used to determine the Impaired Waterbody Monitoring parameters. The impaired waterbodies need to be reviewed bi-annually (i.e., every two years) based on updates to Montana's Integrated Report which identifies those waterbodies on the 303(d) list as being impaired. The TMDLs should be reviewed annually to identify whether there are newly approved TMDLs and/or assigned WLAs and **Appendix A** updated accordingly.

3.3 Sample Location Rationale

The sampling rationale for each Storm Event and Impaired Waterbody monitoring location (i.e., outfall) is provided for each MS4 below. The sampling rationale was developed in accordance with the Permit. Locations of the selected outfalls for monitoring in each MS4 are provided in the attached **Figure 3-1 (a-g)**.

3.3.1 Billings

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Billings and Yellowstone County. The sample locations were chosen to represent predominantly commercial/residential areas (two locations), predominantly commercial/industrial areas (one location), and primarily interstate runoff contributions (one location). There are no MDT outfalls that drain predominantly residential areas. **Table 3-3** provides the selected Storm Event Monitoring locations.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of the Yellowstone River. The locations overlap with Storm Event Monitoring locations at BIL_001, BIL-019, and BIL_023 based on the sampling rationale identified above. In addition to the rationale above, BIL_001 drains approximately 0.46 square miles and discharges to Yegen Drain before it is heavily influenced by industrial run-off areas and discharged to the Yellowstone River. BIL-019 is directly adjacent to a stockyard and railroad that drains approximately 0.43 square miles and discharges to an irrigation ditch before discharging to the Yellowstone River. BIL_009 was selected to assess loading contributions from 1st Avenue North and is down gradient from MDT's Yellowstone County Sand and Storage (Metra) facility. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the identified parameters based on the impairment cause as identified in **Table 3-3**.

Table 3-3 Billings Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BIL_001	45.7698666 -108.491665	Storm Event and Impaired Waterbody	S. 27 th Street	Yegen Drain to Yellowstone River (MT43F001_010)	Table 3-1 Parameters	Drains predominantly commercial/residential area. Identified by MDT as a high- priority outfall for draining area zoned as industrial and discharging to an impaired waterbody. Also identified as high priority due to a potential illicit discharge.
					Arsenic, Total Recoverable Total Nitrogen* Total Phosphorus* Dissolved Oxygen* Oil and Grease* Sediment (TSS)*	
BIL_002	45.810253 -108.423718	Storm Event	I-90 (Outfall location is off of N. Frontage Road	Dry Creek to Yellowstone River (MT43F001_010)	Table 3-1 Parameters	Drains commercial/residential area with influence from I-90.
BIL_009	45.796397 -108.470838	Impaired Waterbody	1 st Ave. N	Yellowstone River (MT43F001_010)	Arsenic, Total Recoverable Total Nitrogen Total Phosphorus Dissolved Oxygen Oil and Grease Sediment (TSS)	Drains from 1st Avenue North and is down gradient from MDT's Yellowstone County Sand and Storage (Metra) facility.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BIL_019	45.788106 -108.487879	Storm Event and Impaired Waterbody	Minnesota Avenue	Irrigation ditch to Yellowstone River (MT43F001_010)	Table 3-1 Parameters	Drains predominantly commercial/industrial area. Identified by MDT as a high- priority outfall for draining area zoned as industrial and discharging to an impaired waterbody. Also identified as high priority because of the old stormwater infrastructure.
					Arsenic, Total Recoverable Total Nitrogen* Total Phosphorus* Dissolved Oxygen* Oil and Grease* Sediment (TSS)*	
BIL_023	45.793172 -108.469758	Storm Event and Impaired Waterbody	I-90 (Yellowstone Bridge)	Yellowstone River (MT43F001_010)	Table 3-1 Parameters	I-90 contributions
					Arsenic, Total Recoverable Total Nitrogen* Total Phosphorus* Dissolved Oxygen* Oil and Grease* Sediment (TSS)*	Identified by MDT as a high- priority outfall for discharging to an impaired waterbody.

*Parameter included in Storm Event Monitoring (Table 3-1).

3.3.2 Bozeman

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Bozeman. The sample locations were chosen to represent predominantly commercial/industrial areas (one location), predominantly residential areas (one location), predominantly commercial/residential areas (one location), and interstate runoff contributions (one location). **Table 3-4** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of East Gallatin River and Mandeville Creek. The locations overlap with Storm Event Monitoring locations at BZN_XXX, BZN_014 and BZN_008 based on the sampling rationale identified above. BZN_015 was selected to assess direct loading contributions from I-90 with no other influence before it discharges to a tributary that discharges to the East Gallatin River. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-4**.

Table 3-4 Bozeman Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BZN_XXX**	45.675098 -111.00956	Storm Event and Impaired Waterbody	E/Main St./Frontage Road	East Gallatin River (MT41H003_010)	Table 3-1 Parameters	Drains predominantly from roads area, with influence from interstate (off-ramp).
					Total Nitrogen* Total Phosphorus*	Discharges to a wetland but has connectivity to an impaired waterbody.
BZN_014	45.669844 -110.996311	Storm Event and Impaired Waterbody	I-90	East Gallatin River (MT41H003_010)	Table 3-1 Parameters	Drains predominantly residential area.
					Total Nitrogen* Total Phosphorus*	Identified by MDT as high priority outfall for draining residential area that is primarily on septic.
BZN_001	45.676804 -111.069051	Storm Event	W. Main Street	East Catron Creek	Table 3-1 Parameters	Drains predominantly commercial/residential area.
BZN_015	45.678816 -111.012291	Impaired Waterbody	I-90	East Gallatin River (MT41H003_010)	Total Nitrogen Total Phosphorus	Drains from I-90 with no other influence before it discharges to a tributary that discharges to the East Gallatin River.
BZN_008	45.698729 -111.051996	Storm Event and Impaired Waterbody	I-90	Mandeville Creek (MT41H003_021)	Table 3-1 Parameters	Drains from I-90 median inlet – influenced by road runoff contributions.
					Total Nitrogen* Total Phosphorus*	Identified by MDT as a high-priority outfall for discharging to impaired waterbody.

*Parameter included in Storm Event Monitoring (Table 3-1).

**Outfall location is being inventoried and mapped fall 2023. Outfall ID to be updated when data is finalized.

3.3.3 Butte

Storm Event Monitoring is to be completed at four stormwater discharge locations within the City/County of Butte-Silver Bow. The sample locations were chosen to represent predominantly commercial/industrial areas (one location), predominantly residential areas and interstate (one location), predominantly commercial areas and interstate (one location), and interstate runoff contributions (one location). **Table 3-5** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of Silver Bow Creek. The locations overlap with Storm Event Monitoring locations at BTM_012 and BTM_008 based on the sampling rationale identified above. Although BTM_008 doesn't discharge directly to Silver Bow Creek, it is upstream of the convergence with Blacktail Creek and Silver Bow Creek and provides information on interstate contributions. BTM_023 and BTM_024 discharge to ephemeral channels that discharge directly to Silver Bow Creek and provide information on interstate contributions. Both outfalls have been identified as high priority by MDT. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-5**.

Table 3-5 Butte Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BTM_012 Delegated Outfall	45.995866 -112.539190	Storm Event and Impaired Waterbody	S. Montana St.	Silver Bow Creek (MT76G003_020)	Table 3-1 Parameters	Drains predominantly commercial/industrial area.
					Arsenic, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable* Lead, Total Recoverable* Zinc, Total Recoverable* Mercury, Total Nitrate Total Nitrogen* Total Phosphorus* TSS*	Identified by MDT as a high-priority outfall for discharging to impaired waterbody and for draining area zoned as industrial and area with old infrastructure.
BTM_021	45.980010 -112.500064	Storm Event	I-15/I-90	Blacktail Creek	Table 3-1 Parameters	Drains predominantly residential area and interstate. Identified by MDT as a high-priority outfall for draining areas prone to dumping.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BTM_023	46.006179 -112.605720	Impaired Waterbody	I-15/I-90 Rocker Interchange	Silver Bow Creek (MT76G003_020)	Arsenic, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Zinc, Total Recoverable Mercury, Total Nitrate Total Nitrogen Total Phosphorus TSS	Drains to ephemeral channels that discharge directly to Silver Bow Creek and provide information on interstate contributions. Identified as high priority by MDT.
BTM_024	46.004194 -112.574037	Impaired Waterbody	I-15/I-90	Silver Bow Creek (MT76G003_020)	Arsenic, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Zinc, Total Recoverable Mercury, Total Nitrate Total Nitrogen Total Phosphorus TSS	Drains to ephemeral channels that discharge directly to Silver Bow Creek and provide information on interstate contributions. Identified as high priority by MDT.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
BTM_008 Delegated Outfall	45.985233 -112.508526	Storm Event and Impaired Waterbody	I-15/I-90 interchange at Harrison Ave.	Blacktail Creek to Silver Bow Creek (MT76G003_020)	Table 3-1 Parameters Arsenic, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable* Lead, Total Recoverable* Zinc, Total Recoverable* Mercury, Total Nitrate Total Nitrogen* Total Phosphorus* TSS*	Drains commercial area and interstate.
BTM_015	45.980054 -112.484753	Storm Event	I-15/I-90 interchange	Ephemeral Channel	Table 3-1 Parameters	Drains interstate area.

*Parameter included in Storm Event Monitoring (Table 3-1).

3.3.4 Great Falls

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Great Falls and Cascade County. The sample locations were chosen to represent predominantly industrial areas (one location), predominantly residential areas (one location), predominantly commercial areas (one location), and predominantly commercial/industrial areas with highway contributions (one location). **Table 3-6** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of the Missouri River and Sun River. The locations overlap with Storm Event Monitoring locations at GTF_024 and GTF_022 based on the sampling rationale identified above. GTF_027 was selected since it receives mostly interstate contributions. GTF_017 was selected to assess loading contributions from a large commercial and residential area (approximately 0.77 square miles.) These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-6**.

Table 3-6. Great Falls Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
GTF_024	47.521213 -111.294293	Storm Event and Impaired Waterbody	Smelter Ave. NE (Calumet)	Missouri River (MT41Q001_011)	Table 3-1 Parameters	Drains predominantly industrial area.
					Chromium (Total) Mercury, Total Polychlorinated biphenyls Selenium, Total Recoverable TSS* Turbidity*	Identified by MDT as a high-priority outfall for discharging to impaired waterbody and for draining area zoned as industrial.
GTF_025 Delegated Outfall	47.492043 -111.328690	Storm Event	6th St. SW	Sun River	Table 3-1 Parameters	Drains predominantly residential area. Identified by MDT as a high-priority outfall for discharging to impaired waterbody.
GTF_015	47.494201 -111.310285	Storm Event	River Dr. S	Missouri River	Table 3-1 Parameters	Drains predominantly commercial area. Identified by MDT as high-priority outfall for discharging to impaired waterbody.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
GTF_022	47.522245 -111.289830	Storm Event and Impaired Waterbody	10 th St. NE/Old Havre Highway	Missouri River (MT41Q001_011)	Table 3-1 Parameters	Drains predominantly commercial/industrial area and highway. Identified by MDT as high-priority outfall for discharging to impaired waterbody and for draining area zoned as industrial.
					Chromium (Total) Mercury, Total Polychlorinated biphenyls Selenium, Total Recoverable TSS* Turbidity*	
GTF_027**	47.499877 -111.343406	Impaired Waterbody	I-15	Sun River (MT41K001_020)	Nitrogen (Total) Phosphorus (Total) TSS	Receives mostly interstate contributions.
GTF_017 Delegated Outfall	45.507562 -111.313884	Impaired Waterbody	Central Ave W	Missouri River (MT41Q001_011)	Chromium (Total) Mercury, Total Polychlorinated biphenyls Selenium, Total Recoverable TSS Turbidity	Drains from a large commercial and residential area (approximately 0.77 square miles.)

*Parameter included in Storm Event Monitoring (Table 3-1).

**Outfall location is fenced; access will need to be provided before sampling.

3.3.5 Helena

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Helena. The sample locations were chosen to represent predominantly industrial areas with interstate contributions (one location), predominantly residential areas with interstate contributions (one location), predominantly commercial/residential areas with interstate contributions (one location), and interstate runoff contributions (one location). **Table 3-7** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to the Helena Valley Canal which discharges to Lake Helena. The locations overlap with Storm Event Monitoring at all four locations: HLN_7, HLN_14, HLN_25, and HLN_6. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-7**.

Table 3-7 Helena Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
HLN_007	46.579262 -111.980734	Storm Event and Impaired Waterbody	I-15	Ephemeral drainage to Helena Valley Canal to Lake Helena	Table 3-1 Parameters	Drains predominantly residential area and interstate.
					Arsenic, Total Recoverable Lead, Total Recoverable* Total Nitrogen* Total Phosphorus*	
HLN_014 Delegated Outfall	46.605585 -112.003119	Storm Event and Impaired Waterbody	Airport Rd.	Stormwater conveyance to Helena Valley Canal to Lake Helena	Table 3-1 Parameters	Drains industrial area and interstate.
					Arsenic, Total Recoverable Lead, Total Recoverable* Total Nitrogen* Total Phosphorus*	
HLN_025	46.585041 -111.989251	Storm Event and Impaired Waterbody	I-15	Ephemeral drainage to Helena Valley Canal to Lake Helena	Table 3-1 Parameters	Drains mixed residential/commercial area with interstate contributions.
					Arsenic, Total Recoverable Lead, Total Recoverable* Total Nitrogen* Total Phosphorus*	
HLN_006	46.577035 -111.977641	Storm Event and Impaired Waterbody	I-15	Stormwater conveyance to Helena Valley Channel to Lake Helena	Table 3-1 Parameters	Drains interstate
					Arsenic, Total Recoverable Lead, Total Recoverable* Total Nitrogen* Total Phosphorus*	

*Parameter included in Storm Event Monitoring (Table 3-1).

3.3.6 Kalispell

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Kalispell. The sample locations were chosen to represent predominately industrial areas with highway contributions (one location), predominantly commercial areas (two locations), and predominantly residential areas (one location). **Table 3-8** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of Ashley Creek and the Stillwater River. The locations overlap with Storm Event Monitoring locations at all four sites: KAL_003, KAL_006, KAL_001, and KAL_002. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-8**.

Table 3-8. Kalispell Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
KAL_003	48.171674 -114.301724	Storm Event and Impaired Waterbody	Airport Way	Lower Ashley Creek (MT76O002_030)	Table 3-1 Parameters	Drains industrial and highway areas.
					Dissolved Oxygen* Nitrite + Nitrate as N* Total Nitrogen* Total Phosphorus* TSS* Temperature*	Identified by MDT as high-priority outfall for discharging to impaired waterbody.
KAL_006	48.185487 -114.331720	Storm Event and Impaired Waterbody	US 93 Bypass	Middle Ashley Creek (MT76O002_020)	Table 3-1 Parameters	Drains predominantly commercial area.
					Total Nitrogen* Total Phosphorus* TSS* Temperature*	Identified by MDT as high-priority outfall for discharging to impaired waterbody.
KAL_001	48.241162 -114.324830	Storm Event and Impaired Waterbody	W. Reserve Dr.	Stillwater River (MT76P001_010)	Table 3-1 Parameters	Drains predominantly commercial area.
					TSS*	Identified by MDT as high-priority outfall for discharging to impaired waterbody and for an area with illegal dumping.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
KAL_002	48.186886 -114.288149	Storm Event and Impaired Waterbody	Willow Glen Dr.	Stillwater Slough to the Stillwater River (MT76P001_010)	Table 3-1 Parameters TSS*	Drains predominantly residential area. Identified by MDT as high-priority outfall for discharging to impaired waterbody and for draining an area primarily on septic.

*Parameter included in Storm Event Monitoring (Table 3-1).

3.3.7 Missoula

Storm Event Monitoring is to be completed at four stormwater discharge locations within the city of Missoula and Missoula County. The sample locations were chosen to represent predominantly industrial areas (one location), predominantly residential areas (one location), predominantly roadway runoff contributions (one location), and interstate runoff contributions (one location). **Table 3-9** provides the selected Storm Event Monitoring locations and rationale.

Impaired Waterbody Monitoring is to be completed at four monitoring locations that discharge to impaired segments of the Clark Fork River and Bitterroot River. The locations overlap with Storm Event Monitoring locations at MSO_006, MSO_008, and MSO_004 based on the sampling rationale identified above. MSO_003 was selected to assess metals loading to the Clark Fork River that is exclusively from interstate contributions. These monitoring locations will provide MDT information to evaluate BMP effectiveness and MS4 loading into streams. These sites will be monitored for the following parameters based on the impairment cause as identified in **Table 3-9**.

Table 3-9 Missoula Storm Event and Impaired Waterbody Monitoring Locations

Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
MSO_011	46.912036 -114.065176	Storm Event	W Broadway St.	Field Doughery Ditch to Clark Fork River	Table 3-1 Parameters	Drains predominantly industrial area. Identified by MDT as a high-priority outfall for draining area zoned as industrial.
MSO_006	46.866573 -113.992707	Storm Event and Impaired Waterbody	S 5 th St. E (monitoring location is off of Kim Williams trail)	Clark Fork River (MT76M001_020)	Table 3-1 Parameters Arsenic, Total Recoverable Cadmium, Total Recoverable Iron, Total Recoverable Mercury, Total	Drains predominantly residential area. Identified by MDT as a high-priority outfall for discharging to impaired waterbody.
MSO_008	46.831904 -114.053968	Storm Event and Impaired Waterbody	US Highway 93 S	Bitterroot River (MT76H001_030)	Table 3-1 Parameters Lead, Total Recoverable* Temperature*	Drains predominantly highway. Identified by MDT as a high-priority outfall for discharging to impaired waterbody and for draining area for illegal dumping.



Outfall	Location	Location Type	Route Name	Receiving Waterbody	Monitoring Parameters	Rationale
MSO_004	46.864370 -113.952252	Storm Event and Impaired Waterbody	E Broadway St.	Clark Fork River (MT76M001_030)	Table 3-1 Parameters	Drains predominantly roadway. Identified by MDT as a high-priority outfall for discharging to impaired waterbody
					Arsenic, Total Recoverable Cadmium, Total Recoverable Iron, Total Recoverable	
MSO_003	46.869918 -113.884313	Impaired Waterbody	I-90	Clark Fork River (MT76M001_030)	Arsenic, Total Recoverable Cadmium, Total Recoverable Iron, Total Recoverable	Assess metals loading to the Clark Fork River that is exclusively from interstate contributions.

*Parameter included in Storm Event Monitoring (Table 3-1).

4.0 Sampling

4.1 Sample Type

The Permit lists the types of samples required for Storm Event and Impaired Waterbody monitoring analyses. Sample types consist of instantaneous measurements, and the choice between collecting grab samples or composite samples. The required sample type (i.e., instantaneous, grab, or composite) is shown in **Table 3-1** for Storm Event Monitoring and in **Table 3-2** for Impaired Waterbody Monitoring.

Manual or automated sample collection techniques may be used by field personnel during rainfall events. The below sections discuss benefits and downsides of each sample type.

4.1.1 Instantaneous Sample

An instantaneous sample is a parameter collected in the field, typically using field instruments, which characterizes the discharge at the time of sample collection. Flow, specific conductance, pH, dissolved oxygen, temperature, and turbidity are required to be instantaneous measurements. Field instruments must be calibrated as described in **Section 4.3.2**.

4.1.2 Grab Sample

A grab sample is a single sample that characterizes the discharge at a representative point in the discharge stream. Grab samples therefore include instantaneous samples and those samples that are collected at a specific point and submitted to the laboratory for analysis. Additionally, grab samples are primarily collected by manual methods, but automatic samplers may be used.

In general, grab samples are typically less expensive than composite sample due to less equipment necessary to collect the sample and less sample preparation time. However, grab samples are considered less representative of the average characteristics of the discharge stream as they only represent conditions at the time of collection.

4.1.3 Composite Sample

A composite sample is a combination of a series of discrete samples of specific volumes collected at specific intervals using automated sampling equipment or manual grab methods. Composite samples are collected for a duration adequate to be representative of changes in pollutant concentrations and runoff flows using one of the following techniques:

- Time-weighted composites collected over the length of the storm event or the first 24-hour period, whichever is shorter, using automated sampling equipment, or
- Flow-weighted composites collected over the length of the storm event or a typical 24-hour period, whichever is shorter, using automated sampling equipment, or
- If automated compositing is not feasible, a composite sample may be collected using a minimum of four grab samples, collected during the first 24 hours of the stormwater discharge, or for the entire stormwater discharge if the storm event is less than 24 hours.

Composite samples may be more expensive than grab samples when utilizing automated samplers. However, composite samples are considered more representative of the discharge stream than grab samples.

4.2 Sample Collection and Equipment

To begin collecting storm water samples, the sampling personnel need to acquire sampling materials from the lab, ensure equipment is calibrated, know the procedures and equipment regarding the sample type method being used, collect pertinent field observations during sample collection, and record chain of custody for the samples collected. A description of these and other pertinent tasks, including an overview of the procedures and equipment used for each sample collection method, are provided below.

4.2.1 Lab Preparation

Before a storm event that triggers the mobilization criteria occurs, or in reasonable anticipation of this storm event, the lab performing the analyses needs to be contacted to provide the appropriate sample containers, preservative, coolers, and return shipping labels for the analyses to be collected. Sampling personnel can provide **Appendix B MS4 Specific Sample Strategy** along with **Table 6-12 MS4 Stormwater Sampling Analytical Summary** to the lab which describes the sample counts and analyses to be conducted for each MS4 and outfall. Labs may need several business days to provide the correct sample containers. Ensure temperature blanks are provided for each cooler samples are shipped in, as well as the need for any field blank water provided by the lab for the completion of possible quality assurance (QA)/quality control (QC) samples as described in **Section 4.3.1**.

Some analyses, such as metals, need to have the sample preserved with acid at the time of sample collection for the analysis to be conducted in accordance with the method. The lab will provide the preservative either within the sample containers or separately to be added manually in the field. The sampler may need to test the sample using pH paper to ensure the correct amount of preservative is used if doing so manually.

4.2.2 Equipment Calibration

Equipment used during sample collection needs to be calibrated as described in **Section 4.3.2**.

4.2.3 Field Observation Form

A field observation data sheet will be completed for each outfall where samples are collected to record the site conditions during sampling. The field observation sheet may include narrative descriptions and field observations including the station location, date, and duration of the storm event sampled; site characteristics including weather, trash observations, and sample appearance; flow estimates; in-situ measurements of pH, temperature, specific conductivity, dissolved oxygen, and turbidity; and equipment calibration. An electronic database (e.g., ArcGIS Field Maps, Survey123, etc.) may be used in lieu of a paper field log. An example field observation sheet is provided in **Appendix C**.

4.2.4 Instantaneous Sample Methods

Flow, specific conductance, pH, dissolved oxygen, temperature, and turbidity parameters are required to be collected as instantaneous samples. A description of sample collection methods for these parameters is below.

4.2.4.1 Flow Rate

Flow rates will be measured or estimated from the MS4 outfalls at the time of sample collection in accordance with the United States Environmental Protection Agency (USEPA) Storm Water Sampling Guidance Document (EPA-833-B-92-001) (USEPA, 1992). Several methods that can be used to measure or estimate flow, as well as other considerations for collecting flow measurements, are described below.

Flow may be measured from an outfall at the time of sample collection by installing a hydraulic structure, such as a weir, and calculating flow using the specific equation associated with the shape of the weir (**Figure 4-2 and 4-3**). Weirs can take several shapes such as rectangular, trapezoidal, and triangular (v-notched). Further explanation of the use of weirs for flow calculation can be found in the USEPA Storm Water Sampling Guidance.

If selecting a weir to measure flow the following should be considered: weir installation may be more intensive than the use of a flow meter; and during large storm events water may overtop the weir resulting in unusable measurements.



Figure 4-2. V-notch Weir on Outfall



Figure 4-3. Rectangular Weir

Flow may be measured with an area velocity sensor and pressure transducer such as the Hach® Submerged AV Sensor (paired with the FL900 Logger with AV9000 Analyzer Module) or similar type device (**Figure 4-4**). The sensor measures water level and velocity. Flow is calculated based on the cross-sectional area of the pipe, level of water, slope, and velocity. Additionally, the flow meter may be connected to an automated sampler through a 4-20 milliampere (mA) range output. In this configuration, the flow meter provides a method to control or pace the sampler and store sampling data and other auxiliary data. The flow meter may measure and log estimated flow, rainfall, and sample history.



Figure 4-4. Hach® Submerged AV Sensor and FL900 Logger with AV9000 Analyzer Module

Flow may also be measured using a HOBO® level logger or similar type device (**Figure 4-5**). The HOBO® level logger is a pressure transducer only, and the flow is estimated based on the area of the pipe, level of water, and slope.



Figure 4-5. HOBO® Water Level Logger

Once selected, the flow sensor or water level logger is then secured to the sample location using best professional judgment. Exposed sensors can be securely fastened using stainless steel brackets, screws, and anchors (**Figure 4-6**).



Figure 4-6. Example of Flow Sensor Installation

Where flow measurement devices, such as those described above, are not economical or practical to be used, the flow rate can be estimated at the time of sample collection. However, manually estimating flow is less accurate than using dedicated equipment. Several methods that can be used to estimate flow manually are the float method, bucket and stopwatch (where site conditions allow), slope and depth, and use of runoff coefficients (USEPA, 1992).

Due to the velocities and potential for debris to be carried by storm flows, it is possible that a flow sensor may be damaged during storm flows. Damage to a flow sensor may result in a data gap of actual recorded flows. In this event, flows from the respective drainage area can be modeled for any data gaps based on the drainage area and impervious cover.

For automated composite sampling, water level and flow measurements should be logged at a minimum of five-minute intervals for the duration of the monitoring event when using continuous logging devices. Data downloads should be completed after the monitoring event is complete.

If manual composite sampling techniques are used, periodic level measurements will be made throughout the event at specific intervals (e.g., with every grab sample, or every 15 minutes, 30 minutes, or hourly throughout the event).

4.2.4.2 Specific Conductance, pH, Dissolved Oxygen, Temperature, and Turbidity

Specific conductance, pH, dissolved oxygen, temperature, and turbidity measurements can primarily be collected in two ways: manually at the time of sample collection using a YSI® water quality probe (or other similar type equipment), or remotely using dedicated sensors such as pHionics® Water Quality Sensors. Readings for these parameters are recorded in duplicate in the field utilizing the field observation form (**Appendix C**).

4.2.5 Grab Sample Methods

Grab samples may be collected using either an autosampler (such as the Hach® AS950 Portable Standard Sampler) or a sample bottle dipped into the surface water. In areas where surface water flow may not be easily accessible, a disposable plastic cup attached to a sample pole may be used to collect the sample and then be transferred to the proper sample container.

Grab samples should be collected as close to the peak of storm water flow as reasonably achievable. The peak of storm water flow typically occurs shortly after the heaviest precipitation falls in the drainage area. The peak can be predicted using storm radar to track rainfall throughout the storm. Smaller systems tend to react faster than larger ones.

4.2.6 Composite Sample Methods

Composite samples may be collected unattended via an automated sampler (e.g., Hach® AS9550 autosampler or similar type device) or manually in the field over the time of the storm event.

Preparation for automated sample collection may include installing and securing Teflon-lined tubing at the monitoring locations prior to the wet weather event. Sampler tubing and wiring can be routed through conduits placed between the monitoring locations and the sampling equipment or enclosures. Above-ground instruments can be protected within a site equipment enclosure. Depending on site configuration, enclosures may be permanent (i.e., installed before monitoring begins and removed only when the monitoring program ends) or temporary. An example of a permanent enclosure for automated sampling is shown in **Figure 4-7**. Examples of temporary automated sampling set-ups are shown in **Figure 4-8a and 4-8b**.



Figure 4-7. Example of Permanent Automated Sampler Enclosure



Figure 4-8a. Example of Temporary Automated Sampler Setup



Figure 4-8b. Example of Temporary Automated Sampler Setup

If unattended automated sampling will be used, the autosampler is deployed by the field team upon arrival at each site prior to the storm event. Samples are pumped with the autosampler into a clean glass bottle labeled with the sample identifier (ID), date, and time, and will be preserved on ice for transport to the laboratory. Samples will consist of time-weighted composites collected over the length of the storm event or in the first 24-hour period, whichever is shorter, composed of discrete samples, through the use of automated equipment set at the time intervals listed in **Table 4-10** based on the anticipated size of the storm. After compositing, samples will be transferred into the appropriate bottles for analysis.

Table 4-10. Automated Sample Pacing for Time-Weighted Composites by Storm Duration

Storm Duration (Hours)	Sample Aliquot Interval (Minutes)	Sample Volume (mL)	Total Sample Aliquots	Total Volume (mL)
2	10	800	12	9,600
4	10	800	24	19,200
6	10	400	36	14,400
8	10	400	48	19,200
12	10	400	72	28,800
16	20	400	48	19,200
20	20	400	60	24,000
24	20	400	72	28,800

When unattended automated sampling is not feasible (e.g., security or safety issues), a time-weighted composite sample can be collected using a minimum of four grab samples, collected during the first 24 hours of the stormwater discharge, or for the entire stormwater discharge if the storm event is less than 24 hours at time intervals based on the anticipated size of the storm as shown in **Table 4-11**. After the storm event, the discrete samples will be composited into one time-weighted composite for chemistry analysis.

Table 4-11. Grab Sample Pacing for Time-Weighted Composites by Storm Duration

Storm Duration (Hours)	Sample Aliquot Interval (Minutes)	Sample Volume (mL)	Total Sample Aliquots	Total Volume (mL)
2	20	2,000	6	12,000
4	20	2,000	12	24,000
6	40	2,000	9	18,000
8	40	2,000	12	24,000
12	60	2,000	12	24,000
16	60	2,000	16	32,000
20	120	2,000	10	20,000
24	120	2,000	12	24,000

4.3 Quality Assurance/Quality Control

Quality assurance and quality control for sampling processes will include proper collection to minimize the possibility of contamination. Appropriate sample containers and field measurement and sampling gear will be transported to the sample site in clean storage containers. Samples will be collected in laboratory-supplied, laboratory-certified, contaminant-free high-density polyethylene (HDPE) or glass bottles. Field staff will be trained in field sampling standard operating procedures and will wear powder-free nitrile gloves or similar during sample collection. Field staff will avoid contamination of samples at all times. A temperature blank will be used to ensure that sample holding temperatures were maintained from sample collection through delivery to the laboratory.

4.3.1 Equipment Decontamination

QA/QC for sampling processes begins with proper collection of the samples to minimize the possibility of contamination. If water samples are collected in larger re-usable carboys (typically used in more permanent sampling enclosures for composite sampling), these containers will need to be decontaminated prior to use in the field. Any equipment that will be reused between sample sites will be decontaminated via the process of a soap wash, such as Liquinox® or Alconox®, and triple deionized water rinse. Wash and rinse water may then be disposed of in building drains connected to the sanitary sewer.

4.3.2 Calibration

Field measurements for flow, pH, specific conductivity, dissolved oxygen, turbidity, and temperature may be made using a YSI Inc.® water quality probe (or similar) or a flow meter/logger. Calibration of monitoring equipment needs to be conducted immediately prior to deployment or use and will be field verified during each data download or sampling event. Calibrations will be conducted in accordance with manufacturer specifications and recorded in a calibration log. An example calibration log that may be used can be found in **Appendix D**.

4.3.3 QA/QC Samples

Quality control samples are collected during sampling events to evaluate field and laboratory variability, and to isolate potential site effects. The quality control samples that are typically collected for a sampling program consist of field duplicates and matrix spike and matrix spike duplicates (MS/MSD) to evaluate data variability, and field and/or equipment blanks to evaluate site specific effects. Analytical or laboratory precision is estimated by the labs using results from duplicate analyses and expressed as Relative Percent Difference (RPD). Acceptance limits are set by the lab.

- Field duplicates consist of collecting a second sample at the same location using the same methodology and submitting it to the lab for the same analysis to evaluate sample variability. A field duplicate is typically collected for each 20 samples collected.
- MS/MSD samples consist of collecting extra sample volume that the lab will then introduce a known concentration of a specific analyte and evaluate accuracy and precision of the method for that sample. A MS/MSD sample is typically collected for each 20 samples collected.
- Field blanks are collected during sampling and generally consist of clean deionized water provided by the lab that is poured in the sample containers. These are analyzed to determine if any contamination of the samples occurs during sample collection at the site or during transport from the site to the lab.
- Equipment blanks are collected if dedicated sampling tools are utilized to collect samples from different locations and decontamination procedures are used. Equipment blanks are collected at the end of each sampling day the equipment was used and after decontamination procedures by running deionized water over the equipment and testing the water to verify contaminants are not being transferred to other samples through the equipment.

Collection of QA/QC samples is not currently required by the Permit; however, a robust sampling program will include the collection of such samples to prevent questions on the validity of the data collected. Consideration should be given to including the collection of QA/QC samples.

4.4 Sample Custody

Chain-of-custody (COC) procedures must be used for all samples throughout the collection, transport, and analytical process. Samples will be considered in custody if they are: 1) in the custodian's possession or view, 2) retained in a secured place (i.e., under lock) with restricted access, or 3) placed in a container and secured with an official seal so that the sample cannot be reached without breaking the seal. The principal documents used to identify samples and to document possession will be COC records, field logbooks, and field observation sheets.

The COC procedures will be initiated during sample collection. A COC record will be provided with each sample or group of samples. Each person who has custody of the samples will sign the form and ensure that the samples are not left unattended unless properly secured. Documentation of sample handling and custody will include the following:

- Sample identifier.
- Sample collection date and time.
- Any special notations on sample characteristics or analysis.
- Initials of the person collecting the sample.
- Date the sample was sent to the analytical laboratory.
- Shipping company and waybill information.

Completed COC forms will be placed into a plastic envelope and kept inside the cooler containing the samples. Upon delivery to the analytical laboratory, the COC form will be signed by the person receiving the samples. COC records will be included in the final reports prepared by the analytical laboratories and will be considered an integral part of the laboratory report. An example blank COC is provided in **Appendix E**.

5.0 Health and Safety

Field staff will be aware of safety hazards and take appropriate precautions. A health and safety tailgate meeting will be held prior to any on-site activity, and site-specific hazards will be discussed and addressed appropriately. Some key health and safety points regarding storm water monitoring are discussed below.

5.1 Notification of MDT Maintenance

When a storm event is identified for sampling, field staff will need to notify the respective MDT Maintenance Chief for the MS4 of the planned work within MDT's right-of-way.

5.2 Vehicle/Traffic Related Hazards

Traffic presents hazards when site workers are working close to roadways and the potential exists to be hit by oncoming traffic, and when driving to, from, and on the site. Whenever possible, field personnel should park as far off the road as possible to avoid interfering with traffic flow and should comply with the following:

- Turn on the vehicle's flashing yellow warning light and hazard lights.
- Mark the work area with safety cones.
- Place yellow barricade around open manhole to clearly mark the area.
- Avoid steep slopes and stream banks.
- Use a flashlight in the dark.
- Wear bright and reflective safety vests for visibility.

During wet weather it is recommended that safe speeds and distances be maintained while driving to avoid storm-related accidents. Rain and wet weather conditions may also decrease visibility and increase the potential for driving accidents.

5.3 Inclement Weather

Storm Event Monitoring occurs during wet weather. Wet weather conditions increase slipping and tripping hazards, braking distances of vehicles, and the potential for slippage or handling difficulties of field equipment. Rain fills holes and obscures trip-and-fall hazards. Tools and personnel can slip on wet surfaces. Wear appropriate wet weather clothing during storm events. Installation and maintenance activities of in-situ equipment should be conducted during dry weather periods only.

5.4 Working Near Waterways

Many of MDT's outfalls are located adjacent to major rivers and may require working near unpredictable fast-moving water. Proper planning is necessary to conduct work safely. All work should be conducted with a buddy. When working near waterways a personal flotation device must be donned. Be aware of changing river conditions.

6.0 MS4 Specific Sampling Strategy Summary

Rationale for the selection of outfalls to be sampled in each MS4 for Storm Event Monitoring and Impaired Waterbody Monitoring is provided in **Section 3.3**. A summary of the sampling locations identified in each MS4 and the required Storm Event and Impaired Waterbody monitoring analyses and counts to be performed during each semi-annual sampling event is provided in **Appendix B**.

6.1 Storm Mobilization Criteria

The semi-annual Storm Event Monitoring takes place during a storm event with a measurable amount of discharge. The storm events will be considered viable for mobilization if predicted to produce at least 0.1 inch of rainfall or snowmelt in the drainage area and have at least a 70% chance of occurrence. The mobilization criteria will be met at least 24 hours prior to the anticipated onset of rainfall. For the purposes of the criteria, storm forecasts will be obtained from the National Weather Service website (<http://www.weather.gov/>) or an equivalent source. At the time of sampling event, there should be at least 48 hours of no measurable (i.e., greater than 0.1 inch) precipitation since the previous wet weather event.

6.2 Sample Frequency

Storm Event and Impaired Waterbody monitoring will occur semi-annually (i.e., two times per year) during storm events meeting the mobilization criteria outlined in **Section 6.1**. One sampling event will be conducted between January 1st and June 30th, and one sampling event will be conducted between July 1st and December 31st of each permitted calendar year.

MDT will make all efforts to collect a sample at the required frequency. If a sample cannot be collected at a monitoring location during the six-month monitoring period, the rationale will be provided in the corresponding annual report (see **Section 7.0**). MDT will report 'Did Not Sample' (DNS) for the outfall, and a substitute sample will be collected during the subsequent six-month monitoring period in addition to the required sample. The substitute and required six-month sample may be collected from back-to-back storm events when there has been at least 48 hours of no measurable (i.e., greater than 0.1 inch) precipitation between events.

6.3 Sample Nomenclature

Samples will be placed into appropriate sample containers labeled with a specific sample ID and associated sampling metadata in indelible ink. Sample nomenclature will consist of the following components separated by a hyphen or underscore:

Component 1. A four-digit number to identify year of the sampling. “2023”

Component 2. A one-digit number to identify semi-annual sample period. Spring (January 1st through June 30th) “1” and Fall (July 1st through December 31st) “2”.

Component 3. Outfall ID where sample is collected. MDT’s outfall ID includes a three letter MS4 identifier “BZN” and a three-digit number identifier “001” separated by an underscore. The following codes correspond to the MS4 locations; BZN – Bozeman; BTM – Butte; BIL – Billings; GTF – Great Falls; HLN – Helena; KAL – Kalispell; MSO – Missoula.

Example: 2023-2-HLN_005. This sample ID indicates the sample was collected in the fall timeframe in 2023 at outfall 5 in the Helena MS4. Other sample information such as date, time, sample type, and sample matrix will be completed as part of the chain-of-custody documentation.

6.4 Lab Analysis

The water quality samples collected for Storm Event Monitoring and Impaired Waterbody Monitoring will be analyzed for parameters specific to its receiving waters impairment, as well as the parameters listed in **Table 3-1**. The analytical methods for each of the parameters to be analyzed are provided in **Table 6-12**.

Table 6-12. MS4 Stormwater Sampling Analytical Summary

Parameter	Target Reporting Limit*	Method*	Sample Containers*	Preservative*	Hold Time*
Estimated Flow	-	Field Measurement	-	-	-
pH	-	Field Measurement	-	-	-
Specific Conductance	-	Field Measurement	-	-	-
Dissolved Oxygen	-	Field Measurement	-	-	-
Temperature	-	Field Measurement	-	-	-
Turbidity	-	Field Measurement	-	-	-
Chemical Oxygen Demand (COD)	5 mg/L	EPA 410.4	500ml Plastic	Sulfuric Acid	28 days

Parameter	Target Reporting Limit*	Method*	Sample Containers*	Preservative*	Hold Time*
Total Suspended Solids (TSS)	10 mg/L	A2540 D	1L Plastic	None	7 days
Total Phosphorus	0.01 mg/L	EPA 365.1	500ml Plastic	Sulfuric Acid	28 days
Total Nitrogen	-	Calculated	-	-	-
Total Kjeldahl Nitrogen (TKN)	0.5 mg/L	EPA 351.2	500ml Plastic	Sulfuric Acid	28 days
Total Nitrate/Nitrite (Nitrite + Nitrate as N)	0.01 mg/L	EPA 353.2	500ml Plastic	Sulfuric Acid	28 days
Oil and Grease	1 mg/L	EPA 1664A	Two 1L Clear Glass	Sulfuric Acid	28 Days
Copper, Total Recoverable	0.002 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Lead, Total Recoverable	0.0003 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Zinc, Total Recoverable	0.008 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Arsenic, Total Recoverable	0.001 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Mercury, Total	0.005 ug/L	EPA 245.1	250mL Plastic	Nitric Acid	28 Days
Nitrate as N	0.01 mg/L	EPA 353.8	500ml Plastic	Sulfuric Acid	28 days
Chromium (Total)	0.005 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Polychlorinated Biphenyls (PCB)	0.08 ug/L	EPA 608.3	Three 1L Amber Glass	None	7 Days
Iron, Total Recoverable	0.02 mg/L	EPA 200.7	250mL Plastic	Nitric Acid	180 Days
Cadmium, Total Recoverable	0.00003 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
Selenium, Total Recoverable	0.001 mg/L	EPA 200.8	250mL Plastic	Nitric Acid	180 Days
<i>Escherichia coli</i>	MPN/100ml	A9223 B	100mL Sterile	Sodium Thiosulfate	30 Hours

*Information provided by Energy Labs in Helena, Montana.

7.0 Data Management and Reporting

The Permit requires the following documentation regarding the collection of storm water monitoring samples:

- Date, exact place, and time of sampling.
- Estimated duration (in hours) of the storm event(s) sampled.
- Total rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff.
- Name(s) of the individuals who performed the sampling or measurements.
- Analytical laboratory test result data and reports for storm water samples, and/or records, which minimally indicate:
 - The date(s) analyses were performed.
 - The time analyses were initiated.
 - The initials or name(s) of individual(s) who performed the analyses.
 - References and written procedures, when available, for the analytical techniques or methods used.
 - The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc. used to determine these results.

This documentation will be satisfied by the completion of field observation forms (**Appendix C**) during sampling and providing a summary of each year's monitoring results in the Annual Report. Permittees are required to electronically submit a signed copy of the annual report form (supplied by DEQ), all required attachments, and any additional requested information to the Department by March 1st of each year for the preceding calendar year.

7.1 Record Retention

Records must be retained for a period of at least five years from date of the sample, measurement, report, or application, including:

- Performed calibrations
- Maintenance records
- Original strip chart recordings
- Analytical Results
- Field Observation Forms
- Annual Reports
- Evaluation of BMP Documents

7.2 Assessment

A summary of the annual Storm Event and Impaired Waterbody monitoring sample results will be provided in the Annual Report. This summary will include text, figures, and/or tables displaying the results of the storm water monitoring.

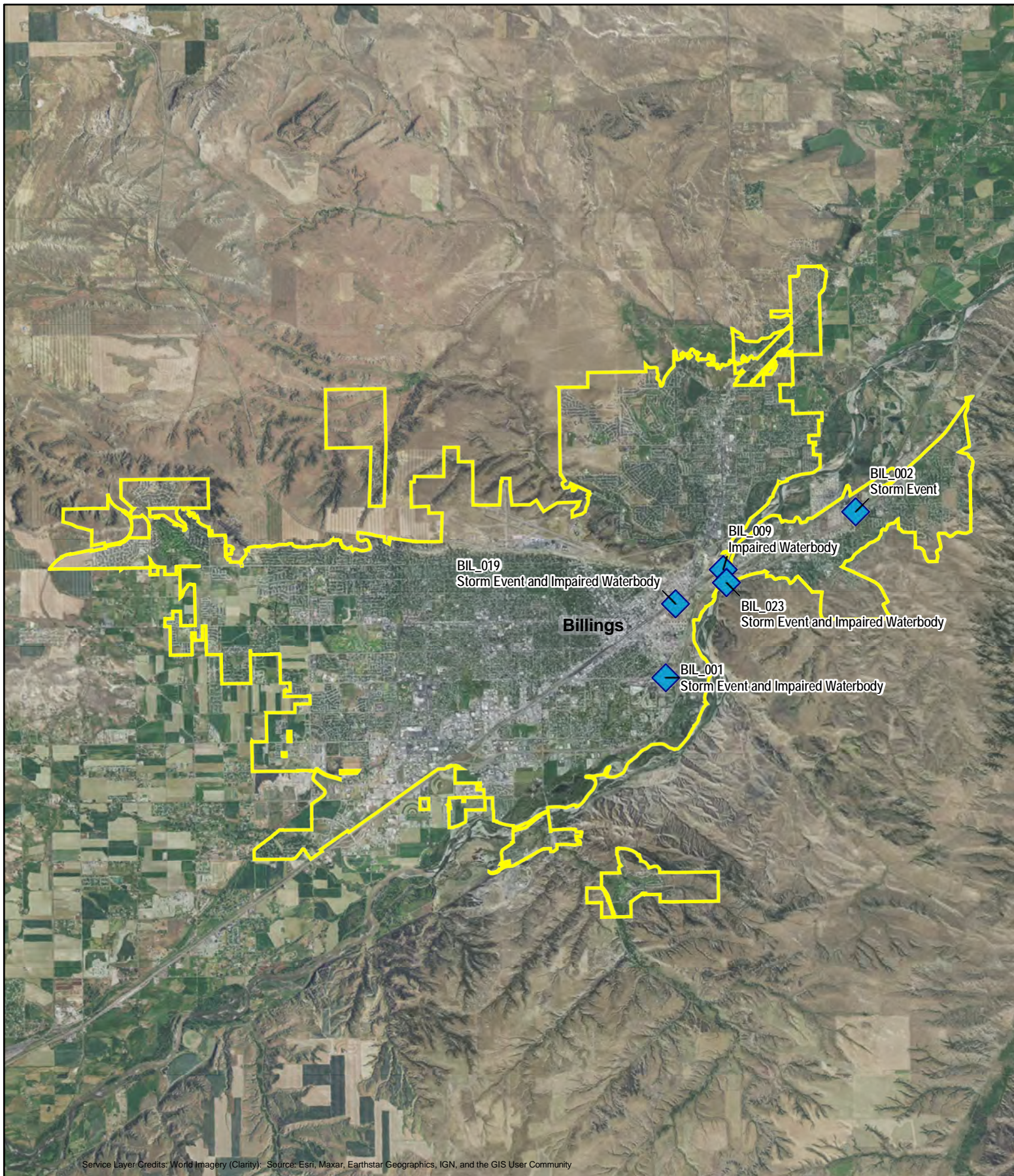
Assessment of the SWMP program effectiveness is required by the Permit to be submitted to MDEQ as part of the Annual Report for the 4th year of the Permit. MDT has not yet been required to perform storm water monitoring as they are under coverage of the 2010 MS4 general permit through an administrative extension. Therefore, MDT will provide a summary of BMP effectiveness in the Annual Report after 4 years of information has been collected to establish a baseline. Assessment of BMP effectiveness may include a trend analysis to determine if pollutant loads are being reduced over time.

8.0 References




Montana Department of Environmental Quality, 2022, General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4s).

United States Environmental Protection Agency, 1992, NPDES Storm Water Sampling Guidance Document.

FIGURES 3-1 (A-G)



Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

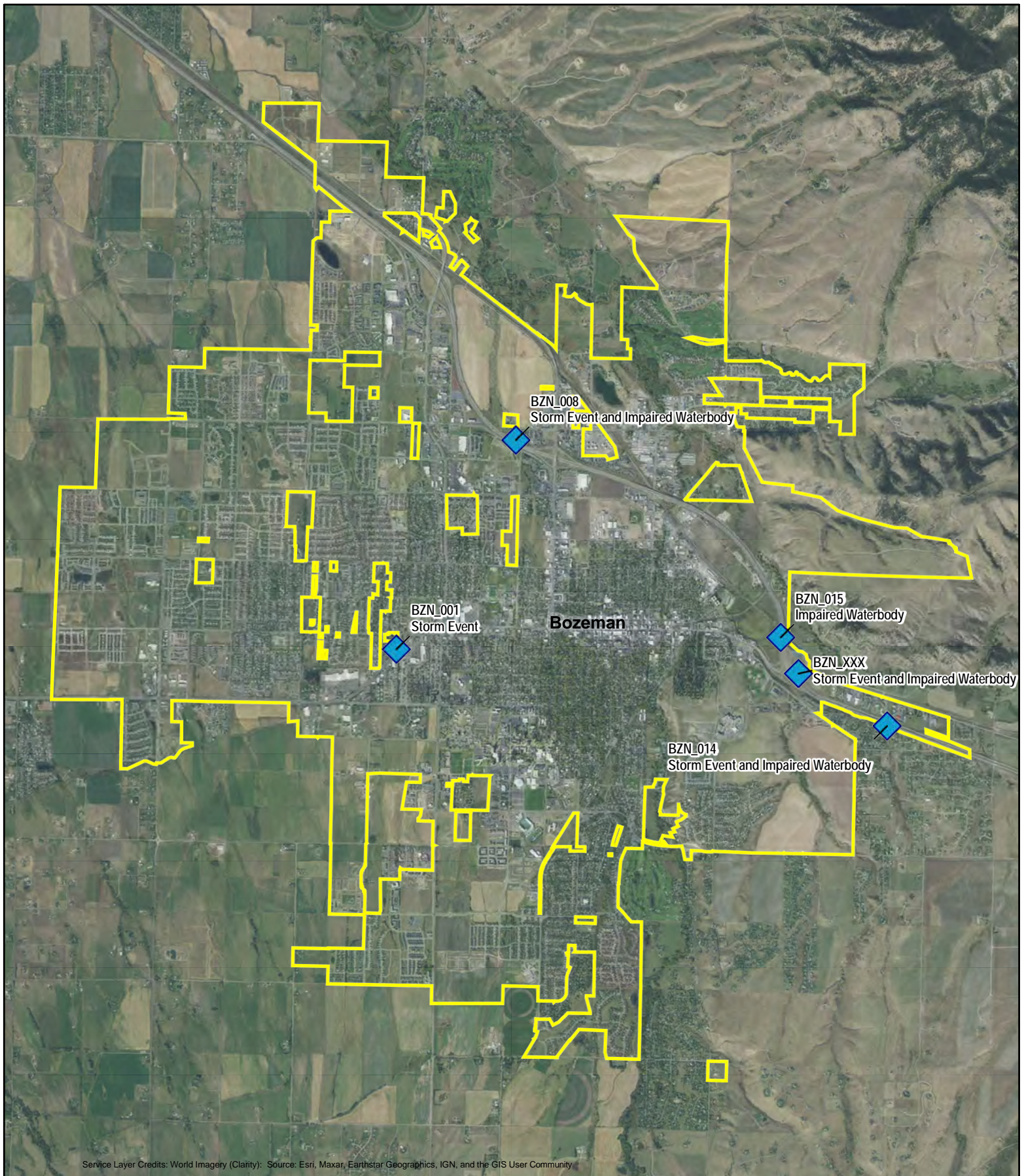


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Figure 3-1a
Billings Montana
Storm Water Monitoring Outfall Locations



Legend

- ◆ MDT MS4 Outfall
- ◆ Delegated MS4 Outfall
- MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

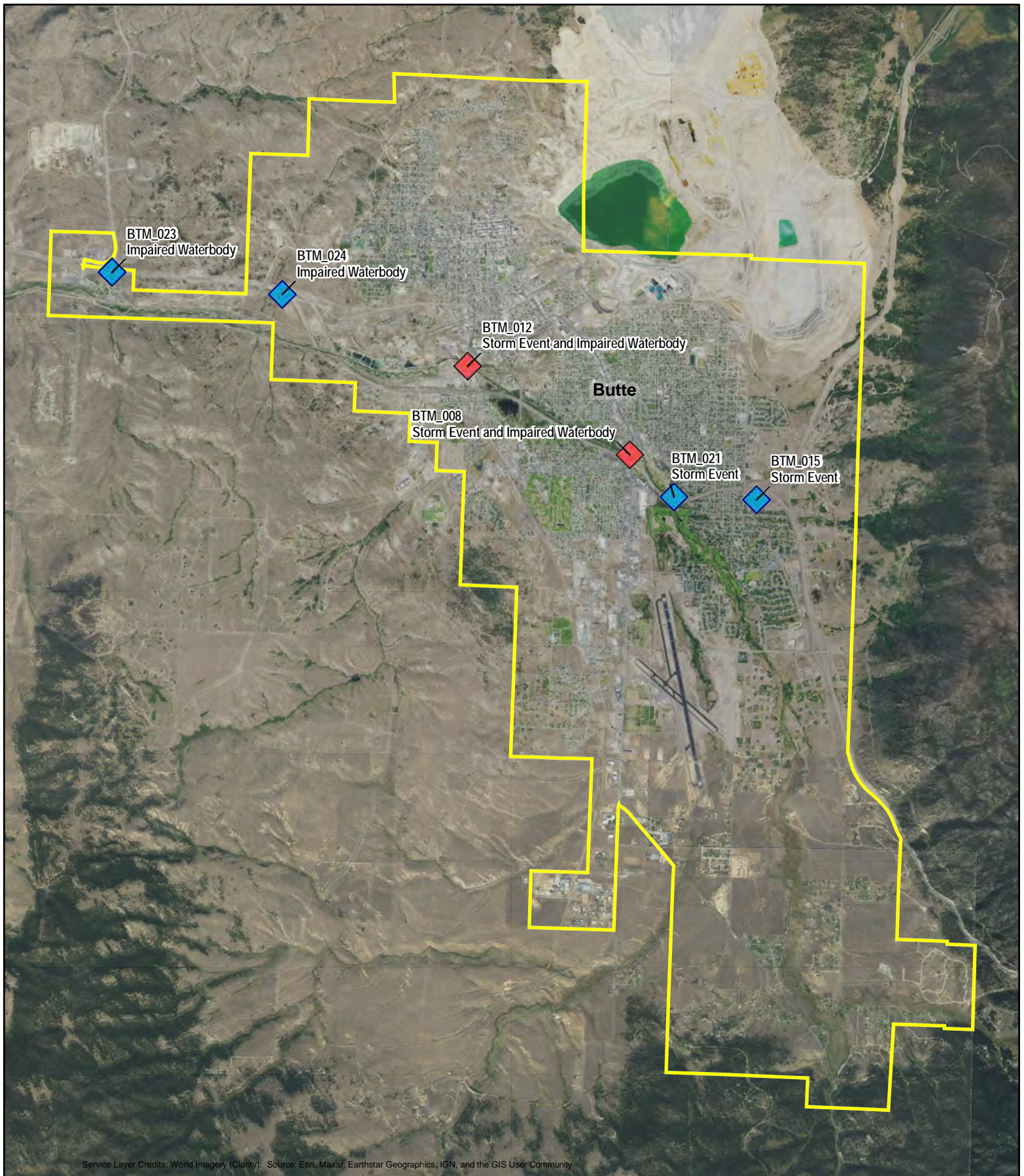


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Figure 3-1b
Bozeman Montana
Storm Water Monitoring Outfall Locations



Service Layer Credits: World Imagery (Clarity): Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

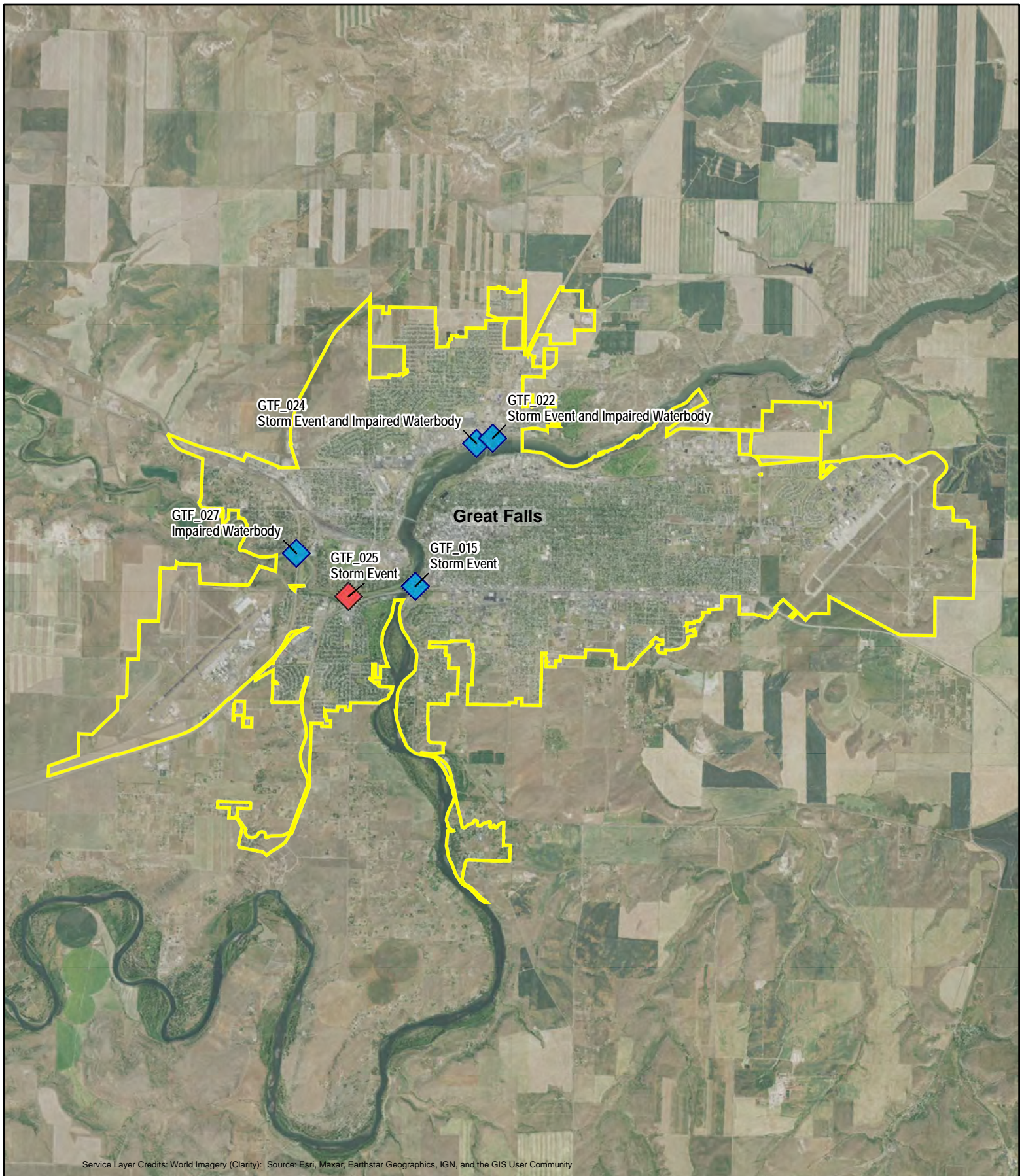
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Figure 3-1c
Butte Montana
Storm Water Monitoring Outfall Locations



Service Layer Credits: World Imagery (Clarity): Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

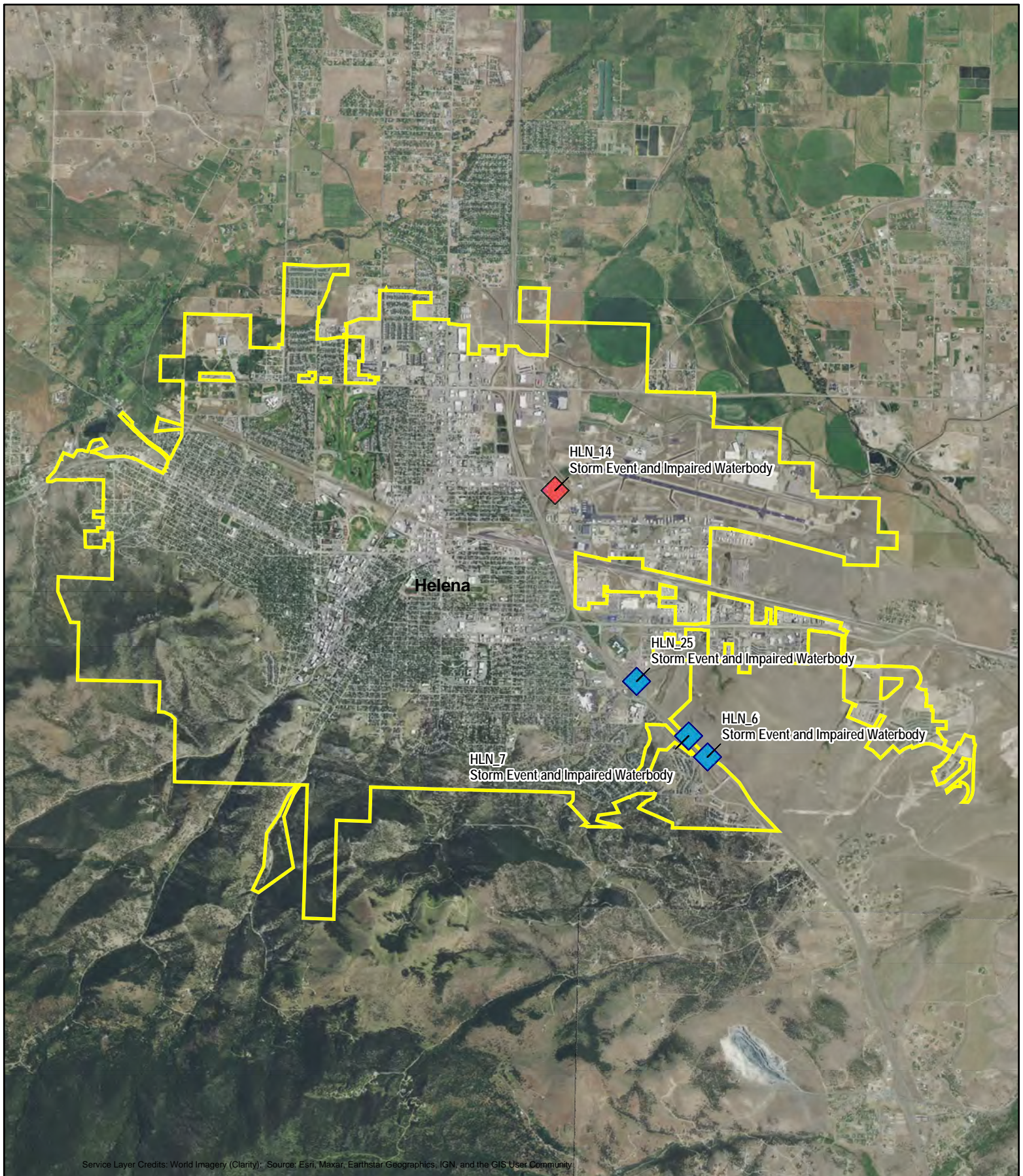


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Figure 3-1d
Great Falls Montana
Storm Water Monitoring Outfall Locations



Service Layer Credits: World Imagery (Clarity); Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

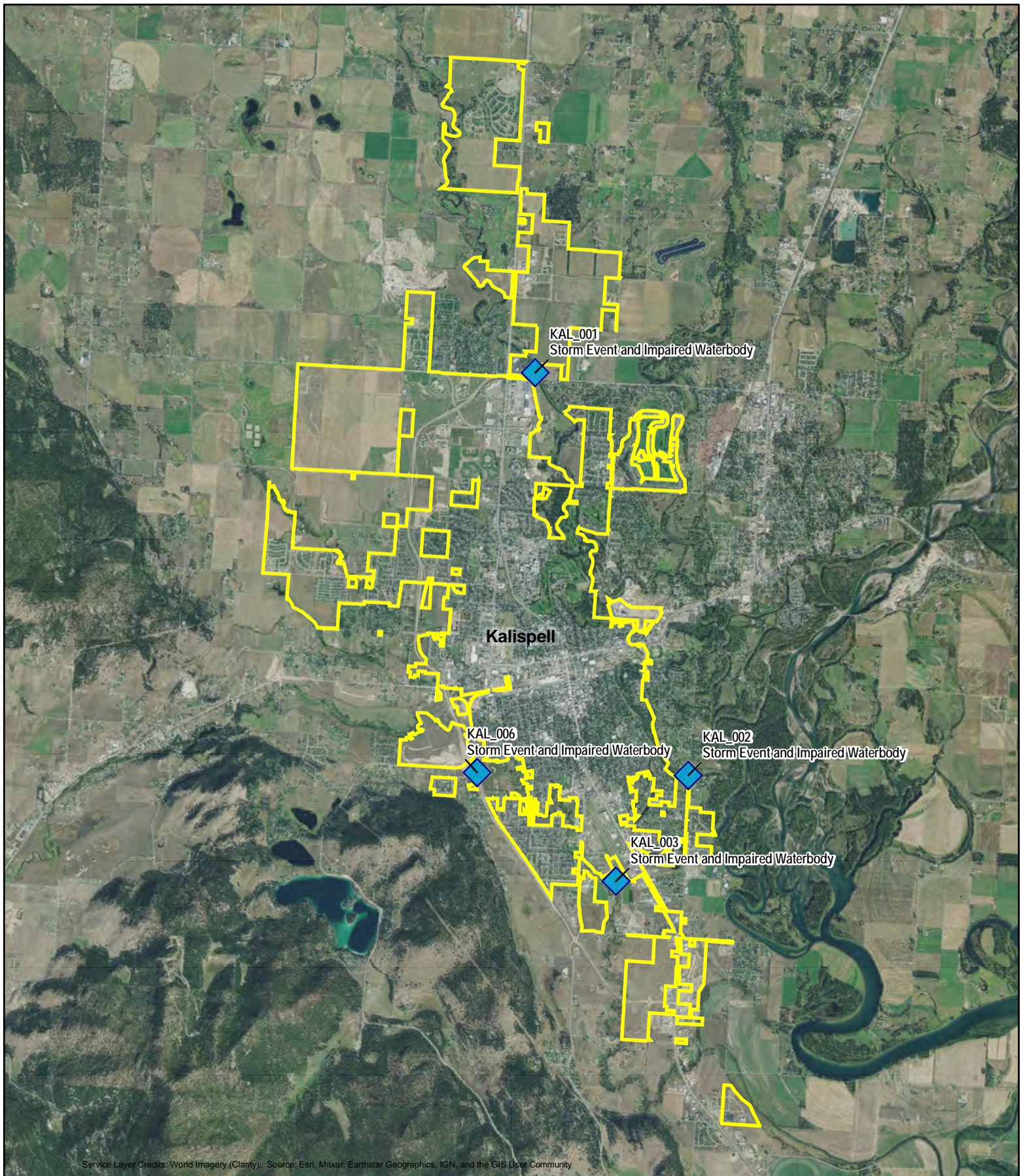
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Figure 3-1e
Helena Montana
Storm Water Monitoring Outfall Locations



Service Layer Credits: World Imagery (Clarity): Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:

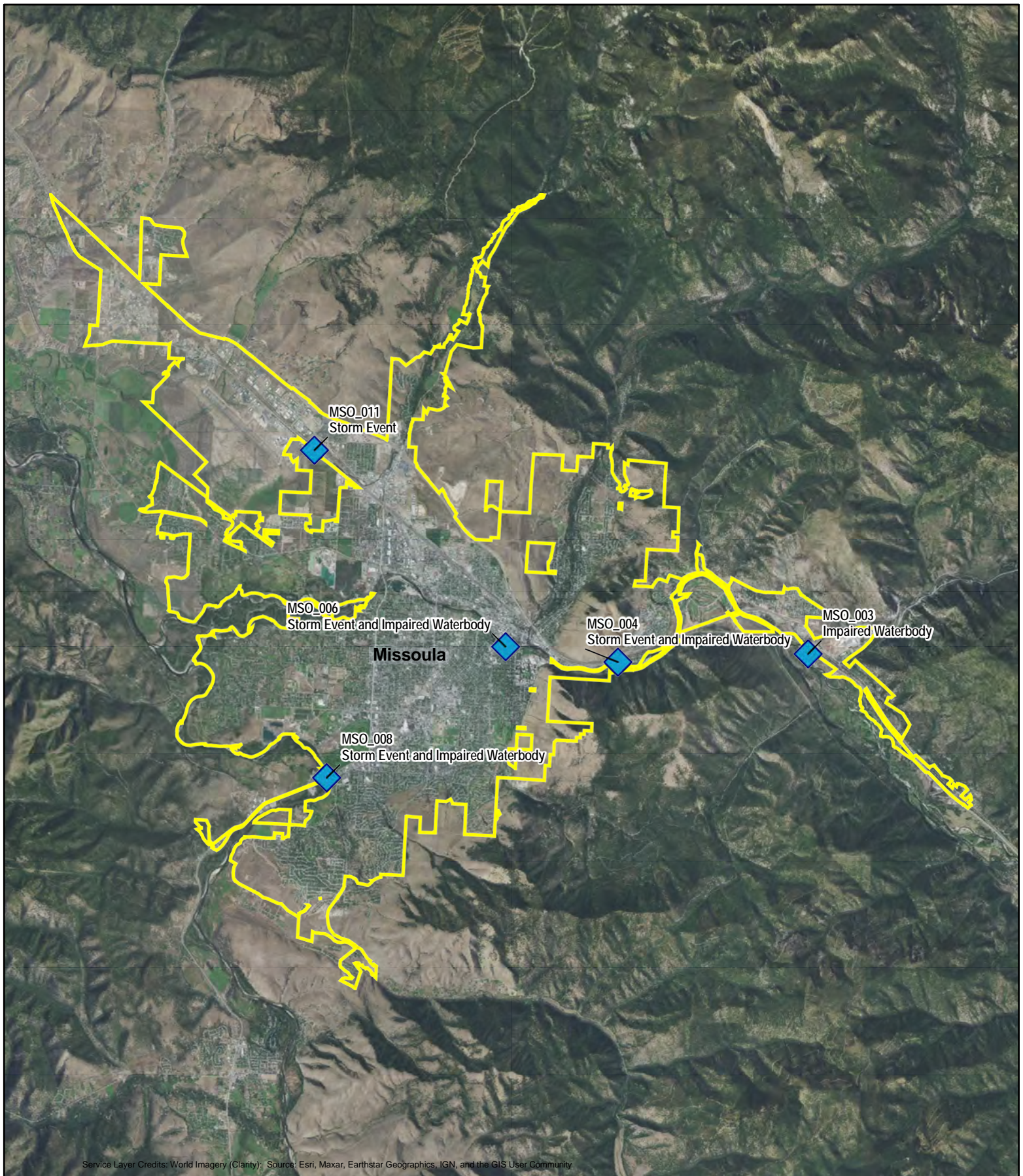
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Figure 3-1f
Kalispell Montana
Storm Water Monitoring Outfall Locations



Service Layer Credits: World Imagery (Clarity): Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

Legend

-  MDT MS4 Outfall
-  Delegated MS4 Outfall
-  MS4 Boundary

MDT MS4 Source Files Pulled 6/22/2023



0 3,500 7,000
Feet

Prepared by:



Weston Solutions, Inc.



Prepared for: MDT

Figure 3-1g
Missoula Montana
Storm Water Monitoring Outfall Locations

APPENDIX A

IMPAIRED WATERBODIES WITHIN MS4S

Impaired Waterbodies within MS4s

1.0 Billings

The below table identifies the impaired waterbodies with an MDT outfall in the City of Billings/Yellowstone County MS4s.

Billings Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Yellowstone River (MT43F001_010)	Algae (<i>Nitrogen and Phosphorus</i>)	No	TBD
	Arsenic	No	TBD
	Dissolved Oxygen	No	TBD
	Eutrophication (<i>Nitrogen and Phosphorus</i>)	No	TBD
	Oil and Grease	No	TBD
	Sediment	No	TBD
Yellowstone River (MT43F001_011)	Chlorophyll-a (<i>Nitrogen and Phosphorus</i>)	No	TBD
	Nitrate/Nitrite (Nitrite + Nitrate as N)	No	TBD
	Oil and Grease	No	TBD

Impaired Waterbodies within MS4s

2.0 Bozeman

The below table identifies the impaired waterbodies with an MDT outfall (including delegated outfalls) in the City of Bozeman MS4.

Bozeman Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
East Gallatin River (MT41H003_010)	Nitrogen (Total)	Yes	Yes*
	Phosphorus (Total)	Yes	Yes*
Mandeville Creek (MT41003_021)	Nitrogen (Total)	Yes	Yes*
	Phosphorus (Total)	Yes	Yes*
Sourdough (Bozeman Creek) (MT41H003_040)	Chlorophyll-a (<i>Nitrogen and Phosphorus</i>)	No	Yes*
	Escherichia coli	Yes	Yes*
	Nitrogen (Total)	Yes	Yes*
	Sedimentation-Siltation	Yes	Yes**

*The MS4s were assigned a WLA of 0 pounds per day (lbs/day) when the storm water system is not activated. When the storm water system is activated, MDEQ assumes the WLAs are met by adhering to the permit requirements and using monitoring as an adaptive management approach to minimize pollutant loads.

**Percent reduction allocations were developed for the MS4s. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs.

Impaired Waterbodies within MS4s

3.0 Butte

The below table identifies the impaired waterbody with an MDT outfall (including delegated outfalls) in the Butte MS4.

Butte Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Silver Bow Creek (MT76G003_020)	Arsenic	Yes	Yes*
	Cadmium	Yes	Yes*
	Copper	Yes	Yes*
	Lead	Yes	Yes*
	Mercury	Yes	Yes*
	Nitrate	Yes	No
	Nitrogen (Total)	Yes	Yes**
	Phosphorus (Total)	Yes	Yes**
	Sedimentation-Siltation	Yes	Yes***
	Zinc	Yes	Yes*

*The WLAs in lbs/day were assigned to the Butte-Silver Bow MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs.

** The Butte-Silver Bow MS4 was assigned a WLA of 0 lbs/day when the storm water system is not activated. When the storm water system is activated, MDEQ assumes the WLAs are met by adhering to the permit requirements and using monitoring as an adaptive management approach to minimize pollutant loads.

***Percent reduction allocations were developed for the Butte-Silver Bow MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs.

Impaired Waterbodies within MS4s

4.0 Great Falls

The below table identifies the impaired waterbodies with an MDT outfall (including delegated outfalls) in the City of Great Falls/Cascade County MS4. Although an impaired section of the Missouri River (MT41Q001_022) is identified as an impaired waterbody in Great Falls, there are no outfalls that discharge to that river segment.

Great Falls Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Missouri River (MT41Q001_011)	Chromium (Total)	No	TBD
	Mercury	No	TBD
	Polychlorinated biphenyls	No	TBD
	Sedimentation-Siltation	No	TBD
	Selenium	No	TBD
	Turbidity	No	TBD
Sun River (MT41K001_020)	Nitrogen (Total)	Yes	No
	Phosphorus (Total)	Yes	No*
	Sedimentation-Siltation	Yes	No
	Total Suspended Solids (TSS)	Yes	No

*Although no MS4 WLAs were developed for the Lower Sun River, 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.

Impaired Waterbodies within MS4s

5.0 Helena

The below table identifies the impaired waterbodies with an MDT outfall (including delegated outfalls) in the City of Helena MS4. Although Prickly Pear Creek is identified as an impaired waterbody in Helena, there are no outfalls that discharge to the creek. In addition, there are MDT outfalls that discharge to the Helena Valley Canal that discharges to Lake Helena.

Helena Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Lake Helena (MT41I007_010)	Arsenic	Yes	No
	Lead	Yes	No
	Nitrogen (Total)	Yes	No*
	Phosphorus (Total)	Yes	No*
Tenmile Creek (MT41I006_143)	Arsenic	Yes	No
	Cadmium	Yes	No
	Copper	Yes	No
	Lead	Yes	No
	Nitrogen (Total)	Yes	No*
	Phosphorus (Total)	Yes	No*
	Sedimentation-Siltation	Yes	No*
	Zinc	Yes	No

*Although no MS4 WLAs were developed for Tenmile Creek and Prickly Pear Creek (both discharge to Lake Helena), 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.

Impaired Waterbodies within MS4s

6.0 Kalispell

The below table identifies the impaired waterbodies with an MDT outfall (including delegated outfalls) in the City of Kalispell MS4.

Kalispell Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Middle Ashley Creek (MT76O002_020)	Nitrogen (Total)	Yes	Yes*
	Phosphorus (Total)	Yes	Yes*
	Sedimentation-Siltation	Yes	Yes*
	Temperature	Yes	No**
Lower Ashley Creek (MT76O002_030)	Dissolved Oxygen	Yes	No
	Nitrate-Nitrite (Nitrite + Nitrate as N)	Yes	No
	Nitrogen (Total)	Yes	Yes*
	Phosphorus (Total)	Yes	Yes*
	Sedimentation-Siltation	Yes	Yes*
	Temperature	Yes	No**
Spring Creek (MT76O002_040)	Arsenic	No	TBD
	Dissolved Oxygen	Yes	No
	Nitrate-Nitrite (Nitrite + Nitrate as N)	Yes	No
	Nitrogen (Total)	Yes	Yes*
	Phosphorus (Total)	Yes	Yes*
Stillwater River (MT76P001_010)	Sedimentation-Siltation	Yes	Yes*

*Percent reduction allocations were developed for the City of Kalispell MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs.

**Although no MS4 WLAs were developed for Ashley Creek, to meet the intent of the TMDL goals and future recommendations, City of Kalispell MS4 must follow the minimum control measures provided in the MPDES permit authorization for permit MTR04005, or any subsequent permit renewals.

Impaired Waterbodies within MS4s

7.0 Missoula

The below table identifies the impaired waterbodies with an MDT outfall (including delegated outfalls) in the City of Missoula/Missoula County MS4s.

Missoula Impaired Waterbodies with MDT Outfall(s)

Impaired Water	Impairment	Approved TMDL	Assigned WLA to MS4
Bitterroot River (MT76H001_030)	Lead	Yes	No
	Temperature	Yes	No
Clark Fork River (MT76E001_010)	Arsenic	Yes	No
	Cadmium	Yes	No
	Copper	Yes	No
	Iron	Yes	No
	Lead	Yes	No
	Mercury	Yes	No
	Nitrogen (Total)	Yes	No
	Phosphorus (Total)	Yes	No
	Zinc	Yes	No
Clark Fork River (MT76M001_020)	Copper	Yes	Yes*
	Iron	Yes	Yes*
	Lead	Yes	Yes*
	Nitrogen (Total)	Yes	No
	Phosphorus (Total)	Yes	No
Clark Fork River (MT76M001_030)	Arsenic	Yes	Yes*
	Cadmium	Yes	Yes*
	Copper	Yes	Yes*
	Iron	Yes	Yes*
	Lead	Yes	Yes*
	Zinc	Yes	Yes*
Grant Creek (MT76M002_130)	Algae (<i>Nitrogen and Phosphorus</i>)	N/A	N/A
	Nitrate/Nitrite (Nitrite + Nitrate as N)	Yes	Yes*
	Nitrogen (Total)	Yes	Yes*
	Sedimentation-Siltation	Yes	Yes*
	Temperature	Yes	Yes

*Percent reduction allocations were assigned to the Missoula MS4. MDEQ assumes adhering to permit BMPs and other requirements equates to meeting the WLAs.

APPENDIX B

MS4 SPECIFIC SAMPLING STRATEGY

MS4 Specific Sampling Strategy

Summary of Billings MS4 Sample Strategy							
Required Analyses	Monitoring Type	Outfall BIL_001 Samples	Outfall BIL_002 Samples	Outfall BIL_019 Samples	Outfall BIL_023 Samples	Outfall BIL_009 Samples	Total # of Samples
Estimated Flow		1	1	1	1	-	4
pH		1	1	1	1	-	4
Specific Conductance		1	1	1	1	-	4
Dissolved Oxygen		1**	1	1**	1**	1	5
Temperature		1	1	1	1	-	4
Turbidity		1	1	1	1	-	4
Chemical Oxygen Demand (COD)	Storm	1	1	1	1	-	4
Total Suspended Solids (TSS)		1**	1	1**	1**	1	5
Total Phosphorus		1**	1	1**	1**	1	5
Total Nitrogen		1**	1	1**	1**	1	5
Total Kjeldahl Nitrogen (TKN)	Event	1**	1	1**	1**	1*	5
Total Nitrate/Nitrite (Nitrite + Nitrate as N)	Event	1**	1	1**	1**	1*	5
Oil and Grease		1**	1	1**	1**	1	5
Copper, Total Recoverable		1	1	1	1	-	4
Lead, Total Recoverable		1	1	1	1	-	4
Zinc, Total Recoverable		1	1	1	1	-	4
Arsenic, Total Recoverable	Impaired Waterbody	1	-	1	1	1	4

*Required for total nitrogen calculation

**Impaired Waterbody parameter covered by Storm Event

MS4 Specific Sampling Strategy

Summary of Bozeman MS4 Sample Strategy							
Required Analyses	Monitoring Type	Outfall BZN_XXX Samples	Outfall BZN_014 Samples	Outfall BZN_001 Samples	Outfall BZN_015 Samples	Outfall BZN_008 Samples	Total # of Samples
Estimated Flow		1	1	1	-	1	4
pH		1	1	1	-	1	4
Specific Conductance		1	1	1	-	1	4
Dissolved Oxygen		1	1	1	-	1	4
Temperature		1	1	1	-	1	4
Turbidity		1	1	1	-	1	4
Chemical Oxygen Demand (COD)	Storm	1	1	1	-	1	4
Total Suspended Solids (TSS)		1	1	1	-	1	4
Total Phosphorus		1**	1**	1	1	1**	5
Total Nitrogen		1**	1**	1	1**	1**	5
Total Kjeldahl Nitrogen (TKN)	Event	1*	1*	1	1*	1*	5
Total Nitrate/Nitrite (Nitrite + Nitrate as N)		1*	1*	1	1*	1*	5
Oil and Grease		1	1	1	-	1	4
Copper, Total Recoverable		1	1	1	-	1	4
Lead, Total Recoverable		1	1	1	-	1	4
Zinc, Total Recoverable		1	1	1	-	1	4

*Required for total nitrogen calculation

**Impaired Waterbody parameter covered by Storm Event

MS4 Specific Sampling Strategy

Summary of Butte MS4 Sample Strategy								
Required Analyses	Monitoring Type	Outfall BTM_012 Samples	Outfall BTM_021 Samples	Outfall BTM_023 Samples	Outfall BTM_024 Samples	Outfall BTM_008 Samples	Outfall BTM_015 Samples	Total # of Samples
Estimated Flow		1	1	-	-	1	1	4
pH		1	1	-	-	1	1	4
Specific Conductance		1	1	-	-	1	1	4
Dissolved Oxygen		1	1	-	-	1	1	4
Temperature		1	1	-	-	1	1	4
Turbidity	S	1	1	-	-	1	1	4
Chemical Oxygen Demand (COD)	t	1	1	-	-	1	1	4
Total Suspended Solids (TSS)	o	1**	1	1	1	1**	1	6
Total Phosphorus	r	1**	1	1	1	1**	1	6
Total Nitrogen	m	1**	1	1	1	1**	1	6
Total Kjeldahl Nitrogen (TKN)	E	1	1	1*	1*	1	1	6
Total Nitrate/Nitrite (Nitrite + Nitrate as N)	v	1	1	1*	1*	1	1	6
Oil and Grease	e	1	1	-	-	1	1	4
Copper, Total Recoverable	n	1**	1	1	1	1**	1	6
Lead, Total Recoverable	t	1**	1	1	1	1**	1	6
Zinc, Total Recoverable		1**	1	1	1	1**	1	6
Arsenic, Total Recoverable		1	-	1	1	1	-	4
Mercury, Total		1	-	1	1	1	-	4
Nitrate as N	Impaired Waterbody	1	-	1	1	1	-	4
Cadmium, Total Recoverable		1	-	1	1	1	-	4

*Required for total nitrogen calculation

**Impaired Waterbody parameter covered by Storm Event Sampling

MS4 Specific Sampling Strategy

Summary of Great Falls MS4 Sample Strategy								
Required Analyses	Monitoring Type	Outfall GTF_024 Samples	Outfall GTF_025 Samples	Outfall GTF_015 Samples	Outfall GTF_022 Samples	Outfall GTF_027 Samples	Outfall GTF_017 Samples	Total # of Samples
Estimated Flow		1	1	1	1	-	-	4
pH		1	1	1	1	-	-	4
Specific Conductance		1	1	1	1	-	-	4
Dissolved Oxygen		1	1	1	1	-	-	4
Temperature	Storm	1	1	1	1	-	-	4
Turbidity		1**	1	1	1**	-	1	5
Chemical Oxygen Demand (COD)		1	1	1	1	-	-	4
Total Suspended Solids (TSS)		1**	1	1	1**	1	1	6
Total Phosphorus	Event	1	1	1	1	1	-	5
Total Nitrogen		1	1	1	1	1	-	5
Total Kjeldahl Nitrogen (TKN)		1	1	1	1	1*	-	5
Total Nitrate/Nitrite (Nitrite + Nitrate as N)		1	1	1	1	1*	-	5
Oil and Grease		1	1	1	1	-	-	4
Copper, Total Recoverable		1	1	1	1	-	-	4
Lead, Total Recoverable		1	1	1	1	-	-	4
Zinc, Total Recoverable		1	1	1	1	-	-	4
Mercury, Total		1	-	-	1	-	1	3
Chromium (Total)		1	-	-	1	-	1	3
Polychlorinated Biphenyls (PCB)	Impaired Waterbody	1	-	-	1	-	1	3
Selenium, Total Recoverable		1	-	-	1	-	1	3

*Required for total nitrogen calculation

**Impaired Waterbody parameter covered by Storm Event Sampling

MS4 Specific Sampling Strategy

Summary of Helena MS4 Sample Strategy						
Required Analyses	Monitoring Type	Outfall HLN_006 Samples	Outfall HLN_007 Samples	Outfall HLN_014 Samples	Outfall HLN_025 Samples	Total # of Samples
Estimated Flow		1	1	1	1	4
pH		1	1	1	1	4
Specific Conductance		1	1	1	1	4
Dissolved Oxygen		1	1	1	1	4
Temperature		1	1	1	1	4
Turbidity		1	1	1	1	4
Chemical Oxygen Demand (COD)	Storm	1	1	1	1	4
Total Suspended Solids (TSS)		1	1	1	1	4
Total Phosphorus		1**	1**	1**	1**	4
Total Nitrogen		1**	1**	1**	1**	4
Total Kjeldahl Nitrogen (TKN)	Event	1**	1**	1**	1**	4
Total Nitrate/Nitrite (Nitrite + Nitrate as N)		1**	1**	1**	1**	4
Oil and Grease		1	1	1	1	4
Copper, Total Recoverable		1	1	1	1	4
Lead, Total Recoverable		1**	1**	1**	1**	4
Zinc, Total Recoverable		1	1	1	1	4
Arsenic, Total Recoverable	Impaired Waterbody	1	1	1	1	4

**Impaired Waterbody parameter covered by Storm Event

MS4 Specific Sampling Strategy

Summary of Kalispell MS4 Sample Strategy						
Required Analyses	Monitoring Type	Outfall KAL_003 Samples	Outfall KAL_006 Samples	Outfall KAL_001 Samples	Outfall KAL_002 Samples	Total # of Samples
Estimated Flow		1	1	1	1	4
pH		1	1	1	1	4
Specific						
Conductance		1	1	1	1	4
Dissolved Oxygen		1**	1	1	1	4
Temperature		1**	1**	1	1	4
Turbidity		1	1	1	1	4
Chemical Oxygen Demand (COD)	S t o r m	1	1	1	1	4
Total Suspended Solids (TSS)		1**	1**	1**	1**	4
Total Phosphorus		1**	1**	1	1	4
Total Nitrogen		1**	1**	1	1	4
Total Kjeldahl Nitrogen (TKN)	E v e n t	1**	1	1	1	4
Total Nitrate/Nitrite (Nitrite + Nitrate as N)		1**	1**	1	1	4
Oil and Grease		1	1	1	1	4
Copper, Total Recoverable		1	1	1	1	4
Lead, Total Recoverable		1	1	1	1	4
Zinc, Total Recoverable		1	1	1	1	4

**Impaired Waterbody parameter covered by Storm Event

MS4 Specific Sampling Strategy

Summary of Missoula MS4 Sample Strategy							
Required Analyses	Monitoring Type	Outfall MSO_011 Samples	Outfall MSO_006 Samples	Outfall MSO_008 Samples	Outfall MSO_004 Samples	Outfall MSO_003 Samples	Total # of Samples
Estimated Flow		1	1	1	1	-	4
pH		1	1	1	1	-	4
Specific Conductance		1	1	1	1	-	4
Dissolved Oxygen		1	1	1	1	-	4
Temperature		1	1	1**	1	-	4
Turbidity		1	1	1	1	-	4
Chemical Oxygen Demand (COD)	Storm Event	1	1	1	1	-	4
Total Suspended Solids (TSS)		1	1	1	1	-	4
Total Phosphorus		1	1	1	1	-	4
Total Nitrogen ²		1	1	1	1	-	4
Total Kjeldahl Nitrogen (TKN)		1	1	1	1	-	4
Total Nitrate/Nitrite (Nitrite + Nitrate as N)		1	1	1	1	-	4
Oil and Grease		1	1	1	1	-	4
Copper, Total Recoverable		1	1	1	1	-	4
Lead, Total Recoverable		1	1	1**	1	-	4
Zinc, Total Recoverable		1	1	1	1	-	4
Arsenic, Total Recoverable	Impaired Waterbody	-	1	-	1	1	3
Mercury, Total		-	1	-	-	-	1
Iron, Total Recoverable		-	1	-	1	1	3
Cadmium, Total Recoverable		-	1	-	1	1	3

**Impaired Waterbody parameter covered by Storm Event

APPENDIX C

FIELD OBSERVATION SHEET



MDT MS4 Outfall Monitoring FIELD OBSERVATIONS AND TESTING LOG SHEET

PROJECT/SURVEY NAME		MS4/Outfall ID			
DATE		TIME STARTED (AT SITE)		TIME FINISHED (AT SITE)	
FIELD TEAM				RECORDER	
STORM EVENT DETAILS:		Rainfall Probability _____ %		Predicted Rainfall amount _____ in	
WEATHER CONDITIONS <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> FOGGY <input type="checkbox"/> DRIZZLING <input type="checkbox"/> RAINY					
SURFACE WATER APPEARANCE	ODOR <input type="checkbox"/> ROTTEN EGG/H ₂ S <input type="checkbox"/> MUSTY <input type="checkbox"/> SEWAGE <input type="checkbox"/> AMMONIA <input type="checkbox"/> GASOLINE/PETROLEUM <input type="checkbox"/> FISH/DECAY <input type="checkbox"/> CHLORINE <input type="checkbox"/> NONE <input type="checkbox"/> CHEMICAL <input type="checkbox"/> OTHER <input type="checkbox"/> NONE				
	COLOR <input type="checkbox"/> YELLOW <input type="checkbox"/> GREEN <input type="checkbox"/> BLUE <input type="checkbox"/> BROWN <input type="checkbox"/> RED <input type="checkbox"/> COLORLESS <input type="checkbox"/> OTHER				
	FLOATING MATERIALS (ALL THAT APPLY) <input type="checkbox"/> SUDS/FOAM <input type="checkbox"/> OILY SHEEN <input type="checkbox"/> ORGANIC MATERIAL <input type="checkbox"/> SCUM <input type="checkbox"/> ALGAE <input type="checkbox"/> OTHER (DESCRIBE) <input type="checkbox"/> NONE				
	TRASH <input type="checkbox"/> NONE <input type="checkbox"/> STYROFOAM <input type="checkbox"/> WOOD <input type="checkbox"/> PLASTIC (CUPS, BOTTLES, BAGS) <input type="checkbox"/> OTHER (DESCRIBE)				
	TURBIDITY <input type="checkbox"/> CLEAR <input type="checkbox"/> CLOUDY <input type="checkbox"/> HEAVY CLOUDINESS, OPAQUE				
	Water Quality Appearance Comments:				
SAMPLE COLLECTION TIME: _____			Samples collected:		
FIELD MEASUREMENTS (Taken in duplicate)			Instrument Model/Serial # _____		
TEMP (°C)	pH	CONDUCTIVITY (uS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	
TEMP (°C)	pH	CONDUCTIVITY (uS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	
QA/QC SAMPLES:		Instrument Calibration Date _____ Cal Fluids Expired Yes/No			
Level estimation at time of grab sample = _____ inches			Time of flow estimation, if possible _____		
			DEPTH		Inches
			WIDTH		Inches
			VELOCITY (choose one)		FT/SEC IN/SEC
SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)					
PHOTOS TAKEN: <input type="checkbox"/> YES <input type="checkbox"/> NO PHOTO NUMBERS AND NOTES:					
TEAM LEADER'S SIGNATURE _____					

APPENDIX D

CALIBRATION LOG

Water Quality Meter Calibration Log

Date: _____ Personnel: _____ Equipment type: _____ Serial Number: _____

Temp		DO (%)		Specific Conductivity EC 1413		pH						ORP 240mV		Turbidity (FNU)			
						4		7		10				0		124	
Actual Temp	Reading	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal

Notes:

Date: _____ Personnel: _____ Equipment type: _____ Serial Number: _____

Temp		DO (%)		Specific Conductivity EC 1413		pH						ORP 240mV		Turbidity (FNU)			
						4		7		10				0		124	
Actual Temp	Reading	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal

Notes:

Date: _____ Personnel: _____ Equipment type: _____ Serial Number: _____

Temp		DO (%)		Specific Conductivity EC 1413		pH						ORP 240mV		Turbidity (FNU)			
						4		7		10				0		124	
Actual Temp	Reading	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal

Notes:

Date: _____ Personnel: _____ Equipment type: _____ Serial Number: _____

Temp		DO (%)		Specific Conductivity EC 1413		pH						ORP 240mV		Turbidity (FNU)			
						4		7		10				0		124	
Actual Temp	Reading	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal	Pre Cal	Post Cal

Notes:

APPENDIX E

CHAIN OF CUSTODY

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY

DATE: _____

PAGE: OF

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Appendix E

MDT SWMP Response to Comments

(To be attached to final Document)

