

City of Missoula

Small MS4 Storm Water Management Program

Prepared for MPDES Permit No. MTR040007

Prepared By:

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INTRODUCTION

Executive Summary

Storm water management is a critical municipal interest. The effectiveness and efficiency of storm water management have a direct impact on public health and safety, surface water quality, wildlife habitat, and future development. Consequently, the Federal government amended the Clean Water Act (CWA) in 1987 to regulate the management of storm water runoff from municipalities and specific industrial classifications. Recent state and federal regulations ("Phase II") promulgated in response to those amendments require that designated municipalities obtain coverage under a Statewide General Permit by March of 2003. The City of Missoula has prepared this Storm Water Management Program (SWMP) in fulfillment of the requirements of that permit.

The purpose of this SWMP is to describe efforts proposed by the City to control discharge of pollutants to State Waters in storm water. The SWMP includes descriptions of storm water management activities that will be undertaken during the second cycle of the statewide general permit, which extends through 2014. The program has been built around a suite of programmatic elements that the City has already implemented, is in the process of developing for implementation, or plans to develop in order to meet new or revised requirements set forth in the latest General Permit. Together, these programmatic elements address the six minimum control measures required under the Statewide General Permit:

- Public Education - The City must continue to educate the public in its permitted jurisdiction about the importance of the storm water program and the public's role in that program.
- Public Involvement/Participation – The City must continue to comply with all state and local notice requirements when implementing a public involvement/participation program.
- Illicit Discharge Detection and Elimination – The City must continue to adopt and enforce ordinances or take equivalent measures to prohibit illicit discharges. The City must also implement a program to detect illicit discharges.
- Construction Site Storm Water Runoff Control – The City must continue to develop a program to control the discharge of pollutants from construction sites greater than one acre in size within its permittee jurisdiction.
- Post-Construction Storm Water Management in New Development and Redevelopment – The City must continue to require long-term post-construction best management practices (BMPs) that protect water quality and control runoff flow to be incorporated into development and significant redevelopment projects.
- Pollution Prevention/Good Housekeeping for Municipal Operations – The City must continue to examine its activities and develop programs to prevent the discharge of pollutants from these activities. The City must also educate staff on pollution prevention practices.

The program is designed to reduce the discharge of pollutants from the City's municipal separate storm sewer system (MS4) to the maximum extent practicable (MEP) and to protect water quality. Based on EPA's 2008 303(d) list, water bodies that the City discharges to, which are impaired, include the Clark Fork River, Bitterroot River, Grant Creek, and Rattlesnake Creek. In addition, the areas within the City storm water jurisdiction can be characterized as primarily residential, with some commercial, and very little industrial. Based on these factors, the pollutants of concern / causes of impairment targeted by the City's Storm Water Management Program will include:

- Chlorophyll-a
- Nitrogen, Nitrate
- Organic Enrichment (Sewage)
- Phosphorus
- Sedimentation/Siltation

The City has also identified additional potential contaminants and causes of impairment of concern, which are not required to be addressed by the Department of Environmental Quality. These identified contaminants and causes of impairment include:

- Arsenic
- Biological indicators such as fecal coliform
- Cadmium
- Chloride
- Copper
- Excess Algal Growth
- Lead
- Litter and Trash
- Magnesium Chloride
- Oil, Hydro carbons, including PAHs
- Pesticides
- Sodium Chloride
- Stream bank Alteration
- Temperature

The Missoula area has a long history of addressing water quality issues. In 1988, the Missoula City-County Health Department applied for and obtained Sole Source Aquifer designation from the US EPA. This designation requires that all projects which obtain federal funding be reviewed by the EPA. In January 1993, the Missoula Board of County Commissioners and the Missoula City Council passed a resolution creating the Missoula Valley Water Quality District (MVWQD), providing for more direct control for the protection of water resources with the Missoula Valley. The MVWQD has since undertaken numerous projects to protect and improve water quality. These projects include removal of auto shop floor drains that discharge through subsurface injection, public education on issues pertaining to water quality, household hazardous waste collection, establishment of a permitting system for facilities that store regulated substances, and regulation of deicer products. In August 1998, the Clark Fork River Voluntary Nutrient Reduction Program was finalized and put into place as an agreement among major parties in the Montana portion of the watershed to significantly reduce nutrient pollution along a 200-mile stretch of the Clark Fork River. The City of Missoula has chosen to build its storm water program on this framework of successful, established programs that are already making significant strides to protect our water resources.

Montana Pollutant Discharge Elimination System

The State of Montana has established a permit system which is similar to the federal permit system, called the Montana Pollutant Discharge Elimination System (MPDES). This system is administered by the Montana Department of Environmental Quality (MDEQ). The Administrative Rules of Montana (ARM), section 17.30.1105 require that any entity discharging storm water from a point source must obtain coverage under an MPDES general permit. MPDES general permits cover discharges 1) associated with construction activity; 2) associated with industrial activity; 3) associated with mining, oil, and gas activity; 4) from small municipal separate storm sewer systems (small MS4s); 5) for which the department determines that storm water controls are needed based on wasteload allocations that are part

of Total Maximum Daily Loads (TMDLs) that address the pollutants of concern; and 6) that the department determines are contributing to a violation of a water quality standard or are significant contributors of pollutants to surface waters.

Montana Designated Small MS4s

The EPA established guidelines for designating small MS4s, which MDEQ used to create the list of Montana small MS4s named in ARM 17.30.1102(23) – the Urban Areas (as determined by the 2010 decennial census by the United States census bureau) of the City of Billings and Yellowstone County; the City of Missoula and Missoula County; and the City of Great Falls and Cascade County. In addition, MS4s located within the cities of Bozeman, Butte, Helena, and Kalispell were also named because their discharge “results in, or has the potential to result in, exceedances of water quality standards, including impairment of designated uses, or has other significant water quality impacts, including habitat and biological impacts”.

Municipalities within the Missoula Urban area which own and operate separate storm sewer systems are the City of Missoula, Missoula County, Montana Department of Transportation – Missoula Office, and the University of Montana.

General Permit

The General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer Systems provides authorization to discharge storm water to waters of the United States under the Montana Pollutant Discharge Elimination System. The General Permit, under the authority of the Administrative Rules of Montana, defines effluent limitations; establishes monitoring, recording, and reporting requirements; establishes requirements for a Storm Water Management Program; and sets standard permit conditions.

Montana Administrative Rules and the General Permit allow for the sharing of responsibilities; as such, the Missoula small MS4 operators have applied for and received coverage under a single authorization. With the common goal of achieving the cleanest storm water possible, the co-permittees have, and will continue to, collaborate their knowledge, ideas, and resources. As the co-permittees work together, each will retain jurisdiction over its own permit area, maintain its own records, complete its own annual report, and individually meet Permit requirements until or unless other written agreements are made.

The permit area of Missoula has been defined by the MDEQ as the Urban Area delineated following the most recent decennial census, and responsibility has been divided among the co-permittees as follows:

- 1) The Montana Department of Transportation – parcels owned by the department and the numerous state traffic routes within the Urban Area.
- 2) The University of Montana - parcels owned by the University within the Urban Areas.
- 3) The City of Missoula – areas within the City Limits and Urban Area which are not owned by either the Department of Transportation or the University of Montana, excluding state traffic routes.
- 4) Missoula County – areas outside the City Limits, but within the Urban Area which are not owned by either the Department of Transportation or the University of Montana, excluding state traffic routes.

Storm Water Management Program Requirements

As required by the General Permit for Storm Water Discharge Associated with Small Municipal Separate Storm Sewer System (MS4), permittees must develop a Storm Water Management Program designed to reduce the discharge of pollutants from the permitted Small MS4 to the maximum extent practicable to protect water quality, and to satisfy the appropriate water quality requirements of the Montana Water Quality Act. 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. Each Minimum Control Measure (MCM) has requirements to identify how the success of the Best Management Practice (BMP) will be evaluated, including how the measurable goals for each of the BMPs were selected. In addition to these requirements, permittees are required to maintain documentation describing how and why each of the BMPs and measurable goals for the SWMP was selected. These items have been addressed in the Minimum Control Measure sections of this document.

The SWMP must include a section describing how the SWMP will control discharges of pollutants of concern (POC) and ensure storm water discharges will not cause or contribute to instream exceedances of water quality standards. The Montana Department of Environmental Quality's 2010 303(d) list is being used as the basis for the list of (POC) and the specifics of addressing these can be found on pages 5 – 7.

Finally, each Minimum Control Measure has requirements to identify the responsible party for overall management and implementation of the programs and Best Management Practices. A Storm Water Program Staff Organizational Chart with responsibilities assigned for each BMP has been included in this section on page 8. Since some agencies involved in the storm water program are funded by both City and County taxes, these agencies have been shown on the chart to illustrate the relationship. Responsibilities are also noted in the Minimum Control Measure sections.

This program documents the efforts of the City of Missoula to meet the requirements of the MDEQ Storm Water General Permit.

Pollutants of Concern

Water Body	Pollutant	Probable Source(s)	Associated Uses	TMDL	BMPs
Clark Fork River, Fish Creek to Rattlesnake Creek	Arsenic	Mill Tailings	Aquatic Life Cold Water Fishery Drinking Water	No	N/A
	Cadmium	Mill Tailings	Aquatic Life Cold Water Fishery Drinking Water	No	N/A
	Chlorophyll-a	Industrial Point Source Discharge Municipal Point Source Discharges On-Site Treatment Systems	Aquatic Life Cold Water Fishery Primary Contact Recreation	Yes	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 5.2, 6.1, 6.2
	Copper	Mill Tailings	Aquatic Life Cold Water Fishery	No	N/A
	Nitrogen (Total)	Industrial Point Source Discharge Municipal Point Source Discharges On-Site Treatment Systems	Aquatic Life Cold Water Fishery	Yes	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 5.2, 6.1, 6.2
	Organic Enrichment (Sewage) Biological Indicators	Industrial Point Source Discharge Municipal Point Source Discharges On-Site Treatment Systems	Aquatic Life Cold Water Fishery	Yes	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 5.2, 6.1, 6.2
	Phosphorus (Total)	Industrial Point Source Discharge Municipal Point Source Discharges On-Site Treatment Systems	Aquatic Life Cold Water Fishery	Yes	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 5.2, 6.1, 6.2

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Water Body	Pollutant	Probable Source(s)	Associated Uses	TMDL	BMPs
Bitterroot River, Eightmile to the mouth	Alteration in stream-side or littoral vegetative covers	Rangeland Grazing Wet Weather Discharges	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 5.2, 6.1, 6.2
	Copper	Sediment Resuspension (Contaminated Sediment)	Aquatic Life Cold Water Fishery	No	N/A
	Lead	Sediment Resuspension (Contaminated Sediment)	Aquatic Life Cold Water Fishery	No	N/A
	Nitrogen, Nitrate	On-Site Treatment Systems Rangeland Grazing Wet Weather Discharges	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 5.2, 6.1, 6.2
	Sedimentation/Siltation	Sediment Resuspension Streambank Modifications Wet Weather Discharges	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 5.2, 6.1, 6.2
Grant Creek, headwaters to the mouth	Alteration in stream-side or littoral vegetative covers	Irrigated Crop Production Site Clearance	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 6.1, 6.2
	Excess Algal Growth	Irrigated Crop Production Site Clearance	Aquatic Life Cold Water Fishery Primary Contact Recreation	No	1.1, 1.2, 1.3, 1.4, 1.5, 6.1, 6.2
	Low flow alterations	Flow Alterations Irrigated Crop Production Site Clearance	Aquatic Life Cold Water Fishery Industrial Primary Contact Recreation	No	1.1, 1.2, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 6.1, 6.2
	Nitrate/Nitrite (Nitrite + Nitrate as N)	Irrigated Crop Production Site Clearance	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 6.1, 6.2
	Sedimentation/Siltation	Site Clearance Streambank Modifications	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 6.1, 6.2
	Temperature, water	Flow Alterations Loss of Riparian Habitat	Aquatic Life Cold Water Fishery	No	1.1, 1.2, 1.3, 1.4, 1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1, 6.1, 6.2

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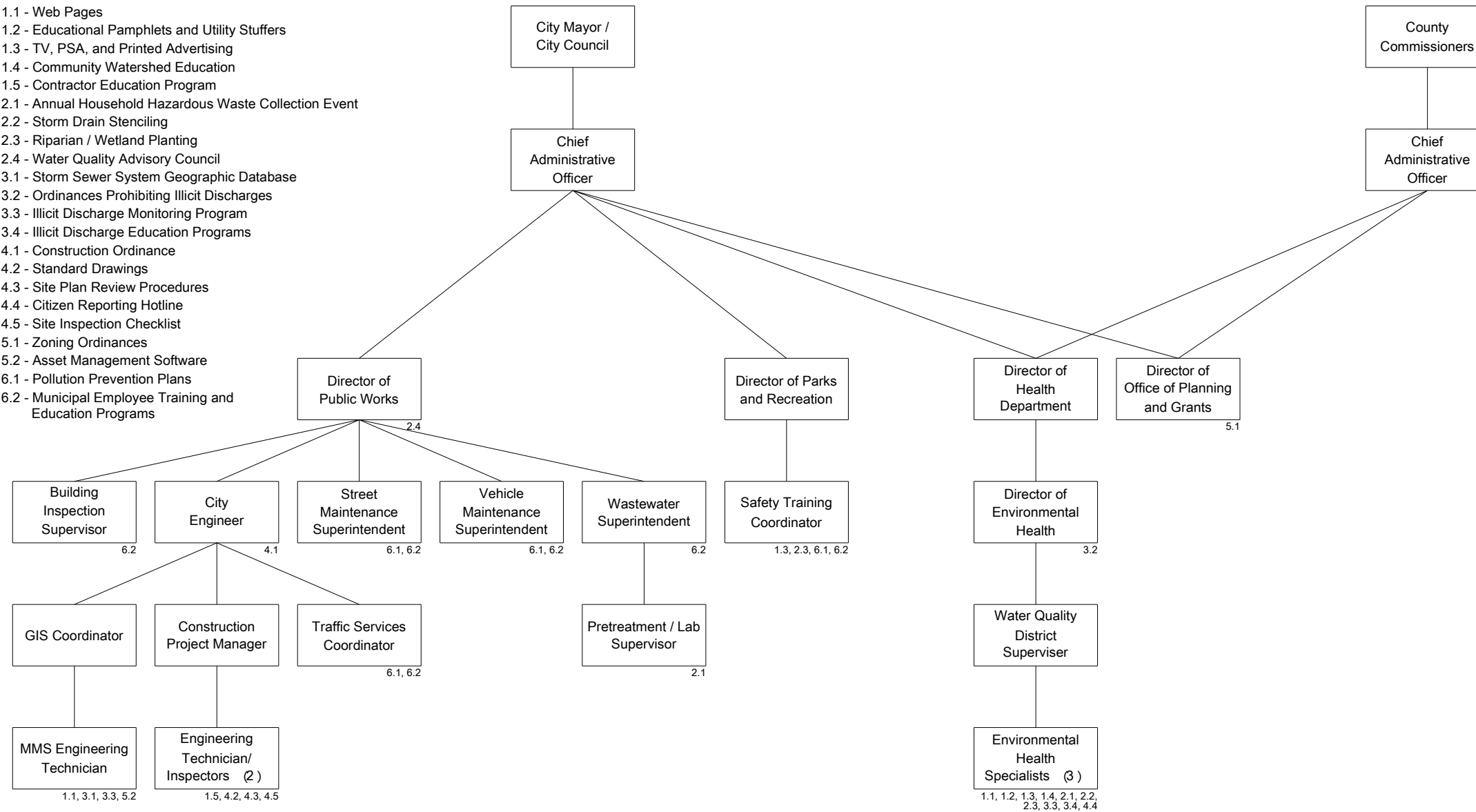
Water Body	Pollutant	Probable Source(s)	Associated Uses	TMDL	BMPs
Rattlesnake Creek	Other flow regime alterations	Dam Construction Water Diversions	Cold Water Fishery	No	5.1

Information based on 2010 303(d) List from Montana Department of Environmental Quality Clean Water Act Information Center.

City Storm Water Program Staff Organizational Chart and Responsibilities

City of Missoula Best Management Practices

- 1.1 - Web Pages
- 1.2 - Educational Pamphlets and Utility Staffers
- 1.3 - TV, PSA, and Printed Advertising
- 1.4 - Community Watershed Education
- 1.5 - Contractor Education Program
- 2.1 - Annual Household Hazardous Waste Collection Event
- 2.2 - Storm Drain Stenciling
- 2.3 - Riparian / Wetland Planting
- 2.4 - Water Quality Advisory Council
- 3.1 - Storm Sewer System Geographic Database
- 3.2 - Ordinances Prohibiting Illicit Discharges
- 3.3 - Illicit Discharge Monitoring Program
- 3.4 - Illicit Discharge Education Programs
- 4.1 - Construction Ordinance
- 4.2 - Standard Drawings
- 4.3 - Site Plan Review Procedures
- 4.4 - Citizen Reporting Hotline
- 4.5 - Site Inspection Checklist
- 5.1 - Zoning Ordinances
- 5.2 - Asset Management Software
- 6.1 - Pollution Prevention Plans
- 6.2 - Municipal Employee Training and Education Programs



MCM I – Public Education and Outreach on Storm Water Impacts

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measurable goals for the SWMP was selected.

Part II.B.1.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:

Part II.B.1.b.i. – Identify how the permittee plans to inform individuals and households about the steps they can take to reduce storm water pollution.

Part II.B.1.b.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).

Part II.B.1.b.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.

Part II.B.1.b.iv. – Identify the target pollutant sources the public education program is designed to address.

Part II.B.1.b.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.

Part II.B.1.b.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 in this program.

Part II.B.1.b.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.

Part II.B.3.b.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.

Part III.A.1. – 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.

Common household activities such as car washing, lawn care and automobile maintenance affect water quality through non-point source water pollution. Non-point source pollution is the largest contributor to water quality degradation in the United States. By educating citizens about how these activities affect water quality, aquatic life, and recreational opportunities, and identifying ways citizens can reduce their impact, the City of Missoula hopes to decrease impacts to water quality associated with storm water in the Missoula valley. The public education and outreach program targets three main audiences: the general public, contractors, and municipal employees. Each group has specific activities that have different contributions to storm water quality degradation. Primary pollutants of concern which the general public may reduce are nitrogen, phosphorus, and organic enrichment. These pollutants can largely be attributed to septic systems, lawn care, and pet waste. Contractor education, in conjunction with both construction programs, will target sediment and other pollutants associated with construction activity. Finally, in conjunction with the Pollution Prevention/Good Housekeeping for Municipal Operations Program,

municipal employees are educated about pollutants common to their everyday operations. The following items target non-point source education for the general public. Web pages, educational pamphlets, utility stuffers, TV, Public Service Announcements (PSA), and printed advertising are used to educate the general public about non-point source pollution. Contractors receive information about storm water pollution prevention through the contractor education program, and municipal employees receive training in coordination with Section Six of this Program.

Web Pages (BMP 1.1)

The City's website provides information about common impacts people have to storm water quality and offers ways residents can decrease their contributions. The City's webpage also has a link to the Missoula Valley Water Quality District's webpage which has more information about alternatives to common household hazardous substances. In addition, the Water Quality District's website includes information about the impacts of excess nutrients on surface water and offers ways the public can reduce its impact. The web pages also list the Water Quality hotline number and describe how to report suspected cases of water pollution.

This BMP was chosen because the web is becoming an increasingly more popular form of communication. It has the potential to reach thousands of people using a minimum amount of personnel time and money. Between the two web pages and various links, the City plans to reach approximately 3,000 households annually.

STATUS: Fully Implemented

Educational Pamphlets and Utility Stuffers (BMP 1.2)

Missoula Valley Water Quality District prints and distributes brochures to participants in the Annual Household Hazardous Waste Collection Event. Members of the public received the following brochures: Alternatives to Household Toxics, Managing Leftover Paint, and A Residential Guide to the Missoula Valley Aquifer. This material includes information on recycling and proper disposal of household toxics. It also informs readers of the hazards associated with improper waste disposal.

Buying less toxic alternatives and disposing of potential pollutants in the least harmful ways is a proactive way to prevent storm water pollution. Approximately five hundred sets of brochures will be distributed annually.

STATUS: Fully Implemented

TV, PSA, and Printed Advertising (BMP 1.3)

TV, PSA, and printed advertising are also being used to inform individuals and households about the steps they can take to reduce storm water pollution. Television advertising is primarily centered on the Annual Household Hazardous Waste Collection. These ads focus on non-point source pollution and effects on surface water quality with regard to leaking vehicles and over-application of lawn chemicals. During the weeks preceding Household Hazardous Waste Days, the ads focus on the importance of proper waste disposal while advertising the collection event. One ad portrays various residents using a storm drain for disposal of paints, antifreeze and lawn clippings and explains that these contaminants find their way into surface water and drinking water supplies. Another ad shows a man fertilizing a lake and reminds watchers that too much fertilizer or fertilizer applied at the wrong time can end up in our water

bodies. Other public education advertising periodically conducted by the Water Quality District targets riparian habitat protection.

Periodically, PSAs are placed with local radio stations. The Water Quality District also runs ads during Hazardous Waste Days over local radio stations and in local newspapers to publicize the collection event.

The Parks & Recreation Department frequently publishes PSAs to all City employees, the *Missoulian*, the *Independent* and other media sources. These PSAs announce projects being done within City limits such as tree work, plantings, park restrictions/closures, construction projects, detours, dog regulations, trail work, wildlife habitat notices, riparian habitat closures/re-vegetation projects, public education events and programs sponsored by the department. Through these PSAs, the public receives the knowledge they need to respect and help the department to maintain our parks and open spaces, and keep them in good condition.

Average citizens get the bulk of their environmental messages from television, radio, and other traditional venues. The Water Quality District targets the general public and their actions that most commonly contribute to water pollution. The success of this BMP will be measured by the number of ads placed.

STATUS: Fully Implemented

Community Watershed Education (BMP 1.4)

The MVWQD supports the Annual Watershed Festival organized by The Montana Natural History Center. Through this program, approximately 600 sixth-graders learn about conditions within our watershed and factors that affect water quality. They discuss the different types of pollutants that make up non-point source pollution and the cumulative impacts of residents' activities. This is done through a combination of classroom visits and time spent at the various stations at the festival.

Students collect water quality and quantity data from stream reaches within the Clark Fork River Basin. Water Quality District staff often present the Enviroscope Watershed Model, which explains point and non-point source pollution and their effects on surface water quality. Students also learn how Best Management Practices can treat storm water runoff and help protect surface water.

The Water Quality District and City of Missoula Wastewater Treatment Plant provide financial support to the Watershed Education Network to provide classroom and field education to students throughout the Clark Fork Watershed about surface and groundwater issues. Students learn how to assess surface water quality through macro-invertebrate identification and stream assessments of physical and chemical conditions. This work demonstrates the connection of manmade conditions in watersheds directly to water quality. Students get the opportunity to monitor streams with different levels of impact and are taught methods of determining a water body's health through correlating factors such as dissolved oxygen, ratios of pollutant-tolerant invertebrates, temperature, etc.

This BMP was chosen because children that learn about environmental issues are more likely to form good habits that take into account storm water quality and continue them for their entire lives. In addition, students often tell their parents what they learn in school, making it an effective way to pass environmental awareness to the entire community. The success of this BMP will be measured by the number of students educated.

The Water Quality District also promotes a Riparian Area Awareness campaign. Fliers have been distributed throughout the county focusing on owners of property adjacent to rivers. Print, television and radio ads have been placed. One major contribution of healthy riparian areas is their ability to treat and

reduce the effects of contaminated surface runoff. Riparian vegetation also stabilizes soil and helps prevent erosion. Several of these ads focus on the stabilization and filtering capabilities of riparian areas. A television ad was developed that depicts a healthy riparian area contrasting with a raw, eroding bank. The ad highlights the benefits provided by healthy native riparian areas and the importance of leaving these areas intact.

STATUS: Fully Implemented

Contractor Education Program (BMP 1.5)

The City of Missoula's Engineering Department works closely with the design community to develop rules and methods that work effectively and efficiently. Contractors receive information regarding runoff control, proper storm drain inlet protection, and management of potential pollutants. A subdivision toolbox (which actually applies to all construction projects, not just subdivisions) was created in 2007. This portion of the city web page contains links to related information such as applicable codes, checklists, standard drawings, as-built drawings, and storm and sanitary infrastructure maps. Requirements for the acquisition of City SWPPP permit are included in this information and design professionals are required to include completed checklists with their design submittals.

Since excavation contractors are often the first ones on a job site, and often require a SWPPP permit, a packet of information has been assembled for them. This packet includes information about permits, inspections, and ordinances. A copy of the Grading, Drainage, Erosion Control, and Storm Water Pollution Prevention Plan is included along with Montana Department of Environmental Quality's "Storm Water Requirements for Construction Activity" brochure.

In addition to these items, administrative rules clarifying ordinances and gathering related information into one place have been created to inform contractors of all requirements on a particular subject (Materials Storage on Public Rights-of-Way along with Construction Site Cleanup and Right-of-Way Protection are two examples). Standard drawings have also been created to give contractors some guidance in areas such as inlet protection and erosion control on construction sites.

All of these methods have been used successfully by the City of Missoula to direct contractor efforts in the past. With the advent of the MS4 program, City staff has added to these mediums to clarify and update requirements related to storm water pollution prevention. The success of this BMP will be measured by the items created or updated annually.

STATUS: Fully Implemented

Municipal Employee Training and Education Programs (BMP 6.2)

Municipal employees receive annual training related to proper maintenance and disposal techniques with respect to storm water pollution prevention. Field employees also receive training on how to identify illicit discharge and what to do about it. The Municipal Employee Training Program will be coordinated with Minimum Control Measure Six – Pollution Prevention / Good Housekeeping for Municipal Operations. See Section VI of this Program for more information about this BMP.

STATUS: Partially Implemented

IMPLEMENTATION SCHEDULE: June 30, 2010 – meet with division managers to inform them of new requirements. March 31, 2011 – review divisions' existing education programs with managers and determine ways to come into compliance with new regulations of General Permit regarding the Illicit

Discharge Detection and Elimination and Construction Site Storm Water Runoff Control Programs.
October 31, 2011 – divisions' programs and documentation updated. December 31, 2011 – full
implementation.

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the public education and outreach program. Responsibilities for individual BMPs are listed on the following page. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

MCM I. Public Education and Outreach on Storm Water Impacts

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
1.1 Web Pages	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p>	Reach approximately 1,000 households annually through a combination of the City's and Missoula Valley Water Quality District's web pages.	MMS Engineering Technician
1.2 Educational Pamphlets and Utility Stuffers	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p>	Distribute approximately 500 sets of brochures annually.	Environmental Health Specialist
1.3 TV, PSA, and Printed Advertising	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p>	<p>Place approximately 160 television spots during Earth Week.</p> <p>Place approximately 225 radio ads during Hazardous Waste Days.</p> <p>Distribute fliers and place newspaper ads for promotion of the riparian awareness campaign.</p>	Environmental Health Specialist
1.4 Community Watershed Education	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p>	Educate approximately 600 sixth graders annually.	Environmental Health Specialist
1.5 Contractor Education Program	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p>	Annually update subdivision toolbox with information received from the construction industry as well as inspectors.	Engineering Technician/Inspector

MCM II – Public Involvement/Participation Program

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measurable goals for the SWMP was selected.

Part II.B.2.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:

Part II.B.2.b.i. – Identify how the public was involved in the development and submittal of the permit application and the SWMP

Part II.B.2.b.ii. – Identify how plans to actively involve the public in the development and implementation of the SWMP.

Part II.B.2.b.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.

Part II.B.2.b.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

Part II.B.2.b.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.

Part II.B.2.b.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.

Part III.A.1. – 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.

Volunteer groups are essential to a successful non-point source management program as the sources of issues are often the very things that the general population can affect. Volunteers provide much needed assistance with labor and become more educated and engaged. The City of Missoula uses volunteers to help with three water pollution-related projects: the Annual Household Hazardous Waste Collection Event, Storm Drain Stenciling, and Riparian/Wetland Plantings.

Annual Household Hazardous Waste Collection Event (BMP 2.1)

Each year since 1993 the Missoula Valley Water Quality District with the City of Missoula Wastewater Division has conducted a household hazardous waste collection event. Unwanted hazardous and toxic materials are accepted from Missoula County residents for no charge, including oil-based paints and stains, paint thinner, degreasers, gasoline, other flammable liquids, aerosol paints, fertilizer, and non-alkaline household batteries.

In 2004, a mercury thermometer collection and exchange campaign was started. Each household that brings one or more mercury thermometers to the Household Hazardous Waste Collection Day is given a coupon for one free digital thermometer to be picked up at a participating pharmacy.

The Water Quality District coordinates volunteer efforts for the annual Household Hazardous Waste Collection. Volunteers are recruited from the University of Montana, local environmental consultants, interested citizens, and other local businesses. The success of this BMP will be measured by how often events are held.

STATUS: Fully Implemented

Storm Drain Stenciling (BMP 2.2)

Periodically, storm drains have been stenciled or re-stenciled to remind residents never to dispose of waste through storm drains. Past events have taken place at the University of Montana, downtown Missoula and in Lolo. This work has been done by university students, eagle scouts and community members. Currently, no volunteer groups are stenciling storm drains. City personnel will continue to seek volunteers for this project, or this BMP will be replaced with a similar BMP. The success of this BMP will be measured by how many volunteers are involved and how many storm drains are stenciled annually.

STATUS: Fully Implemented

Riparian/Wetland Plantings (BMP 2.3)

Working with local homeowners' associations, service groups, students, and community volunteers, the Water Quality District and the Parks and Recreation Department's Partners in Parks Volunteer Program, Conservation Lands Management Division, Urban Forestry Division, and annual sponsorship of National Public Lands Day has been conducting riparian and wetland planting events, re-vegetation and overall maintenance projects throughout the growing season since 2005. These projects and events take place in various locations throughout the roughly 350 acres of riparian habitat managed by the Missoula Conservation Lands program. Projects range from re-vegetation, rock dam removal, trash removal, tree planting and seeding of riparian and wetland areas in need. Native plants are obtained from the Montana Department of Natural Resources and Conservation and a portion are grown from seed in the Parks and Recreation greenhouse specifically for these types of projects. These plants help reduce runoff, stabilize channel banks, enhance and rejuvenate wildlife habitat, cleanse lands of waste and illicit discharges, create new riparian habitats, preserve existing wetlands, help keep water temperatures cool in summer, and educate the community about our precious natural resources and how to keep them thriving. Involving citizens in community work helps to build awareness about the Missoula Valley Habitat, it also builds a strong sense of pride in people who are currently or will become environmental stewards of our region.

The success of this BMP will be measured by how many volunteers are involved and how many sites are re-vegetated or maintained annually.

STATUS: Fully Implemented

Water Quality Advisory Council (BMP 2.4)

The Public Works Department makes an annual presentation to the Missoula County Water Quality Advisory Council and solicits comments. The Water Quality Advisory Council is comprised of 20 volunteers appointed by the Chair of the City-County Board of Health, representing technical advisors, large water users, conservation groups, and interested citizens.

The success of this BMP will be measured by how many presentations are given annually.

STATUS: Partially Implemented

SCHEDULE FOR IMPLEMENTATION: In February or March, a presentation will be made to the board concerning the Storm Water Management Program. In the following years, at least one meeting annually will be devoted to storm water issues.

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the storm water public involvement/participation program. Responsibilities for individual BMPs are listed on the following page. The Health Department will serve as a resource to assist the Public Works Department in this effort. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

MCM II. Public Involvement/Participation

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
2.1 Annual Household Hazardous Waste Collection Event	Part II.B.2.a. – The permittee shall at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.	The City will hold one Household Hazardous Waste Collection Event annually.	Environmental Health Specialist
2.2 Storm Drain Stenciling	Part II.B.2.a. – The permittee shall at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.	Involve 20 volunteers to stencil storm drains annually.	Environmental Health Specialist
2.3 Riparian / Wetland Planting	Part II.B.2.a. – The permittee shall at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.	Involve 40 volunteers to re-vegetate or maintain sites annually.	Environmental Health Specialist
2.4 Water Quality Advisory Council	Part II.B.2.a. – The permittee shall at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.	Make a presentation related to storm water at one meeting annually.	Director of Public Works

MCM III – Illicit Discharge Detection and Elimination (IDDE) Program

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measureable goals for the SWMP was selected.

Part II.B.3.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, measureable goals, and responsible persons/positions for this program. This documentation must include the following information, at a minimum:

Part II.B.3.b.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.

Part II.B.3.b.ii. – Identify the mechanism (ordinance or other regulatory mechanism) used to effectively prohibit illicit discharge into the Small MS4 and why that mechanism was chosen.

Part II.B.3.b.iii. – Identify the appropriate enforcement procedures and actions which are used to ensure the illicit discharge ordinance (or other regulatory mechanism) is implemented.

Part II.B.3.b.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.*

Part II.B.3.b.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 employees on the illicit discharge program.

Part II.B.3.b.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

Part II.B.3.b.vii. – Identify how the success of this minimum control measure will be evaluated, including how the measureable goals for each of the BMPs were selected.

Part III.A.1. – 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.

Illicit discharge is defined as any discharge not comprised entirely of rainfall or snowmelt. In order to effectively control illicit discharges to the storm sewer system, the City of Missoula has created an Illicit Discharge Detection and Elimination Program consisting of the following components: a storm sewer system geographic database, ordinances prohibiting illicit discharges, an illicit discharge monitoring

program, and an education program. Each of these pieces serves a critical function in reducing illicit discharge to surface water. Particular attention will be paid to the pollutants of concern, but all potential pollutants will be targeted by this program, including cross connection of sanitary sewer, perchloroethylene, vehicle fluids, deicer, and regulated substances as defined by the Superfund Amendments and Reauthorization Act.

Storm Sewer System Geographic Database (BMP 3.1)

The geographic database of storm system components allows the creation of maps in order to better visualize possible sources of contamination or detail the area of a water body that an accidental spill may affect. A City map of storm drainage piping, sumps, inlets, outfalls, etc. has been placed on the City's website in order to educate citizens about the affects of illegal dumping by illustrating the direct connection between inlets and outfalls located at rivers and streams. In addition, the City has created maintenance schedules and associated maps for the storm water components so they may be properly and regularly cleaned and maintained.

The City's storm system geographic database was developed using a georeferenced aerial photo taken in 2006 as the basemap. GIS data for closed conduits, open channels, manholes, inlets, catch basins, outfalls, drywells, separators, etc. was gathered from engineers' project drawings, historic maps, an inventory study completed in 1966, and field verification. During the summers of 2008 and 2009, all permitted river and stream banks within the Urbanized Area and Missoula City Limits were walked in order to locate outfalls. New outfalls were added to the storm water GIS database, existing outfalls were confirmed, and outfalls which were not found were removed from the GIS data. Other storm water components are updated when field personnel inspect or maintain them. Field personnel report map discrepancies to GIS section staff so that corrections to the data can be made.

Realizing the importance of keeping the storm sewer database current, the City of Missoula created an administrative rule which requires storm water as-built drawings to be submitted prior to project close-out for any project constructed within the City Limits. Upon receipt of the as-built drawings, the data is updated to reflect the changes made during the construction project.

In addition to storm infrastructure information, the database also contains information relevant to the drainage area characterization. This data includes such things as land use, zoning, MPDES storm water permittees, age of development, historical industrial uses, known locations of illicit discharges, pollution complaints, etc. This information helps characterize the data collected and understand the effects of drainage area characteristics on storm water quality in Missoula's particular environment.

A geographic storm system database was selected over a traditional paper map because of its flexibility and usefulness. Paper maps are almost immediately out of date and updates are wasteful, costly and time-consuming to distribute. Electronic data can be used to create maps quickly and efficiently, with electronic copies being easy and cheap to distribute to multiple users. Other advantages that a GIS has over paper maps are the abilities to perform modeling and decision-making tasks. The success of this BMP will be measured by how quickly the data is updated. This measureable goal was chosen because the usefulness of the map is dependent on how accurate it is.

STATUS: Fully Implemented

Ordinances Prohibiting Illicit Discharges (BMP 3.2)

In 2000, the Missoula City Council and the Board of County Commissioners amended the Missoula Aquifer Protection Ordinance, originally adopted in 1993, which is intended to protect the public health, safety, and general welfare of those who depend upon the Missoula Valley Aquifer and surface waters in the Missoula Valley for drinking water, recreation, and other beneficial uses. The provisions of the ordinance were deemed to be a health ordinance and as such are to be applied to an area within five miles outside of the city limits.

The ordinance establishes prohibitions and/or restrictions on regulated substances and activities which have the potential of causing surface or groundwater contamination. Facilities that store Regulated Substances above the specific quantities are required to obtain a permit from the Water Quality District. This requires facilities to report chemical quantities and steps taken to reduce the likelihood of spills to the District every two years. Regulated Substances are those found in 40 CFR Part 261; regulated substances listed in Superfund Amendments and Reauthorization Act (SARA) Title III; any petroleum product; any hazardous waste; deicers; or any other substances that may threaten contamination of surface water or the Missoula Valley Aquifer, excluding substances used for personal household use. Further, it is unlawful for any person to "cause contamination or to place, cause to be placed, or allow to remain in place any substance in a location where it is likely to cause contamination".

The Missoula Valley Water Quality Ordinance also gives Water Quality District staff the authority to perform inspections and enforce the provisions of the ordinance. A Notice of Violation may be written, after which corrective action must be taken within five working days, unless the alleged violator requests an administrative review. Any person who violates any of the provisions of the ordinance is guilty of a misdemeanor and can be fined up to five hundred dollars and/or imprisoned in the county jail for up to sixty days.

This ordinance was chosen because it has been successfully used for years by the Water Quality District to protect Missoula's groundwater and surface water quality. Water quality complaints are registered with the District and staff follow up on each complaint that is received. The success of this BMP is measured by the percentage of complaints to which the District responds. This measurable goal is response to 100% of complaints and full compliance with each violation notice that is issued.

In addition to the Missoula Valley Water Quality Ordinance, Title 13.04 of the Missoula Municipal Code, entitled "Sewer Regulations", makes it "unlawful for any person to discharge or cause to be discharged into the storm sewage system any waste other than surface storm water drainage or clear water except when other connections are specifically allowed by the Director of Public Works." This allows for connects listed in parts II.B.3.a.vi and II.B.3.a.vii to be allowed if they are not found to be significant contributors of pollutants to the Small MS4.

The Montana Water Quality Act, Missoula City-County Health Code, Missoula Municipal Code, and Uniform Plumbing Code all prohibit on-site sewage disposal systems that flow into the storm drainage system. The majority of Missoula's storm water is handled by sumps, rather than piped systems. In nearly every location that there is storm sewer in Missoula, there is also sanitary sewer. The City of Missoula maintains connection records on buildings and if records are missing, a dye test is required to verify connection to the sanitary sewer before a building can legally be sold.

STATUS: Fully Implemented

Illicit Discharge Monitoring Program (BMP 3.3)

The City of Missoula's Illicit Discharge Monitoring Program was developed using the Center for Watershed Protection's Illicit Discharge Detection and Elimination manual for guidance. The Program includes a dry weather screening program; a citizen reporting hotline, where citizens may report suspected illegal dumping; and hazardous spill response.

Dry-weather screening is conducted during July when surface water levels and rainfall rates are low. During the first permit cycle, all rivers and streams were walked and existing outfall inventories verified or edited. During the first cycle, priority was given to older areas of town where illicit discharge was more likely to be found. During subsequent permit cycles, 20% of outfalls will be inspected annually, and outfalls having dry weather flows sampled. Samples are tested for total suspended solids, chemical oxygen demand, total phosphorus, total nitrogen, pH, ammonia, E. Coli, total coliform, chloride, surfactants, and potassium. Many areas within Missoula have high ground water or seasonal springs which integrate with the MS4. This testing helps to differentiate between ground water and illicit discharge.

Using the Center for Watershed Protection's Indicator Parameters Used to Detect Illicit Discharges table in the Illicit Discharge Detection and Elimination manual, the list of possible contaminants can be narrowed. Once a problem area is located, the upstream system is evaluated and various areas chosen to perform additional sampling. These locations are chosen so as to sample each branch of the system and various places along stretches with no branches in order to isolate the area of discharge. After the area has been narrowed, if the illicit discharge cannot easily be detected, a video inspection is performed in the pipe. Once the source is identified, the process of removing the discharge will begin using the procedures outlined in Title 13.26 - Missoula Valley Water Quality Ordinance. All actions taken during the process will be documented in the asset management software.

The citizen reporting hotline is coordinated with the Construction Site Storm Water Runoff Control program. Potential storm water pollution can be reported to this number 24 hours a day. Office hours are 8:00 AM to 5:00 PM Monday through Friday and messages can be left after hours. The messages are checked daily. Calls can be made anonymously. The hotline number can be found on the City's webpage, Missoula Valley Water Quality District's webpage, and Missoula Valley Water Quality District's education publications. See Section IV of this Program for more information.

Hazardous spill response is accomplished by Water Quality District staff along with the City of Missoula Fire Department. Both agencies are trained in proper hazardous spill mitigation techniques.

STATUS: Partially Implemented

IMPLEMENTATION SCHEDULE: June 30, 2010 – complete draft document for procedures for screening outfalls. Use draft document during 2010 dry weather screening and make changes as necessary. Add procedures for tracing the source of illicit discharge, removing the source of illicit discharge, and program evaluation and assessment. June 30, 2011 – complete final document for procedures for screening outfalls based on changes made during previous season and review comments. December 31, 2011 – full implementation.

Illicit Discharge Education Programs (BMP 3.4)

The Missoula Valley Water Quality District administers a permitting program for facilities that store regulated substances above certain threshold quantities listed in the Missoula Valley Water Quality

Ordinance. Water Quality District staff performs periodic inspections to ensure proper materials handling. When deficiencies are found, the inspector uses the opportunity to educate staff on proper procedures.

Restaurants and food service businesses located within the Missoula sanitary sewer service area are required to discharge wastewater to grease collection devices. Collection device locations are tracked in the City's asset maintenance software and an inspector makes regular visits to agencies with collection devices. Inspections are performed and the visit is used to educate users about the importance of the device for preventing sanitary sewer overflows and storm sewer contamination. The Health Department plans to conduct an education program for downtown businesses, including restaurants and bars, which store solid wastes and may conduct activities such as cleaning in alleys that drain to the City storm water system. This educational program would inform businesses of the connection of storm drains to the river, and potential alternatives to activities that may cause pollution.

In addition to these activities, area businesses and the general public are educated via the Water Quality District's educational pamphlets, utility stuffers, TV advertising, PSAs, and printed advertising. The City's and Water Quality District's web pages also serve as sources of education. This part of the Program is coordinated with Minimum Control Measure I – Public Education and Outreach on Storm Water Impacts. See Section I of this Program for more information on this BMP.

This BMP was chosen because targeted education is an important aspect of identifying behaviors that have a direct impact on storm water and subsequent surface and ground water quality. Citizens must be informed that storm drains are not simply a conduit to sanitary sewer where waste is adequately sanitized before discharge. The success of this BMP will be measured by the number of educational activities that take place as well as the number of people reached.

STATUS: Fully Implemented

Municipal Employee Training and Education Programs (BMP 6.2)

Informing public employees of hazards associated with illegal discharges and improper disposal of waste will be accomplished in conjunction with the Pollution Prevention and Good Housekeeping for Municipal Operations program along with the Public Education and Outreach on Storm Water Impacts program. At least once a year, field employees in Parks and Recreation and Public Works receive training geared toward their respective maintenance responsibilities and the City's required good housekeeping techniques. In addition, the training discusses the importance of proper handling, storage, and disposal of potential contaminants. Employees are educated about various forms of illicit discharge and asked to look for them during the course of their work days. This part of the program is coordinated with Minimum Control Measure Six – Pollution Prevention / Good Housekeeping for Municipal Operations. See Section VI of this Program for more information on this BMP.

STATUS: Partially Implemented

IMPLEMENTATION SCHEDULE: June 30, 2010 – meet with division managers to inform them of new requirements. March 31, 2011 – review divisions' existing education programs with managers and determine ways to come into compliance with new regulations of General Permit regarding the IDDE and Construction Programs. October 31, 2011 – divisions' programs and documentation updated. December 31, 2011 – full implementation.

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the illicit discharge detection and elimination program. Responsibilities for individual BMPs are listed on the

following page. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

MCM III. Illicit Discharge Detection and Elimination (IDDE)			
BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
3.1 Storm Sewer System Geographic Database	Part II.B.3.a.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;	Data will be updated when construction as-built drawings are received or field staff identifies corrections that need to be made.	MMS Engineering Technician
	Part II.B.3.a.ii. – Develop, and keep updated a storm sewer system map, showing the location and number of outfalls (as defined in ARM 17.30.1102(14) and Part VI. of this General Permit), and the names and locations of all surface waters that receive discharges from those outfalls. Development of this map to accommodate the provisions of a complete IDDE program 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.;		
3.2 Ordinances Prohibiting Illicit Discharges	Part II.B.3.a.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;	All illicit discharge will be removed using procedures described in Missoula City Ordinances.	Director of Environmental Health
	Part II.B.3.a.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.vi below) into the permitted storm sewer system and implement appropriate enforcement procedures and actions;		
	Part II.B.3.a.iv. - Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the permitted system;		
	Part II.B.3.a.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).		
	Part II.B.3.a.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 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.		
3.3 Illicit Discharge Monitoring Program	Part II.B.3.a.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;	Monitor twenty percent of outfalls annually during dry weather.	MMS Engineering Technician, Environmental Health Specialist
	Part II.B.3.a.iv. - Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the permitted system;		

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
3.4 Illicit Discharge Education Programs	Part II.B.3.a.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;	Number of educational activities offered and number of people reached.	Environmental Health Specialist
	Part II.B.3.a.a. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and		

MCM IV – Construction Site Storm Water Runoff Control Program

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measureable goals for the SWMP was selected.

Part II.B.4.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, measureable goals, and the responsible persons/positions for the program. This documentation must include the following information, at a minimum:

Part II.B.4.b.i. - Identify the mechanism (ordinance or other regulatory mechanism) which will be used to require erosion and sediment controls at the construction sites and why this mechanism was chosen.

Part II.B.4.b.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.

Part II.B.4.b.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.

Part II.B.4.b.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.

Part II.B.4.b.v. – Identify the procedures for receipt and consideration of information submitted by the public. Consider coordinating this requirement with the public education program.

Part II.B.4.b.vi. - Identify procedures for site inspection and enforcement of control measures, including how sites for inspection will be selected and prioritized.

Part II.B.4.b.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.

Part II.B.4.b.viii. – Identify how the success of this minimum control measure will be evaluated, including how the measureable goals for each of the BMPs were selected.

Part II.B.4.b.ix. – Identify measures to train pertinent municipal employees on the construction program.

Part II.B.5.b.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.

Part II.B.5.b.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.*

Part II.B.5.b.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.

Part II.B.5.b.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.

Part II.B.5.b.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.

Polluted storm water runoff from construction sites can enter storm drain systems and be discharged into local rivers and streams. Sediment is the main construction pollutant of concern in the Missoula Valley. Sedimentation/siltation is one pollutant for which the Bitterroot River is listed as impaired. Sediment in rivers reduces the amount of sunlight reaching aquatic plants, clogs fish gills, smothers aquatic habitat, covers riffles which oxygenate the water, impedes navigation and contributes to flooding by reducing the size of channels. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. In addition to sediment, construction sites can contribute solid and sanitary wastes, phosphorus, nitrogen, pesticides, oil and grease, concrete truck washout, construction chemicals, and construction debris to our local water bodies.

In order to reduce the discharge of these pollutants to our local rivers and streams, the City of Missoula has developed a Construction Site Storm Water Runoff Control Program. The Program consists of five parts: a construction storm water pollution prevention ordinance, construction site standard drawings, site plan review procedures, a dedicated water pollution complaint phone number, and a site inspection checklist.

Construction Ordinance (BMP 4.1)

On November 23, 2009, the City Council of Missoula unanimously passed Ordinance 3414, repealing Chapter 15.64 of the Missoula Municipal Code and establishing Chapter 15.65 entitled "Grading, Drainage, Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)". This newly adopted chapter establishes the requirement for acquiring Grading and Storm Water Pollution Prevention Plan Permits before commencing grading associated with a subdivision, project, building permit, or zoning compliance permit on public or private property. The purpose of the chapter is to provide minimum standards for site grading and the control of storm water runoff, both quantity and quality. It creates permitting, submittal and development design standards for erosion control and sediment control, preservation of natural drainage systems, flood mitigation, site grading, and protection of property. Requirements for multifamily, commercial, and industrial parcels to retain all storm water on site are addressed. This chapter also establishes a fee structure, penalties for commencing work without a permit, and penalties for violation of the code.

This ordinance was chosen because contractors were already familiar with Chapter 15.64 and were accustomed to acquiring Grading, Drainage, and Erosion Control Permits. By adding another similar permit to this chapter, contractors can easily assimilate this into their routines. Another convenience of this permit is that it uses the State SWPPP Permit, so contractors don't need to fill out multiple applications. One hundred percent of applications will be reviewed for compliance with City and State requirements.

STATUS: Partially Implemented

SCHEDULE FOR IMPLEMENTATION: March 31, 2011 – complete review of current ordinance for compliance with new General Permit conditions. September 30, 2011 – complete revisions to ordinance for referral to City Council. November 30, 2011 – passed City Council and received Mayor's signature. December 31, 2011 – full implementation.

Standard Drawings (BMP 4.2)

Seven construction site storm water pollution prevention standard drawings were created in 2005 and 2006. The drawings are required to be part of applicable projects constructed within City Limits by Section 15.65.130 of the Missoula Municipal Code. Drawings include Temporary Access to Construction Sites, Silt Fence Installation, Post-Paving Gravel Curb Intake Filter, Pre-Paving Gravel Intake Filter, Straw Bale Check Dams, and Sediment Control at Field Catch Basins. All projects within Missoula city limits disturbing an acre or more are required to have storm water pollution prevention measures.

The City and County have cooperatively developed standard drawings for post-construction structural BMPs which include means to retain storm water on site. Standard drawings include storage practices, filtration practices, and infiltration practices. Designers can use any of the standard drawings which meet the needs for the specified project, create their own BMPs, or use approved commercially available BMPs.

In 2006, the City began requiring special covers for drywells and storm manholes. Standard drawings detail the requirements which must be followed on all new construction projects. Covers must have a trout logo and contain the phrases "Dump No Waste" and "Drains to Streams". These new covers will serve as permanent reminders to citizens that only storm water should enter the storm drainage system.

STATUS: Fully Implemented

Site Plan Review Procedures (BMP 4.3)

The City of Missoula has created a "Subdivision Toolbox" for engineering consultants performing subdivision and other construction work. In 2007, City staff held a conference for all design professionals and the new toolbox was introduced. The toolbox is located on the City's website and has links to related information such as applicable codes, checklists, standard drawings, as-built drawings, and storm and sanitary sewer maps. Requirements for the acquisition of a City of Missoula SWPPP permit are included in this information and design professionals are required to include completed checklists with their design submittals. Filling out the checklists helps ensure that submittals are complete. Site plan reviewers use the completed checklists to review the plans and ensure that required elements are present. If designers omit any applicable SWPPP component, the plans can be amended or rejected. All site plans are reviewed for compliance with the Grading, Drainage, Erosion Control, and Storm Water Pollution Prevention Plan. Site plans and storm water controls for major projects, including City road construction projects, are also reviewed by Health Department, Water Quality District staff for potential storm water pollution issues.

STATUS: Partially Implemented

SCHEDULE FOR IMPLEMENTATION: June 30, 2011 – complete preliminary written procedures / checklist for site plan review. September 30, 2011 – complete administrative review of written procedures / checklist and make changes to document. December 31, 2011 – full implementation.

Citizen Reporting Hotline (BMP 4.4)

Two employees of the Water Quality District serve in an on-call position for the Environmental Health Division Hazardous Materials Response Program. An employee of the division is on-call at all times. When dispatched by 9-1-1, employees work to minimize the threat to the public and the environment that may be present. Vehicle accidents and hazardous material spills are managed to reduce the potential ground water, surface water, soil, and air contamination. Storm drains are of particular concern and every effort is made to prevent spills from reaching an inlet. If the spill does reach the storm drain, Fire Department, Health Department, and Hazardous Material Team Members are trained in the use of booms and are equipped with sorbent pads to capture as much material as possible.

This hotline has been in use for a number of years and is already printed on a number of brochures and appears on the City and the Water Quality District's website. The number and the associated investigation and tracking system have been effectively used to address citizens' concerns about illicit discharge. All complaints will be responded to and all illicit discharges will be removed.

STATUS: Fully Implemented

Site Inspection Checklist (BMP 4.5)

A checklist has been developed for use by inspectors when checking pollution prevention controls at construction sites. The format follows the state SWPPP which the City of Missoula requires for all construction projects of one acre or more. In addition to standard information being required, the inspector is prompted to evaluate each BMP type on the construction site. Weather conditions and the most recent weather event are also required to be recorded. Finally, the inspector must record if punitive action is being taken. Completed forms are filed in project files and can also be scanned and attached to the electronic permit for online viewing. The checklist is used to help ensure complete and consistent inspections. The inspection checklist will be used for all SWPPP site inspections.

STATUS: Fully Implemented

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the construction site storm water control program. Responsibilities for individual BMPs are listed on the following page. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

MCM IV. Construction Site Storm Water Runoff Control

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
4.1 Construction Ordinance	<p>Part II.B.4.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.</p> <p>Part II.B.4.a.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;</p> <p>Part II.B.4.a.ii. – Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;</p> <p>Part II.B.5.a.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 measureable precipitation. This process must be in place by January 1, 2012.</p>	One hundred percent compliance with construction ordinances.	City Engineer
4.2 Standard Drawings	<p>Part II.B.4.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.</p> <p>Part II.B.4.a.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;</p>	Use of standard drawings or equivalent on all construction projects reviewed by Engineering Division staff.	Engineering Technician/Inspector
4.3 Site Plan Review Procedures	<p>Part II.B.4.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.</p> <p>Part II.B.4.a.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;</p> <p>Part II.B.5.a.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</p>	Review all site plans within Missoula City Limits for compliance with SWPPP ordinance.	Engineering Technician/Inspector
4.4 Citizen Reporting Hotline	<p>Part II.B.4.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.</p> <p>Part II.B.5.a.v. – Procedures for receipt and consideration of information submitted by the public; and</p>	Response to one hundred percent of complaints and full compliance with each violation notice that is issued.	Environmental Health Specialist

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
4.5 Site Inspection Checklist	<p>Part II.B.4.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.</p> <p>Part II.B.4.a.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.</p>	Use of site inspection checklist for all SWPPP inspections.	Engineering Technician/Inspector

MCM V – Post-Construction Storm Water Management in New Development and Redevelopment Program

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measurable goals for the SWMP was selected.

Part II.B.5.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. The documentation must include the following information at a minimum:

Part II.B.5.b.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.

Part II.B.5.b.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, preventative maintenance, and spill prevention.*

Part II.B.5.b.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.

Part II.B.5.b.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.

Part II.B.5.b.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.

Part III.A.1. – 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.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e. g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to waterbodies during storms. Increased impervious surfaces (e. g., parking lots, driveways, and rooftops)

interrupt the natural cycle of gradual infiltration of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property. The City's zoning ordinances and asset management software are BMPs implemented to address these impacts.

Zoning Ordinances (BMP 5.1)

Various portions of Missoula's Zoning Ordinance address growth, and the protection of sensitive areas, riparian resources, and open space in order to provide watershed protection. Chapter 20.20 Open Space and Public Districts defines two types of open space which offer watershed protection. The ordinance defines uses and development options, and references other regulations that apply. Zoning district OP1 is primarily intended to preserve open space and sensitive natural resource areas, including environmentally sensitive and agricultural areas. Zoning district OP2 is primarily intended to preserve open space and sensitive natural resource areas, while also allowing very low-density residential use, ideally in the form of cluster development.

Chapter 20.25 Overlay Districts defines a Planned Unit Development Overlay which is intended to accommodate development that may be difficult if not impossible to carry out under otherwise applicable zoning district standards. One such example would be developments that offer enhanced protection of natural resources and sensitive environmental features, including streams, water bodies, floodplains, wetlands, steep slopes, woodlands, wildlife habitats, and native plant communities. The developer must provide a written explanation describing the community benefits of the proposed development and how the proposed development provides greater benefits to the City than would a development carried out in accordance with otherwise applicable zoning ordinance standards.

Chapter 20.50 Natural Resource Protection sets requirements for developments and disturbances on average slopes greater than fifteen percent and in areas of riparian resource. The purpose of this chapter, among other things, is to preserve drainage channels and streams, encourage innovative pollution prevention techniques in environmentally sensitive areas, and mitigate adverse impacts including erosion and the degradation of air and water quality. This chapter is part of the zoning compliance permit process and must be completed before a zoning compliance permit is issued.

Section 20.50.030: Riparian Resource Protection of the Missoula City Zoning Ordinance defines areas of riparian resource and restricts development within those areas. A map of known Missoula riparian areas is maintained in the Office of Planning and Grants, but additional areas may be determined by stipulations outlined in the ordinance. Construction is permitted in areas of riparian resource only when a detailed management plan provides for restoration and-or replacement of the riparian area so that there is no net loss of area of riparian resource. All development within the city limits of Missoula must comply with this ordinance and compliance is determined by the Director of the Office of Planning and Grants. The success of this BMP will be measured by how many plans are reviewed and percentage that comply with these regulations.

STATUS: Fully Implemented

Asset Management Software (BMP 5.2)

In conjunction with the storm sewer system geographic database, the long-term operation and maintenance of storm water BMPs will be ensured using the City's asset management software. BMPs are

entered into the systems upon receipt of as-built drawings. BMPs located on public property or within public rights-of-way are added to a regular City maintenance schedule. The success of this BMP will be measured by the number of public assets inspected or maintained annually.

STATUS: Fully Implemented

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the post-construction storm water program. Responsibilities for individual BMPs are listed on the following page. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

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

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
5.1 Zoning Ordinances	<p>Part II.B.5.a.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;</p> <p>Part II.B.5.a.ii. – Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community;</p> <p>Part II.B.5.a.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;</p> <p>Part II.B.5.a.iv. – Ensure adequate long-term operation and maintenance of BMPs;</p>	One hundred percent compliance with zoning ordinances for all new development.	Director of Office of Planning and Grants
5.2 Asset Management Software	<p>Part II.B.5.a.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;</p> <p>Part II.B.5.a.ii. – Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community;</p> <p>Part II.B.5.a.vi. – Develop and implement procedures for the Small MS4 permittee to perform site inspection and enforcement of post construction BMPs.</p> <p>Part II.B.5.a.iv. – Ensure adequate long-term operation and maintenance of BMPs;</p>	Storm water assets will be inspected on a regular schedule and maintained as needed.	MMS Engineering Technician

MCM VI – Pollution Prevention/Good Housekeeping for Municipal Operations Program

Regulatory Requirement(s):

Part II.A.2. – The permittee shall maintain documentation describing how and why each of the BMPs and measureable goals for the SWMP was selected.

Part II.B.3.b.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.

Part II.B.6.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, measureable goals, and responsible persons/positions for the program. This documentation must include the following information, at a minimum:

Part II.B.6.b.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.

Part II.B.6.b.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.

Part II.B.6.b.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.*

Part II.B.6.b.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.

Part II.B.6.b.v. – Identify how the success of this minimum control measure will be evaluated, including how the measureable goals for each of the BMPs were selected.

Part III.A.1. – 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.

Montana DEQ's 2010 303(d) list of impaired water bodies lists the Clark Fork River and Bitterroot River and attributes some of the pollutants to the MS4. Listed pollutants of concern attributed to the MS4 are: Chlorophyll-a, Nitrogen (Total), Organic Enrichment (Sewage), Biological Indicators, and Phosphorus (Total) for the Clark Fork River; Alteration in stream-side or littoral vegetative covers, Nitrogen/Nitrate, and Sedimentation/Siltation for the Bitterroot River. The City of Missoula addresses these pollutants in its Pollution Prevention/Good Housekeeping for Municipal Operations Program. Divisions/departments that are involved are: Parks & Recreation, Street Maintenance, Traffic Services, Vehicle Maintenance, Wastewater, and Engineering. The City of Missoula's Pollution Prevention and Good Housekeeping for Municipal Operations Program consists of two parts: Department/Division Pollution Prevention Plans and Department/Division Training and Education.

In addition to the City of Missoula's MS4 MPDES Permit, it also has a discharge permit for the municipally-owned waste water treatment plant. That permit number is MT0022594.

Pollution Prevention Plans (BMP 6.1)

Pollution Prevention Plans for municipal divisions are created on a division-by-division basis. Each division creates its own plan based on activities and pollutants common to that particular division. Input is gathered from both managers and field personnel within a department or division to determine the most appropriate and effective BMPs for each activity and/or pollutant. Pollution Prevention Plans are reviewed periodically to ensure they are up to date and contain the most effective BMPs. The success of this BMP will be measured by the number of plans reviewed each year.

STATUS: Fully Implemented

Municipal Employee Training and Education Programs (BMP 6.2)

Training and education of employees in Public Works and Parks and Recreation Departments is accomplished on a department-by-department or division-by-division basis. Each department/division creates its own training program which includes standard operating procedures that incorporate storm water BMPs for activities common to the individual department/division. Input is gathered from both managers and field personnel within each department/division to determine the most appropriate and effective BMPs for each activity and/or pollutant. At least once a year, field employees receive training geared toward their respective maintenance responsibilities and the City's required good housekeeping techniques. In addition, training discusses the importance of proper handling, storage, and disposal of potential contaminants. Employees are educated about various forms of illicit discharge and asked to look for them during the course of their work days.

Employees responsible for reviewing construction projects attend annual training in order to improve their skills, update their knowledge, and remain current on the latest technology.

The Water Quality District has a permitting program for certain municipal departments. Periodic inspections are made at these facilities to ensure proper materials handling. When deficiencies are found, the inspector uses the opportunity to educate staff on proper procedures.

STATUS: Partially Implemented

IMPLEMENTATION SCHEDULE: June 30, 2010 – meet with division managers to inform them of new requirements. March 31, 2011 – review divisions’ existing education programs with managers and determine ways to come into compliance with new regulations of General Permit regarding the IDDE and Construction Programs. October 31, 2011 – divisions’ programs and documentation updated. December 31, 2011 – full implementation.

Responsibility and Evaluation

The Director of Public Works is responsible for the overall management and implementation of the pollution prevention/good housekeeping program. Responsibilities for individual BMPs are listed on the following page. The success of this minimum control measure will be evaluated by internal review in annual reporting and feedback response from Montana Department of Environmental Quality.

MCM VI. Pollution Prevention/Good Housekeeping for Municipal Operations

BMP	Regulatory Requirements	Measurable Goal(s)	Responsible Position
6.1 Pollution Prevention Plans	<p>Part II.B.6.a.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</p> <p>Part II.B.6.a.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.</p>	Review pollution prevention plans once annually.	Street Maintenance Superintendent, Vehicle Maintenance Superintendent, Wastewater Superintendent, Traffic Services Coordinator, Safety Training Coordinator
6.2 Municipal Employee Training and Education Programs	<p>Part II.B.1.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.</p> <p>Part II.B.3.a.v. - Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and</p> <p>Part II.B.6.a.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</p> <p>Part II.B.6.a.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.</p>	Train field employees at least once annually on items related to storm water pollution prevention and illicit discharge detection and elimination.	Street Maintenance Superintendent, Vehicle Maintenance Superintendent, Wastewater Superintendent, Traffic Services Coordinator, Safety Training Coordinator