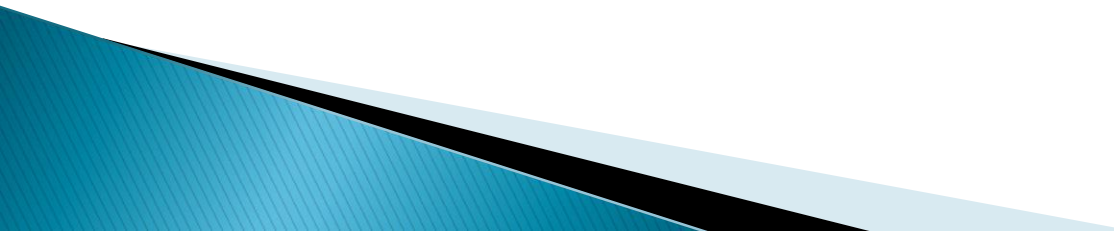


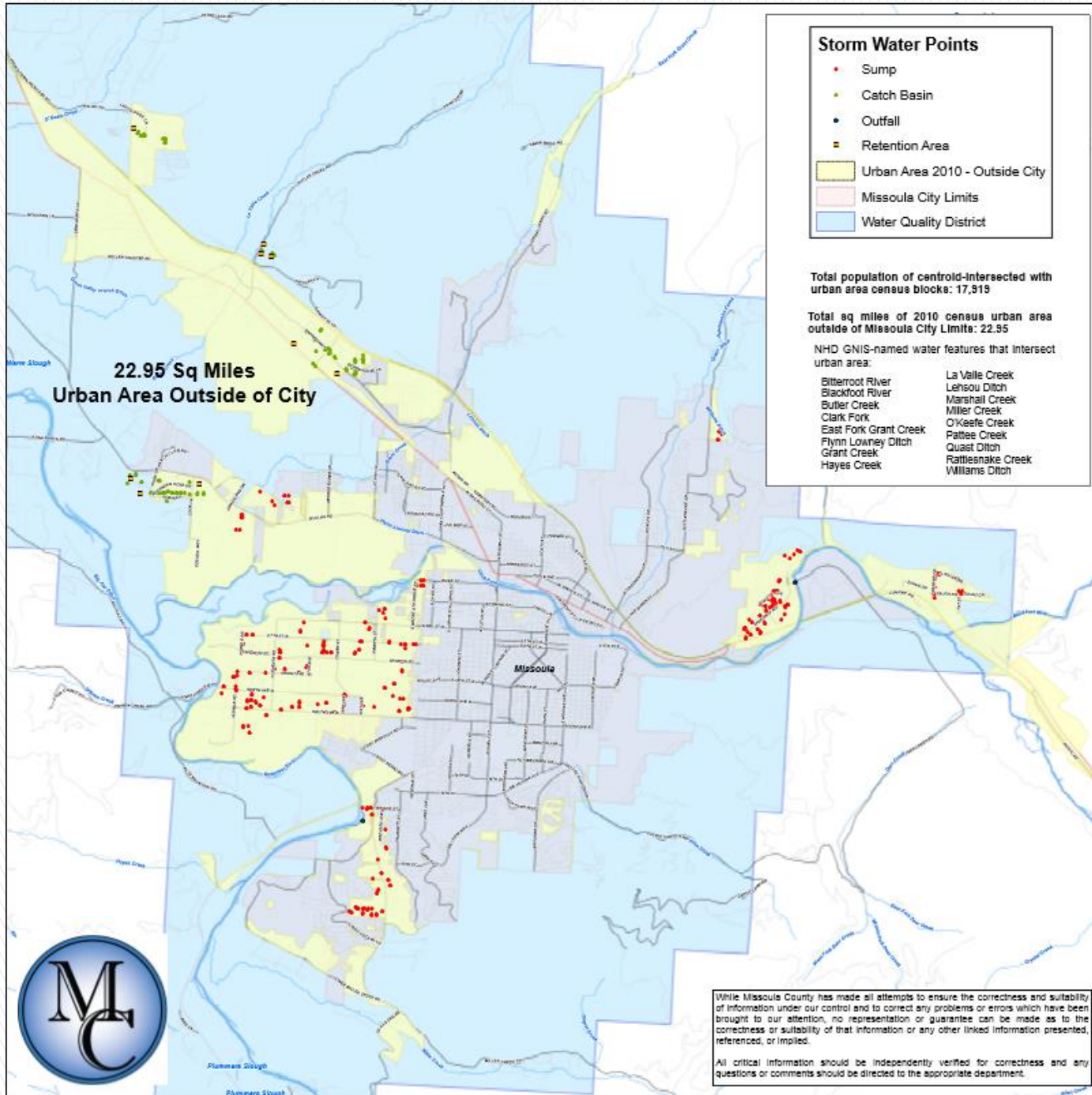
Missoula County MS4

Storm Water Management Program Implementation and Development



Outline

- ▶ Missoula County MS4
 - ▶ 2017 General Permit
 - ▶ Storm Water Management Program (SWMP)
 - ▶ Details on Year 3 (2019) report
- 



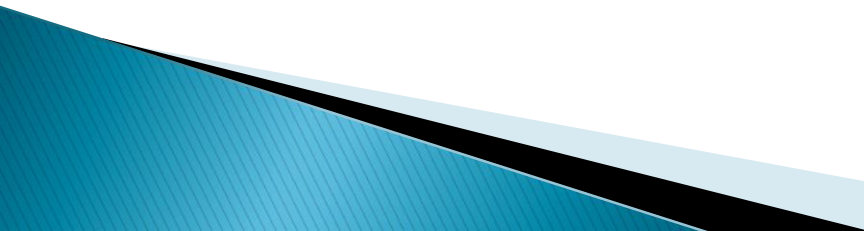
While Missoula County has made all attempts to ensure the correctness and suitability of information under our control and to correct any problems or errors which have been brought to our attention, no representation or guarantee can be made as to the correctness or suitability of that information or any other linked information presented, referenced, or implied.

All critical information should be independently verified for correctness and any questions or comments should be directed to the appropriate department.

Missoula County MS4

- ▶ 2010 & 2015 General Permit
 - Co-Permittee (w/ City of Missoula)
 - Limitations of Authority (County Enforcement)
 - No SWMP (like other counties)
- ▶ 2017 General Permit
 - Inter-local Agreement
 - Storm Water Management Team
 - SWMP
 - “To the extent allowable under states, or local law”

2017 General Permit

- ▶ Minimum Control Measures
 - I. Public Education and Outreach
 - II. Public Involvement and Participation
 - III. Illicit Discharge Detection and Elimination
 - IV. Construction Site Storm Water Management
 - V. Post-Construction Storm Water Management
 - VI. Pollution Prevention/Good Housekeeping
 - ▶ Training
 - ▶ Monitoring
 - ▶ Annual Reporting
- 

SWMP– Requirements

- ▶ Develop, Document, and Maintain
 - BMPs
 - Selected, designed, installed, implemented, inspected, and maintained (or replaced) in accordance with good engineering, hydrologic, and pollution control practices
 - Management Team
 - MVWQD, PW, CAPS, GIS, Legal, Parks and Trails, OEM, and Facilities

MCM I. Public Education and Outreach

Distribute Educational Materials and performing outreach to inform citizens about the impacts polluted storm water runoff discharges can have on water quality

- ▶ Website
 - Information on reporting
 - MS4 Documents
 - SWMP feedback
- ▶ Educational Pamphlets
 - Letters to target Audiences
 - Haz-Waste Facility
- ▶ Support to Watershed Education network
- ▶ Contractor Education Program

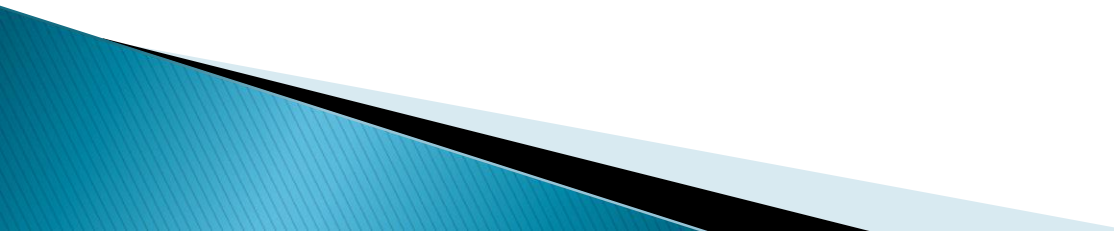
MCM II. Public Involvement and Participation

Providing opportunities for citizen participation in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representation on stormwater management panel.

- ▶ **Develop relationships/partnerships with existing stakeholders**
 - Water Quality Advisory Council
 - City of Missoula
 - University of Montana
 - MT Department of Environmental Quality
- ▶ **Publication of material and advertise stormwater webpage**
 - Transparency
 - Education
 - Results

MCM III. Illicit Discharge Detection and Elimination

Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste)

- ▶ Missoula Water Quality Ordinance
 - ▶ Occasional incidental non-storm water discharges
 - ▶ Storm Sewer System Map
 - ▶ Monitoring
 - ▶ Illicit Discharge Detection and Elimination
 - ▶ Enforcement Response Plans
- 

MCM IV. Construction Site Storm Water Management

Developing, implementing and enforcing an erosion and sediment control program for construction activities that disturb 1 or more acres of land (controls could include silt fences and Temporary stormwater detention ponds)

- ▶ Standard Drawings/Management Review Checklist (Section 9)
- ▶ Missoula County Subdivision Regulations (BMP 4.2)
- ▶ Inspection Frequency Protocol
- ▶ Enforcement Response Plan (End of 3rd Permit Year)

MCM V. Post-Construction Storm Water Management

Developing, implementing and enforcing a program to address discharges of post-construction stormwater runoff from new and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (ex. Wetlands) or the use of structural BMPs such as grassed swales or porous pavement.

- ▶ Plan review checklist ensures compliance with state and local post-construction requirements
- ▶ Asset Management & County Maintenance/Inspection

MCM VI. Pollution Prevention/Good Housekeeping

Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (ex. Regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

- ▶ County Employee Training and Education
 - General Storm Water Awareness Training
 - Development of SOPs
 - Pollution Prevention Plans

Training and SOPs – MCM VI

- ▶ 1st & 4th Permit Year: Education
 - Storm Water Awareness Training for appropriate permittee field staff and staff who work at permittee facilities
 - Inspectors and plan reviewers
 - Within 90 days of hire
- ▶ Standard Operating Procedures (SOPs)
 - 2nd Permit Year; $\frac{1}{4}$
 - 3rd Permit Year; $\frac{1}{2}$
 - 4th Permit Year $\frac{3}{4}$
 - 5th Permit Year; Complete

SOP trainings developed in 2nd permit year, conducted in 3rd permit year

Mapping

Edit MS4 Assets

Editor Layers

Storm Water Area

- Storm Water Area

Storm Water Point

- Catch Basin
- Detention Basin Dry
- Detention Basin Wet
- Discharge Chamber
- Discharge Structure
- Dry Well
- Other
- Outfall
- Retention Basin
- Scupper
- Storage Basin
- Storm Drain
- Sump

Storm Water Line

- Channel
- Culvert
- Flume
- Grassy Swale
- Other
- Sewer
- Stream
- Trick Channel

The map displays an aerial view of a town and golf course. Numerous colored markers are overlaid on the map, corresponding to the legend. Red squares with 'S' represent sumps, yellow circles with 'S' represent storage basins, and blue squares with 'D' represent dry wells. Lines in various colors represent different types of storm water lines, such as channels, culverts, and streams. The map also shows a large river and a golf course with several holes.

Why Map?

- ▶ Pollution source and source tracking is possible (Illicit Discharge Detection and Elimination)
- ▶ Help in keeping tabs of infrastructure
 - Repairs
 - Maintenance

Missoula County

- ▶ Our Conveyance system
 - Mostly Drywell/Sumps → Recede into groundwater
 - Some in need of further investigation
 - Our Outfalls:
 - East Missoula/Deer Creek
 - Lower Miller Creek/Ravenwood
 - Wye Area

Monitoring/Screening

- ▶ The known outfalls
- ▶ Monitoring Options
- ▶ Approved TMDLs
- ▶ Dry Weather Screening
- ▶ Records and Reports

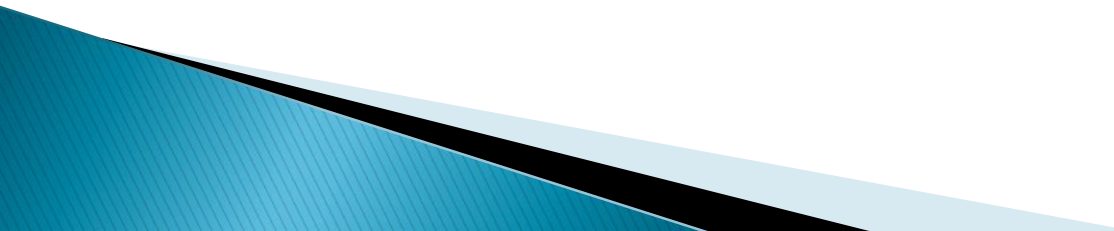
- ▶ Bi-annual
 - (Jan-June)
 - (July-Dec)

Parameter ⁽¹⁾⁽²⁾	Frequency	Type ⁽³⁾
Total Suspended Solids (TSS), mg/L	Semi-annual	Grab or Composite
Chemical Oxygen Demand (COD), mg/L	Semi-annual	Grab or Composite
Total Phosphorus, mg/L	Semi-annual	Grab or Composite
Total Nitrogen, mg/L	Semi-annual	Grab or Composite
pH, standard units	Semi-annual	Instantaneous
Copper, mg/L	Semi-annual	Grab or Composite
Lead, mg/L	Semi-annual	Grab or Composite
Zinc, mg/L	Semi-annual	Grab or Composite
Estimated Flow, gpm	Semi-annual	Instantaneous ⁽⁴⁾
Oil and Grease ⁽⁵⁾ , mg/L	Semi-annual	Grab
(1) Detection limits are pursuant to levels defined in Circular DEQ-7. (2) Total recoverable methods to be used on all metals. (3) See Definitions in Part VI. of this General Permit. (4) Estimated flow rates are appropriate in cases where measurement gauges are not installed. (5) Hexanes extraction (EPA Method 1664A).		

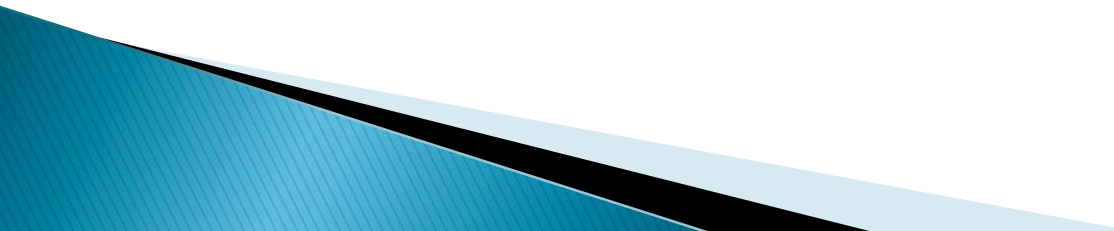
Phase II and Missoula County

- ▶ EPA's 2016 303(d) Impaired Waters list
 - Clark Fork River
 - Bitterroot River
 - Grant Creek
 - Rattlesnake Creek
 - ▶ Pollutants of Concern
 - Chlorophyll-a
 - Nitrogen/Nitrate
 - Organic Enrichment (Sewage)
 - Phosphorous
 - Sedimentation/Siltation
- 

Annual Report

- ▶ March 2020
 - ▶ Designation of high-priority outfalls
 - ▶ GIS mapping complete
 - ▶ Clarification of Legal Authority
- 

Next Steps

- ▶ Better involve and educate the public about effects of stormwater pollution.
 - ▶ Better involve the public in commenting on the County's stormwater management plan.
 - ▶ Update the Missoula County Stormwater website.
 - ▶ Clarification of roles in fulfillment of the permit requirements.
 - ▶ Changes to annual monitoring schedule.
- 

Thank You For Listening

- ▶ Questions?