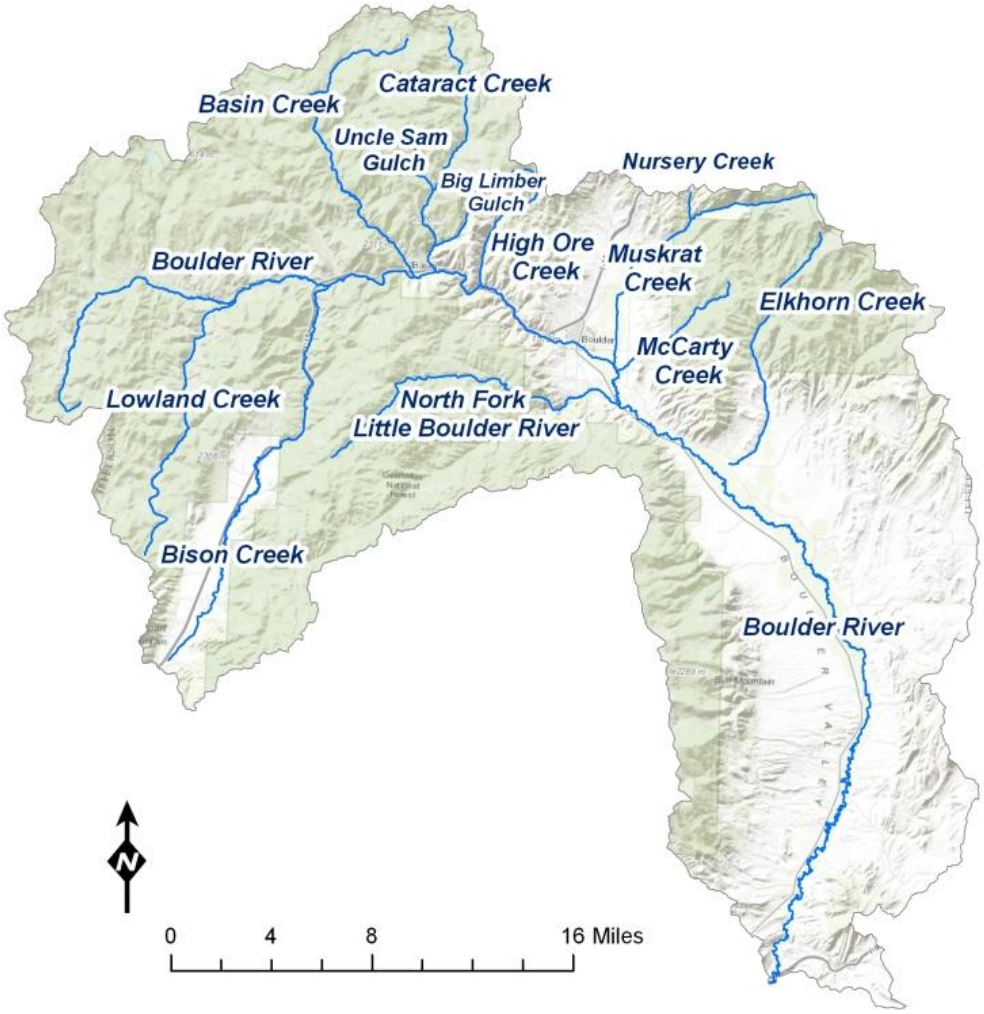
BOULDER – ELKHORN NUTRIENT, SEDIMENT, & TEMPERATURE TOTAL MAXIMUM DAILY LOAD (TMDL) PROJECT

March 12, 2013 TMDL Advisory Group Meeting

STREAMS INCLUDED IN THIS PROJECT:

- Basin Creek
- Bison Creek
- Boulder River
- Cataract Creek
- Elkhorn Creek
- High Ore Creek
- Little Boulder River
- Lowland Creek
- McCarty Creek
- Muskrat Creek
- North Fork Little Boulder River
- Nursery Creek
- Uncle Sam Gulch



TMDLs Written

Waterbody	Nutrient TMDL	Sediment TMDL	Temperature TMDL
Basin Creek		X	
Bison Creek	X	X	
Boulder River* City of Boulder to the mouth (Jefferson Slough)		X	X
Cataract Creek		X	
Elkhorn Creek		X	
High Ore Creek		X	X
McCarty Creek	X	X	
Muskrat Creek		X	
North Fork Little Boulder River		X	
Nursery Creek	X	X	
Uncle Sam Gulch	X	X	
*The Boulder River is divided into four segments. Sediment and temperature TMDLs have been written for the bottom two segments; together, they span from the town of Boulder to the mouth, where it joins the Jefferson Slough.			

Where to Find the Draft Document & Submit Comments

The draft document is available on the project website at: http://montanatmdlflathead.pbworks.com

Please submit comments by Tuesday, March 26 to cstaten@mt.gov or to:
MT Dept. of Environmental Quality
PPA/WQPB
Attn: Christina Staten
PO Box 200901
Helena, MT 59620-0901

After the stakeholder review period, the document will be released for a 30-day public comment period. The document will then be available at the Boulder community library and on DEQ's website at http://deq.mt.gov/pubcom.mcpx. A public meeting will also be held during the public comment period.

Project Contacts

Christina Staten	Project Coordinator	cstaten@mt.gov	(406) 444-2836
Jim Bond	Sediment & Temperature Project Manager	jabond@mt.gov	(406) 444-3548
Lou Volpe	Nutrient Project Manager	lvolpe@mt.gov	(406) 444-6742
Ann McCauley	Technical Assistance for Restoration Projects	amccauley@mt.gov	(406) 444-9897

Metals TMDLs

The final, approved metals TMDL document can be found on DEQ's webpage at:
http://deq.mt.gov/wqinfo/TMDL/finalReports.mcpx

LAND MANAGEMENT PRACTICES THAT CAN IMPROVE WATER QUALITY IN THE BOULDER RIVER WATERSHED

Sections 8, 9, and 10 of the document provide detail on suggested potential land management practices and restoration objectives. Information on metals restoration and funding is not included below, but is also in the document.

The practices described in the table below reduce the amounts nitrogen, phosphorus, and sediment reaching streams and rivers from streambank erosion, agricultural practices, timber harvest areas, unpaved roads, and failing septic systems. Many of the practices will result in improved, healthier riparian areas that provide more shade and reduce streams temperatures. The table also includes recommendations for improving irrigation efficiency, which ultimately results in more water left in the stream.

Riparian areas are vegetated zones or "green zones" along a waterbody.

Best Management Practice (BMP)	**Description**
Livestock Management	
Rotational Grazing (Livestock Distribution Improvements)	Timing (seasonal), frequency, and duration considerations This includes limiting the time livestock spend in pastures with riparian areas, influencing the distribution of livestock within the targeted pasture, ensuring adequate residual vegetation cover, and providing adequate regrowth time and rest for plants. Development of a grazing management plan is needed for this BMP to be successful.
Salt & Mineral Block Placement	Use salt and mineral block placement to help distribute animals and reduce 'loafing' in riparian areas. Placement is recommended to be a minimum of a ¼ mile from the stream, and preferably at least a half mile.
Feeding Stations & Shelter Fences	These practices help prevent livestock from 'loafing' in riparian areas and from using riparian areas for weather protection.
Off-Stream Watering	A permanent or portable device to provide an adequate amount and quality of drinking water for livestock. The device and its location should allow livestock to obtain water from a source other than a stream or river.
Riparian Fencing	Fencing used to permanently or temporarily control livestock access to riparian areas and wetlands. Total exclusion may not be feasible, and water access points may need to be created.
Water Gap	A controlled access point from which livestock can obtain drinking water directly from a stream or river. Water gaps can provide access to water along reaches that are temporarily or permanently fenced.

Best Management Practice (BMP)	Description
Cropping Practices	
Cover Crop	Vegetation planted on what would otherwise be fallow ground. Designed to prevent mobilization and transport of pollutants by precipitation and runoff during periods when the primary crop is unable or unavailable to perform a similar function.
Conservation Tillage	Tillage practices designed to prevent soil erosion and reduce surface or subsurface runoff potential. Practices may include no till, reduced or minimum till, strip till, direct seeding, mulch till, or ridge till.
Review Fertilizer Application Rates	Review application rates in terms of efficiency for crop requirements and uptake. Over application of fertilizer is more costly and allows nutrients to leach into groundwater or runoff into surface water.
Irrigation Practices	
Increase Irrigation Efficiency: • Install upgraded head gates for more exact control of diversion flow and to minimize leakage when not in operation • Upgrade ditches to increase conveyance efficiency (including installation of ditch linings where appropriate) • Determine necessary diversion flows and timeframes that would reduce over-watering and improve forage quality and production • Review timing of irrigation (time of day) to reduce evaporative losses • Redesign or reconfigure irrigation systems, if needed	
General / Other Practices	
Riparian Buffer	A strip of permanent native vegetation at least 30 feet wide between a waterway and agricultural field, timber harvest area, or any upland area. The buffer strip slows water runoff, acts as a filter to reduce the amount of sediment and nutrients entering the waterway, and reduces streambank erosion.
Eliminate Invasive (Noxious) Weeds	Native vegetation helps maintain stable streambanks and provide better filtering capabilities and water retention.
Septic System Maintenance	Regular inspection and pumping of your septic system.
Dirt/Gravel Road Repair & Maintenance	Divert water off roads into healthy vegetation before it enters the stream. The vegetation acts a filter to remove sediment and other pollutants.

Contact Ann McCauley for assistance with water quality restoration projects. There may be funding available to assist with your projects.

amccauley@mt.gov, (406) 444-9897

FUNDING & INFORMATION SOURCES

Agency & Program [1]	Program Purpose	Who Can Apply [3]	Program Contact	Website
DEQ 319 Program Grants	Address nonpoint source water pollution.[2] Two categories of applications: 1) Watershed Restoration (including groundwater) or 2) Education & Outreach	Governmental entities & 501c(3)	Robert Ray rray@mt.gov 406-444-5319 Ann McCauley amccauley@mt.gov 406-444-9897	http://www.deq.mt.gov/wqinfo/nonpoint/319Grants.mcpx http://montananps319grants.pbworks.com
DEQ Volunteer Monitoring Laboratory Analysis Assistance	Support voluntary water quality monitoring efforts. DEQ staff will assist in development of a required sampling & analysis plan.	Governmental entities & 501c(3)	Robert Ray rray@mt.gov 406-444-5319 Ann McCauley amccauley@mt.gov 406-444-9897	http://www.deq.mt.gov/wqinfo/nonpoint/nonpointsourceprogram.mcpx
DNRC Conservation District Grants	Grants may be used for technical assistance necessary to get projects on the ground. Grants are also available for administrative expenses.	Conservation Districts	Laurie Zeller lzeller@mt.gov 406-444-6669	http://www.dnrc.mt.gov/cardd/ConservationDistricts/Default.asp
DNRC Range Improvement Loan Program	Fundable projects: fencing, seeding, stockwater development, & other range improvement practices. $75,000 loan limit with 3% interest for 10 years	Private Landowner	Larry Bloxsom lbloxsom@mt.gov 406-444-6686	http://www.dnrc.mt.gov/cardd/ConservationDistricts/RangeImprovements.asp
DNRC Loan & Grant Programs for Irrigation Development	Projects typically address increases in irrigation efficiencies through water conservation, expansion or sustaining irrigated acreage, increases in production of high-value crops, and improving management or irrigation systems	Private landowners, Private profit or non-profit entities, Governmental entities	Alice Stanley astanley@mt.gov 406-444-6687	http://www.dnrc.mt.gov/cardd/ResourceDevelopment/IrrigationDevelopment/default.asp

Agency & Program [1]	Program Purpose	Who Can Apply [3]	Program Contact	Website
DNRC Renewable Resource Loans	Loans for private water development projects. Irrigation system improvements are the most common type of projects funded.	Private landowners, Private entities including water user associations and ditch companies	Larry Bloxsom lbloxsom@mt.gov 406-444-6686	http://www.dnrc.mt.gov/cardd/ResourceDevelopment/PrivateLoans.asp
DNRC Renewable Resource Grants	Grants up to $100,000 per project or activity	Public entity such as a conservation district or irrigation district	See web link	http://www.dnrc.mt.gov/cardd/ResourceDevelopment/rrgp/RenewableGrantProgram.asp http://www.dnrc.mt.gov/cardd/ResourceDevelopment/IrrigationDevelopment/renew_resource_grants.asp
FWP Future Fisheries	Funding for on-the ground projects that benefit wild fish. Examples include riparian fencing and off-stream water development, revegetation of streambanks, installation of screening devices on irrigation diversions, etc.	Anyone	Ron Spoon Fisheries Biologist rspoon@mt.gov 406-266-4237	http://fwp.mt.gov/fishAndWildlife/habitat/fish/futureFisheries/
NRCS Funding & Technical Assistance Programs	The NRCS has a variety of programs to provide financial and technical assistance to farmers, ranchers, and non-industrial private forest land owners for: conservation planning, land protection, and conservation projects.	Private landowners	District Conservationist: Joel Laliberty Joel.laliberty@mt.usda.gov	http://www.mt.nrcs.usda.gov/programs/

1. Definitions of Agency Abbreviations: DEQ = Dept. of Environmental Quality (Montana); DNRC = Dept. of Natural Resources & Conservation (Montana); FWP = Fish, Wildlife & Parks (Montana); NRCS = Natural Resources Conservation Service (USDA)
2. Nonpoint source pollution does not emanate from a specific point, but from a diffuse area such as agricultural fields, yards, and timber harvest areas. Common pollutants include sediment, nutrients, pesticides, pathogens, and petroleum products/oil.
3. Governmental entities include conservation districts. 501c(3) organizations include watershed groups and other nonprofit organizations.