Logistics

- Meeting Facilitator: Moira Davin
- This meeting is being recorded
- Q&A will be held at the end of the presentation
- You may enter questions into the Q&A feature at any time
Meeting Purpose

Present an overview of the Montana Water Quality Act programs within DEQ
Presenters

• Amy Steinmetz – Water Quality Division Administrator
• Myla Kelly – Water Quality Standards & Modeling Section Supervisor
• Darrin Kron – Monitoring & Assessment Section Supervisor
• Christina Staten – TMDL Planner
• Eric Trum – Nonpoint Source & Wetland Programs Supervisor
• Rainie DeVaney – Surface Water Discharge Permitting Supervisor
DEQ’s Mission

To Champion a Healthy Environment for a Thriving Montana
Water Quality Act Programs

- Water Quality Standards
- Water Quality Monitoring and Assessment
- Total Maximum Daily Loads (TMDLs)
- Permits
- Nonpoint Source and Wetland Programs
Develop Water Quality Standards

Adopt criteria to describe desired conditions and protect beneficial uses.

Monitor Water Quality

Collect data about water quality

Assess Water Quality

Describe water quality and determine whether waters are “impaired” (do not meet water quality standards and do not fully support beneficial uses)

Identify Sources of Pollution

Estimate amount of pollution from identified sources

Develop Total Maximum Daily Loads (TMDLs)

Determine reductions needed for impaired waters to meet water quality standards, and recommend pollution reduction strategies

Support Water Quality Protection Practices

Support efforts to reduce point and nonpoint source pollution and protect and restore water quality.

DEQ’s Water Quality Planning Process

7
Water Quality Standards

- Beneficial uses such as recreation, aquatic life, drinking water, agriculture
- Water quality criteria (numeric and narrative)
- Nondegradation = protection of high-quality waters
Water Quality Monitoring & Assessment

• Data collection and use
  • Quality data: Sampling Plans, Standard Procedures
  • DEQ collects data and guides others to collect quality data
  • Multipurpose uses – permits, standards, impairment, TMDL/ finding sources, tracking restoration progress
Water Quality Assessment Method

- Overview of indicators, thresholds, data types and pollutants that affect uses

- Data requirements: quality assurance review, minimum necessary for assessment

- Water body process and decision framework
  Waterbody – Use – Pollutant relationships

- Information tracking system and reporting overview

- Must use all readily available, applicable, quality data
Parameter-Specific Assessment Methods

DEQ periodically revises existing or develops new parameter-specific assessment methods

Existing:
- Nutrients (wadeable streams)
- Metals
- Sediment in mountain streams
- *Escherichia coli* (E. coli)
- Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR)

In Development:
- PH
- Dissolved Oxygen
- PCBs/Dioxins
- Eutrophication of Lakes/Reservoirs
- Eutrophication of Large Rivers
- Temperature
- Turbidity/Total Suspended Solids

Detailed review of specific statistical process for the pollutant(s).
Impairment Listing Decisions

• A parameter that does not meet WQ standards is a “cause of impairment” and is added to Montana’s list of impaired waters

• Impairment causes may be pollutants (require a TMDL) or non-pollutants (do not require a TMDL)

• Impairment causes may affect one or several uses

• One or more sources are associated with each impairment cause; sources may be confirmed or not
Water Quality Assessment

- Information is tracked via an impaired waters list that includes the waterbody-pollutant impairment causes that require TMDL development
- CWA calls for biennial reporting
- MT WQ Act requires reporting every 5 years, or when requested for a specific waterbody
- Call for data, public comment period
- Report, mapping and water body reviews are provided on DEQ website
Total Maximum Daily Loads (TMDLs)

Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.
Why TMDLs are Useful

- Address cumulative impacts
- Incorporate multiple source types, both regulated and non-regulated
- Guide future restoration work and prioritization of projects
- Help landowners identify ways to protect water quality
How a TMDL is Developed

1. Define the TMDL water quality targets
2. Define the TMDL (allowable loading rate)
3. Determine sources of pollutant loading
4. Determine TMDL allocations
5. Develop water quality improvement recommendations

Note: TMDL revisions and development in conjunction with AMPs is a potential path forward
TMDL Allocations: Conceptual Diagram

- Total Existing Load
- TMDL (allowable load at a given flow)

Source 1 Allocation
Source 2 Allocation
Source 3 Allocation
TMDL Allocations: Implementation

• Allocations to non-regulated sources, such as agriculture and water management practices, are predominately based on voluntary landowner actions

• Allocations can require changes to discharge limits for permitted facilities

• Note that TMDLs are calculated using example flow conditions and hardness values, and the numbers shown in the document are not meant to be incorporated directly into permits
Water Protection Bureau

• Permitting:
  • Surface water
  • Ground water
  • 401 water quality certification
  • 318 authorization
    • Temporary turbidity

• Technical assistance and wastewater system inspections

• Source water protection program
Montana Pollutant Discharge Elimination System (MPDES) - Surface Water Permitting

MPDES permits for point source discharges of pollutants to state surface waters
• federal regulations
• state law and rules
Protect beneficial uses through effluent limits, monitoring and reporting requirements and special conditions
MPDES Permits Limit Types

• **TBELs** – technology-based effluent limits:
  • Minimum level of treatment required for given industry-type
  • Industry specific and Parameter-specific
  • Federal rules; Effluent Limitation Guidelines

• **WQBELs** – water quality-based effluent limits:
  • Protect beneficial uses
  • Parameter specific
  • Limits if reasonable potential to contribute to exceedance of numeric or narrative water quality standard
  • Includes WLA in a TMDL
Montana Pollutant Discharge Elimination System (MPDES) Permits

Compliance schedule included if necessary for permittee to meet new limits.

Special conditions included when information or improvements are needed. Examples:

• Mixing zone studies
• Operation & Maintenance requirements
• Optimization studies
• Infiltration/Inflow reports
Inputs for MPDES Permit Development

- **Water Quality Standards**
  - Circular DEQ-7
  - Subchapter 6
  - Mixing Zone
  - Nondegradation

- **Monitoring and Assessment**
  - 303(d) List of impaired waterbodies
  - Background water quality

- **Total Maximum Daily Loads**
  - Waste Load Allocations

**Work products used in MPDES permit development...**

- **Permit Writers use this information to...**
  - Develop effluent limits
  - Ensure nonsignificant changes in water quality
  - Designate any appropriate mixing zone

  - Evaluate assimilative capacity for mixing
  - Determine high quality waters

  - Incorporate any applicable WLA consistent with the assumptions of TMDL
Nonpoint Source Pollution (NPS) and Wetlands

• NPS not specifically defined in Clean Water Act or Montana WQA
• NPS pollution from broad and diffuse sources
• Actions to address NPS pollution are largely voluntary
• DEQ provides technical and financial support for implementation
NPS Management Plan

• Goal: to protect and restore water quality from nonpoint sources of pollution
  • Inform Montana citizens about NPS pollution
  • Identify how NPS pollution is being addressed by partners
  • Describe how DEQ will work with partners and provide statewide leadership for implementation
  • Articulate strategies, programs and resources for protecting and restoring water quality affected by NPS pollution
NPS Management Plan – Interim Outcomes

• Sources of pollutants identified are sufficient for local planning efforts
• Plans are in place to ensure efficient and effective implementation
• Projects and practices are implemented to address NPS issues
• Project implementation and effectiveness is tracked and reported
NPS Management Plan - Implementation

Ruby River Restoration – Miller Ranch

Total Cost - $839,084.89
DEQ 319 - $117,000

Partners:
- Miller Cattle Company
- Miller Recreational Development
- NRCS
- MT FWP FFIP
- MT Chapter of American Fisheries Society
- Sacajawea Audubon
- Private Landowners
- Alder School
- Montana Watershed Coordination Council

https://player.minam.com/video/135526458?autoplay=1
Questions?

- Raise your hand to be called on and unmuted
- Or type questions into the Q&A feature