

Program Evaluation

Water Quality Planning Bureau

Department of Environmental Quality



WATER POLICY INTERIM COMMITTEE

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Introduction

Montana law requires the Water Policy Interim Committee to conduct program evaluations of the agencies under the committee's oversight.¹

The Council allocated 272 hours of staff time to evaluate the four agency programs under WPIC oversight during the 2015-16 interim. This evaluation generally covers the Water Quality Planning Bureau and its 5 programs or sections.

Water Quality Planning Bureau

Background

The Water Quality Planning Bureau is located within the Planning, Prevention, and Assistance Division of the Department of Environmental Quality. The bureau's main function is to create water quality classifications, standards, and watershed pollutant loads, which helps guide the water pollution discharge permitting program and the watershed protection program. The bureau also monitors and assesses water quality across Montana.

Water quality protection in Montana began in 1907, when the Legislature passed laws responding to typhoid outbreaks in the Milk River Basin. The law required treatment of all sewage discharged into public water supplies.² Other laws would follow. The 1967 Montana Legislature passed a measure stating Montana's public policy was to protect, maintain, and improve quality of water and to "provide a comprehensive program for the prevention, abatement, and control of water pollution."³

State and federal legislation passed soon afterwards would provide the framework for today's regulatory environment. In 1972, Congress passed the Clean Water Act, which seeks to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."⁴ The rewritten, 1972 Montana Constitution further declared that all persons have inalienable rights, including to a clean and healthful environment and to life's basic necessities,⁵ and that "[t]he state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations."⁶ The Montana Legislature recognized these Constitutional protections through the Water Quality Act, which states:

It is the legislature's intent that the requirements of this chapter provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to

¹ Section 5-5-231, MCA.

² Montana Legislative Environmental Policy Office, A Guide to Montana Water Quality Regulation (2012), 5.

³ Sec. 121, Ch. 197, Laws of Montana 1967

⁴ 33 U.S.C. 1251

⁵ Article II, sec. 3, 1972 Mont. Const.

⁶ Article IX, sec. 1, 1972 Mont. Const.

prevent unreasonable depletion and degradation of natural resources. A purpose of this chapter is to provide additional and cumulative remedies to prevent, abate, and control the pollution of state waters.⁷

In 1974, the U.S. Environmental Protection Agency delegated authority to Montana to implement certain Clean Water Act programs, including development of water quality classifications and standards. These classifications and standards are used by the DEQ when issuing discharge permits, making assessment decisions, and developing plans to meet standards.⁸ The water quality standards must meet or exceed federal standards – or provide justification as to why Montana’s needs differ.

The Board of Environmental Review, a seven-member board appointed by the governor, establishes classifications of state waters and standards of water quality. Although the board is composed of technical experts in hydrology, local government planning, environmental sciences, public health, and medicine, the board relies on the technical expertise of the Water Quality Planning Bureau to arrive at its classifications and standards.

The Water Quality Planning Bureau contains 5 programs or sections, which will be explained in this document:

- Information Management and Technical Services Section
- Quality Assurance Program
- Watershed Management Section
- Water Quality Monitoring and Assessment Program
- Water Quality Standards Section

The bureau’s work follows this general flowchart:



Water Quality Standards Section

The Water Quality Standards Section concentrates on the first (red) part of the flowchart above. The section develops classifications and standards for the board’s consideration. Each body of surface water and ground water is classified based on certain criteria. For surface water, these criteria include determining whether water is suitable for:

- Drinking, culinary, and food-processing purposes
- Swimming and recreation
- Growth and propagation of fishes and associated life
- Agricultural and industrial water supply.

Ground water is classified based on natural specific conductance, which is a measure of the amount of dissolved solids. Ground water classification ranges from Class I ground water, which is suitable for public and private water

⁷ Section 75-5-102, MCA.

⁸ The Water Quality Discharge Permit Section of the DEQ’s Water Protection Bureau issues pollution discharge permits.

supplies to Class IV ground water, which is used primarily for industrial purposes. The board is obligated to review these classifications every 3 years and to revise them as needed.⁹

The standards for these classifications of surface water and ground water are found in certain “circulars” and administrative rules:

- Circular DEQ-12A for numeric nutrient standards
- Circular DEQ-7 for numeric water quality standards
- Title 17, Chapter 30, Subchapter 10, Administrative Rules of Montana for ground water classification
- Title 17, Chapter 30, Subchapter 5, Administrative Rules of Montana for mixing zones in surface and ground water.

These standards may be numeric or narrative. For example, the numeric standard for arsenic for human health is 10 parts per billion.¹⁰ A narrative standard for sediment is “[n]o increases are allowed above naturally occurring concentrations...which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious.”¹¹

Mixing zone standards give a pollution discharge permit holder flexibility to meet a given water quality standard.¹² A mixing zone is an established area where water quality standards may be exceeded while a discharge is mixed with receiving water.¹³

Exceptions to water quality standards exist. The board may temporarily modify a water quality standard if substantive information indicates a water body or segment is not supporting its designated uses; or the board may raise standards pertinent to aquatic life. And the DEQ may allow short-term water quality exemptions.¹⁴

State law also requires the maintenance and protection of existing uses of state waters and a level of water quality to protect those uses.¹⁵ This is known as the “nondegradation policy.” This policy is recognized within the water quality standards developed by the Water Quality Standards Section (and approved by the Board of Environmental Review) and applied through the permitting process, which is administered by the Water Protection Bureau.¹⁶

Water Quality Monitoring and Assessment Program

The second (green) part of the bureau flowchart involves the Water Quality Monitoring and Assessment Program. The program monitors water quality conditions and trends and assesses sources and severity of pollution through statewide water quality monitoring networks and pollution source inventories. The program identifies impaired streams and lakes in need of a restoration plan.

⁹ Section 75-5-301(3), MCA.

¹⁰ DEQ Circular 7.

¹¹ Section 17.30.621, Administrative Rules of Montana.

¹² Section 75-5-301(4), MCA.

¹³ Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 46.

¹⁴ Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 7.

¹⁵ Section 75-5-303, MCA.

¹⁶ Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 9: “The DEQ ... may authorize degradation if a discharger demonstrates ... there are no economically, environmentally, and technologically feasible modifications to the proposed project that would result in no degradation; the proposed project will result in important economic or social benefits that exceed societal costs of allowing degradation; existing and anticipated uses of state waters will be fully protected; and the least degrading water quality protection practices will be used.”

The program measures water quality on 46,000 miles of perennial streams and 573,000 acres of lakes and reservoirs. As of 2014, the program assessed water quality on 44 percent of perennial stream miles and 86 percent of lakes and reservoirs.¹⁷ In Montana, the most common pollutants are sediment, nutrients, and metals, all of which may alter the physical and chemical properties of water.¹⁸ Sources of these pollutants include point sources (pollution discharged from any identifiable point, including pipes, ditches, channels, sewers, and tunnels), nonpoint sources (pollution from various indefinable points discharged over a wide area, like agricultural land runoff or roadways), and naturally occurring sources (not as a result of human activities, such as arsenic from Yellowstone National Park geothermal basin).

The Water Quality Assessment and Monitoring Program partners and collaborates with federal agencies, the state university system, conservation districts, and other watershed groups and nonprofit organizations to conduct its monitoring. Its most identifiable work product is the Montana 303(d)/305(b) Integrated Water Quality Report, which was released in 2014¹⁹ and is required to be updated every 2 years.²⁰

The Water Quality Monitoring and Assessment Program is also responsible for the last (orange) part of the flowchart – determining if water quality standards are attained. Attaining water quality standards is a goal for all the DEQ’s water quality work.

Watershed Management Section

The Watershed Management Section takes the list of impaired or threatened waters identified by the Water Quality Monitoring and Assessment Program (the 303(d) list) and calculates pollutant loads – known as “total maximum daily loads” or TMDLs – for those impaired lakes or stretches of rivers. This is the third (purple) part of the flowchart on page 2.

Montana law defines a TMDL as “the sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable surface water quality standards.”²¹ TMDLs function both as a measure of water quality and as a plan to improve water quality in a watershed. A TMDL quantifies the amount of pollutant, its source, and reductions necessary to meet the water quality standards protecting the most sensitive uses. These calculations factor in variables such as seasonal temperature, flow, and volume.²²

While TMDLs may be used to write limits into a discharge permit²³, flexibility within state law also allows for effluent trading. Effluent trading allows facilities to meet regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from another source at a lower cost.²⁴

While every identified impaired or threatened water needs a TMDL, not every designated lake and stream has a TMDL developed. Court decisions, legislative actions, and local interest in water quality improvements have

¹⁷ Montana 2014 Integrated Water Quality Report Summary, 1.

¹⁸ Montana 2014 Integrated Water Quality Report Summary, 2.

¹⁹ DEQ website, *Montana’s Clean Water Act Information Center*, deq.mt.gov/eqinfo/cwaic/reports.mcp

²⁰ The numbers in the title of the report refer to the subsections of the federal Clean Water Act that require a list of impaired or threatened waterbodies (“303(d)”), and a report on the condition of waterbodies under state jurisdiction (“305(b)”).

²¹ Section 75-5-103(37), MCA.

²² Montana 2014 Integrated Water Quality Report Summary, 2-3.

²³ Known as a “waste load allocation”

²⁴ Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 24.

influenced what watersheds have been prioritized for TMDL calculations. The DEQ has designated 99 watershed-based TMDL planning areas across Montana and has completed TMDLs in 50 of these areas with EPA approval.²⁵

Absent a court order, the statewide TMDL advisory group helps set section priorities.²⁶ The statewide advisory group is composed of representatives from agriculture, conservation, environmental, recreational, forestry, municipal, treatment plant, mining, federal and state, conservation district, hydroelectric dam, and fishing industries. More localized watershed advisory groups advise the statewide advisory group, and 2015 legislation requires the Watershed Management Section to prioritize a TMDL calculation for an entity seeking a discharge permit.

The fourth (blue) part of the flowchart on page 2 includes processes outside the Water Quality Planning Bureau. The Water Protection Bureau issues pollution discharge permits, which use the water quality classifications, standards, and waste load allocations determined in the first three sections of the flowchart. While discharge permits are issued for identifiable, point-source pollution, the Watershed Protection Section manages nonpoint pollution activities. Nonpoint pollution can be generated by most land-use activities, such as farming or suburban development. Common nonpoint source pollutants are motor oil, fertilizers, yard waste, and litter, for example. While pollution discharge permits are compulsory, the department seeks voluntary cooperation to meet nonpoint pollution goals.

Information Management and Technical Services Section

This section supports the bureau's data and information management systems and IT project management. The section manages the Integrated Water Quality report. The section also manages publicly available data on the Clean Water Act Information Center, Library Internet Search Application (a water quality planning library), and the EPA's water quality data warehouse (STORET data warehouse).

Quality Assurance Program

The Quality Assurance Section underlines the bureau's quality of information used to support decisions. The EPA requires this quality assurance program, known as the bureau's Quality Management Plan.

The Water Quality Planning Bureau uses data collected from a variety of sources, including other agencies, contractors, and volunteers. The bureau must ensure "decisions made using these data must be scientifically defensible, able to withstand public scrutiny, and...legally defensible."²⁷

The Quality Assurance Program guidelines include standards for document formatting, editorial content, use of environmental data, and sampling and analysis activities.

²⁵ DEQ website, *Montana's TMDL Development Priority Areas*, deq.mt.gov/wqinfo/TMDL/tmdldevelopmentpriorityareas.mcp

²⁶ Section 75-5-702, MCA.

²⁷ DEQ website, *Quality Assurance Program*, deq.mt.gov/wqinfo/QAProgram/default.mcp

Fiscal Analysis

Funding sources for the Water Quality Planning Bureau come from a variety of state general fund, state special revenue, and federal funds. The Legislature has approved the following appropriations for the past 4 biennia:

For fiscal years 2016-17	\$11,762,035
2014-15	\$11,119,906
2012-13	\$11,678,763
2010-11	\$12,234,617

The bureau employs 40.30 full-time equivalent employees.

Audits

The Water Quality Planning Bureau has not been subject to a specific legislative audit. The Legislative Audit Division conducts biennial financial-compliance audits of the Department of Environmental Quality to determine if an agency's financial operations are properly conducted, the financial reports are presented fairly, and the agency has complied with applicable laws and regulations. A review of the past four financial-compliance audits indicated no recommendations specifically targeting the bureau.

Issues

At the September 2015 WPIC meeting, the committee decided that these program evaluations should identify potential issues with an agency based on criteria in section 5-5-215(1)(c), MCA. This section of state law directs interim committees to identify issues likely to require future legislative attention, opportunities to improve existing law through the analysis of problems experienced with the application of the law by an agency, and experiences from citizens that may be amenable to improvement through legislative action.

To this end, DEQ staff will identify upcoming issues related to the Water Quality Planning Bureau that may need legislative attention at the January meeting. In addition, WPIC staff will solicit comments from the 661 members who subscribe to the committee email list.