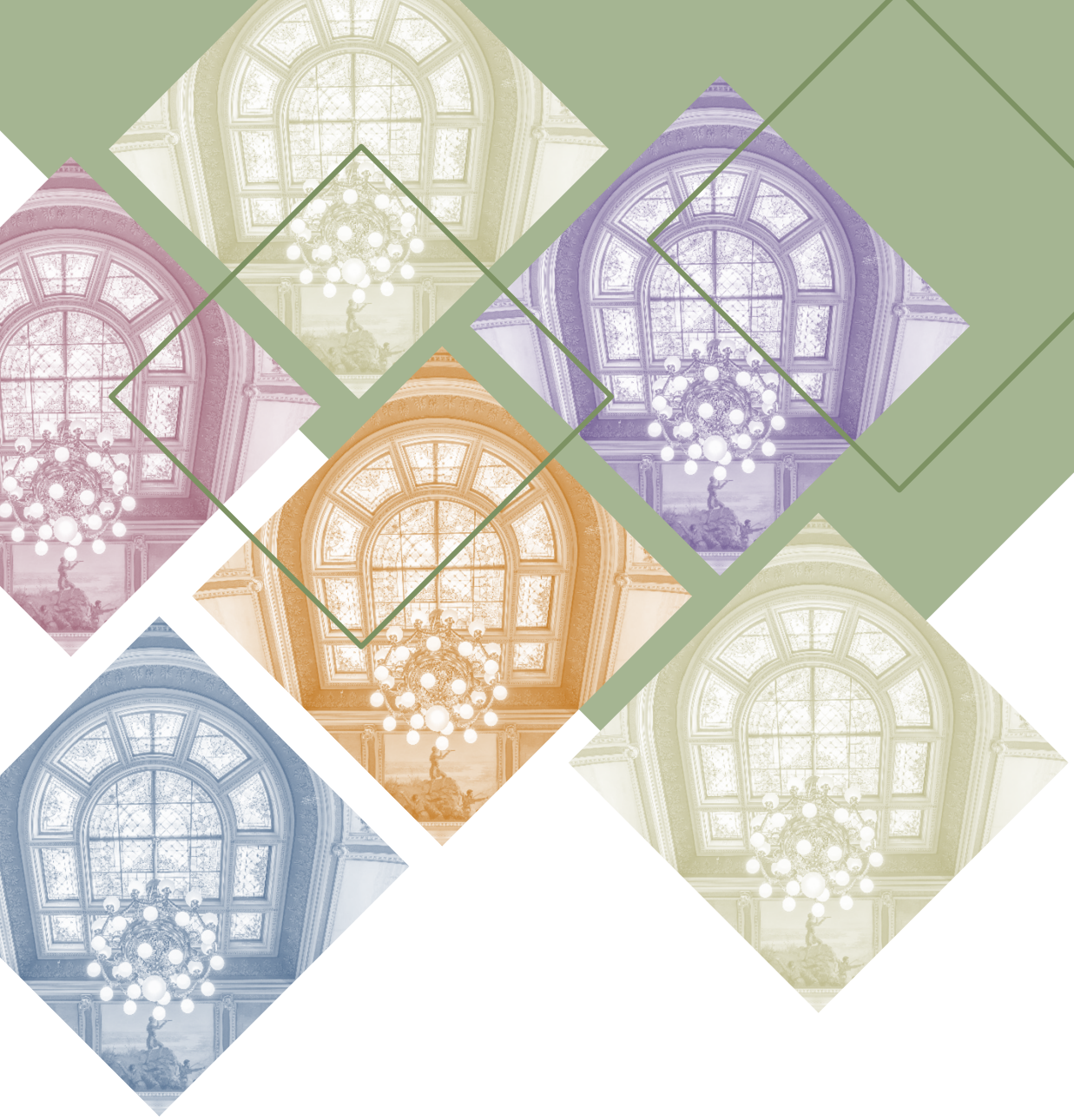

PROGRAM EVALUATION: WATER QUALITY DIVISION OF THE DEQ

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Water Policy Interim Committee
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MONTANA STATE LEGISLATURE

PROGRAM EVALUATION: WATER QUALITY DIVISION

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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 WPIC allocated 102 hours of staff time to evaluate the two agency programs under committee oversight during the 2017-2018 interim. This evaluation generally covers the Water Quality Division of the Department of Environmental Quality and its four bureaus.

BACKGROUND

The Water Quality Division works to assess and protect Montana's water quality. Much of this work follows federal law, specifically the Clean Water Act and the Safe Drinking Water Act. The division sets water quality standards, issues permits for pollution discharges, and regulates drinking water, wastewater, and other sanitation systems. The division is composed of four bureaus:

- Water Quality Planning Bureau
- Water Protection Bureau
- Engineering Bureau
- Public Water Supply Bureau

The Water Quality Division was created in 2016 during a department reorganization. This program evaluation will summarize and quantify the workings of each bureau and its affiliated programs, sections, or units.

Early Legislation

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, including at least three bills related to water quality in the 1967 session.

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] It also passed broad public health laws, which created the foundation of today's regulatory environment for drinking water and sanitation facilities. That legislation promised to "protect, maintain, and improve the quality and potability of water for public water supplies and domestic uses,"[4] and required rules and standards that "provide the basis for approving subdivision maps or plats for various types of water and sewage facilities, both public and private."[5]

The federal Clean Water Act and Safe Drinking Water Act provide the framework for today's regulatory environment.

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[1] Section 5-5-231, MCA.
[2] Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2012), 5.
[3] Section 121, Ch. 197, Laws of Montana 1967.
[4] Section 140, Ch. 197, Laws of Montana 1967.
[5] Section 152, Ch. 197, Laws of Montana 1967.

Clean Water Act

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."[6] 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,[7] and that "[t]he state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations."[8] 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 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.[9]

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 and issuance of discharge permits. These classifications and standards are used by the DEQ when issuing discharge permits, making assessment decisions, and developing plans to meet standards.[10] The water quality standards must meet or exceed federal standards — or provide justification as to why Montana's needs differ. Permittees must limit pollutants to standards developed by the DEQ. The EPA retains oversight authority and may administer individual cases.

Safe Drinking Water Act

Congress passed the Safe Drinking Water Act in 1974 to regulate the nation's public drinking water supply by setting standards to control the level of contaminants. Congress amended the act in 1986 and 1996 to expand protections. The act allows the Environmental Protection Agency to set drinking water standards — and to ensure these standards are met. Regulations set either a maximum contaminant level or treatment technique rules.[11] Regulated contaminants[12] include the following:

- Microorganisms, such as coliform bacteria
- Disinfectants, such as chlorine and chloramine
- Disinfection byproducts, such as bromate
- Inorganic chemicals, such as copper, cyanide, fluoride, and mercury
- Organic chemicals, such as atrazine, benzene, and glyphosate
- Radionuclides, such as natural and human-made radioactive minerals

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[6] 33 U.S.C. 1251.
[7] Article II, sec. 3, 1972 Mont. Const.
[8] Article IX, sec. 1, 1972 Mont. Const.
[9] Section 75-5-102, MCA.
[10] The Water Quality Discharge Permit Section of the DEQ's Water Protection Bureau issues pollution discharge permits.
[11] See www.epa.gov/sdwa.
[12] A more explicit list is available at www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf.

The EPA granted primacy to the DEQ in the 1990s to regulate what are now 2,174 public water systems in Montana.[13] Administrative rule and DEQ "circulars" provide specific guidance and standards for the department's activities. The DEQ Enforcement Division pursues violations of these laws, rules, permit conditions, or orders.[14]

Role of Board of Environmental Review

The Board of Environmental Review retains a large role in Montana's water quality regulations.

The board, consisting of seven members 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 Board of Environmental Review may adopt rules related to permit applications and for the process for issuing, denying, modifying, or revoking permits. The Water Quality Discharge Permit Section issues, suspends, revokes, modifies, or denies discharge permits. The Compliance, Training, and Technical Assistance Section also ensures compliance with its permitting conditions. The board may grant a permitholder an appeals hearing if the bureau suspends, revokes, modifies, or denies a permit. Certain permit decisions may be appealed to a district court.

As allowed by state and federal law,[15] the Board of Environmental Review has general supervision of all public water supply systems in Montana — and of the Water Quality Planning Bureau. The board approves all rules and standards developed by the experts in the bureau. The board may consider appeals to bureau decisions and set certain application fees.[16]

In addition to its duties described earlier, the bureau may issue variances and exemptions for systems, depending on the circumstances.[17] The bureau may also issue boil orders or emergency responses, if necessary.

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[13] Montana's 2017 Annual Public Water System Compliance Report, 3, http://deq.mt.gov/Portals/112/Water/PWSUB/Documents/MT%20ACR%202017_050918.pdf.
[14] Section 75-6-110, MCA.
[15] Safe Drinking Water Act, 42 U.S.C. 300f; Title 75, ch. 6, part 1, MCA.
[16] Title 75, ch. 6, part 1, MCA.
[17] Sections 75-5-203 and 75-6-107, MCA.

Water Quality Planning Bureau

The Water Quality Planning Bureau contains three programs or sections:

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

The bureau's work follows this general flowchart:

Water Quality Standards and Modeling Section

The Water Quality Standards and Modeling Section concentrates on the first (**orange**) 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 the following purposes:

- Drinking, culinary, and food processing
- 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 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.[18]

[18] Section 75-5-301(3), MCA.

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 water 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.[19] 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."[20]

Mixing zone standards give a pollution discharge permitholder flexibility to meet a given water quality standard.[21] A mixing zone is an established area where water quality standards may be exceeded while a discharge is mixed with receiving water.[22]

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. In addition, the DEQ may allow short-term water quality exemptions.[23]

State law also requires the maintenance and protection of existing uses of state waters and a level of water quality to protect those uses.[24] This is known as the nondegradation policy. This policy is recognized within the water quality standards developed by the Water Quality Standards and Modeling Section (and approved by the Board of Environmental Review) and is applied through the permitting process, which is administered by the Water Protection Bureau.[25]

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.

The program will assess water quality on 58,200 miles of perennial streams and 730,000 acres of lakes and reservoirs. As of 2018, the program assessed water quality on 38 percent of perennial stream miles and 77 percent of lakes and reservoirs.[26] In Montana, the most common pollutants are sediment, nutrients, and metals, all of which may alter the physical and chemical

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[19] DEQ Circular 7, http://deq.mt.gov/Portals/112/Water/WQPB/Standards/PDF/DEQ7/DEQ-7_Final_May2017.pdf.
[20] Administrative Rules of Montana 17.30.621.
[21] Section 75-5-301(4), MCA.
[22] Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 46.
[23] Ibid., 7.
[24] Section 75-5-303, MCA.
[25] 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."
[26] Montana 2018 Draft Integrated Water Quality Report, 12.

properties of water.[27] 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, such as agricultural land runoff or roadways), and naturally occurring sources (pollution not a result of human activities, such as arsenic from Yellowstone National Park geothermal basin).

The Water Quality Monitoring and Assessment 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 last released in 2018 and is required to be updated every 2 years.[28]

The Water Quality Monitoring and Assessment Program is also responsible for the last (**maroon**) part of the flowchart: determining if water quality standards are attained. Attaining water quality standards is a goal for all of the DEQ's water quality work. For example, the department recently confirmed restored water quality on seven water bodies from 16 pollutants due to restoration activities.[29]

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, the Library Internet Search Application (a water quality planning library), and the EPA's water quality data warehouse (STORET/WQX).

The EPA requires a quality assurance program, which is 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 that "decisions made using these data must be scientifically defensible, able to withstand public scrutiny, and … legally defensible."[30] The quality assurance program guidelines include standards for document formatting, editorial content, use of environmental data, and sampling and analysis activities.

Water Protection Bureau

The Water Protection Bureau protects surface water and ground water against pollution by reviewing potential sources of pollution and issuing permits. The bureau is also responsible for determinations of nondegradation. The bureau is composed of four sections:

- Water Quality Discharge Permit Section
- Watershed Protection Section
- Compliance, Training, and Technical Assistance Section
- Ground Source Water and 318/401 Section

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[27] Montana 2014 Integrated Water Quality Report Summary, 2.
[28] 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)").
[29] Montana 2018 Draft Integrated Water Quality Report, 12.
[30] Montana Department of Environmental Quality, Quality Assurance Program, http://deq.mt.gov/Water/Resources/qaprogram.

Water Quality Discharge Permit Section

Any entity proposing to discharge sewage, industrial waste, or other pollutants into state waters must apply for a discharge permit.[31] Definitions of the terms "state waters" and "pollution" are important.

"State waters" are surface or underground waters of any body of water, irrigation system, or drainage system. State waters do not include:

- ponds or lagoons used for treating, transporting, or impounding pollutants, or
- irrigation waters or land application disposal waters used in a disposal system and not returned to state waters.[32]

"Pollution" is defined as changing the physical, chemical, or biological properties of state waters to exceed water quality standards. The DEQ classifies water bodies based on the beneficial uses that are or may be supported by each water body. The department develops numeric and narrative water quality criteria to protect each of these uses, which may include drinking water, recreation, livestock, or wildlife.[33] Examples of pollutants with numeric water quality criteria include ammonia, selenium, and chromium; examples of narrative water quality criteria are pH and sulfide.

Pollution could come from point sources — an actual conveyance where pollutants are discharged — or from nonpoint sources, that is, from diffuse sources of pollution, such as from rainfall or snowmelt moving over and through the ground. The bureau focuses on point source pollution; another DEQ section focuses on nonpoint sources.

The Water Quality Discharge Permit Section issues permits to discharge to surface water (known as Montana pollutant discharge elimination system, or MPDES, permits). The Ground Source Water and 318/401 Section issues permits for ground water discharges (known as Montana ground water pollution control system, or MGWPCS, permits). The bureau issues an average of 600 discharge permits a year, although this number varies and has ranged as high as 1,500.[34]

Again, the Board of Environmental Review sets rules for issuing these permits, but it is up to the bureau to review applications and to approve, deny, modify, or revoke these permits.

MPDES permits

The bulk of the Water Quality Discharge Permit Section's work is issuing surface water discharge permits. (This is the fourth, or **purple,** part of the flowchart shown earlier.) The purpose of the program is to control point source discharges of wastewater into surface waters. The MPDES is designed to be compatible with the National Pollutant Discharge Elimination System established by the U.S. Environmental Protection Agency pursuant to section 402 of the Clean Water Act.[35]

Permits are designed to protect surface water quality at the point of discharge by applying relevant standards developed by the DEQ. Permits may also address the cumulative effects of pollutants across an entire basin. In these cases, a calculated total maximum daily load is used to determine a stream's pollution "load," which is then used to figure an individual permit's allowable discharge.

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[31] Section 75-5-402, MCA.
[32] Section 75-5-103, MCA.
[33] Ibid.
[34] Aug. 12, 2015, discussion with Montana Department of Environmental Quality staff.
[35] Administrative Rules of Montana 17.30.1301.

Surface water discharge permits include two types — individual and general. An individual permit is site specific to that permit. These permits include major dischargers, such as city wastewater treatment plants and large industrial dischargers. General permits are "preexisting" permits for common activities, such as feedlots, fish farms, suction dredges, sand and gravel pits, domestic sewage treatment lagoons, oil and gas operations, and industrial operations. A general permit is more expedient than an individual one, with application, review, and authorization coming within 30 days.[36] Individual permits are more rigorous than general ones, and the process may last anywhere from 6 months to 2 years. The bureau has 155 individual permit holders and 1,634 general permit holders.[37]

Major individual permit holders include:

- M2Green Redevelopment LLC (Frenchtown Mill site)
- Montana Resources (Butte)
- Bonner Property Development
- Sidney Sugars, Inc.
- Phillips 66 Co. (Billings refinery)
- Cenex Harvest States Cooperatives (Laurel)
- Western Sugar Cooperative (Yellowstone County sugar beet processing facility)
- Montana-Dakota Utilities Co. (Lewis and Clark Station Steam Electric Power Plant, Sidney)
- ExxonMobil Corp. (Billings refinery)
- Decker Coal Co. (Decker West Mine)
- City of Miles City
- City of Hamilton
- City of Lewistown
- City of Whitefish
- City of Laurel
- City of Bigfork
- City of Livingston
- City of Red Lodge
- City of Libby
- City of Glendive
- City of Sidney
- City of Great Falls
- City of Kalispell
- Butte-Silver Bow County
- City of Havre
- City of Billings
- City of Missoula
- City of Bozeman
- City of Deer Lodge
- City of Helena

[36] Montana Department of Environmental Quality, Montana Pollutant Discharge Elimination System (MPDES), http://deq.mt.gov/Water/SurfaceWater/mpdes.
[37] U.S. Environmental Protection Agency, "Enforcement and Compliance History Online," https://echo.epa.gov.

- Western Energy Co. (Rosebud Mine, Colstrip)
- Decker Coal Co. (Decker East Mine)
- Paleo Search Inc. (suction dredge, Lewis and Clark County)
- Columbia Falls Aluminum Co., LLC
- Butte Highlands Joint Venture LLC (Silver Bow County)

A subset of the MPDES permits are storm water permits. Storm water runoff can contain sediment rates that are 10 to 20 times greater than farmland and 1,000 to 2,000 times greater than forest land.[38] The Environmental Protection Agency began to develop rules for storm water runoff in 1990, and the DEQ incorporated these rules in 2003.[39] Storm water discharge permits are mostly issued for construction sites. Storm water permits comprise more than three-quarters of all general permits issued. Operators of these sites must create a storm water pollution prevention plan to protect state waters from pollutants, especially sediment. These plans include various erosion and sediment control measures.

Nondegradation analysis

New pollution dischargers — such as a new treatment plant or a new industrial user — must also complete a nondegradation review. State law requires that existing uses of state waters and a level of water quality to protect those uses must be maintained and protected.[40] The process is most simply described as follows:

> Before a permit is issued, consideration is given to the nondegradation policy. An applicant must complete an Application for Determination of Significance. The DEQ determines if the proposed degradation is significant. If the discharge is considered significant, the applicant must complete an application to degrade state waters. The DEQ coordinates a review of these applications with the permitting process to the maximum extent possible.[41]

New dischargers into high-quality waters must typically meet higher water quality standards — that is, lower pollution limits.

Watershed Protection Section

Watershed management

The Watershed Protection 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 (**blue**) part of the flowchart shown earlier.

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."[42] 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

[38] Montana Department of Environmental Quality, *Storm Water Requirements for Construction Activity* (2010), 1.
[39] Ibid.
[40] Section 75-5-303, MCA.
[41] Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2012), 18.
[42] Section 75-5-103(37), MCA.

standards protecting the most sensitive uses. These calculations factor in such variables as seasonal temperature, flow, and volume.[43]

While TMDLs may be used to write limits into a discharge permit,[44] 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.[45]

Although every identified impaired or threatened water needs a TMDL, not every designated lake or stream has a TMDL developed. Court decisions, legislative actions, and local interest in water quality improvements have 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.[46]

Absent a court order, the statewide TMDL advisory group helps set section priorities.[47] 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 Protection Section to prioritize a TMDL calculation for an entity seeking a discharge permit.

Nonpoint source pollution

The fourth (**purple**) part of the flowchart shown earlier calls for meeting water quality standards through permitting and voluntary measures. As described previously, 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. Federal funds (also known as section 319 funds) allow the state to issue grants to groups interested in implementing projects to reduce nonpoint source pollution.[48] These projects may include education, training, restoration, or protection projects.

Wetland Program

The goal of the Wetland Program is to prevent the net loss of the state's remaining wetlands and to increase the quality and quantity of the state's wetlands. The department developed a Wetland Program Plan in 2011.[49]

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[43] Montana 2014 Integrated Water Quality Report Summary, 2-3.
[44] Known as a "waste load allocation."
[45] Montana Legislative Environmental Policy Office, *A Guide to Montana Water Quality Regulation* (2015), 24.
[46] Montana Department of Environmental Quality, "Montana's TMDL Development Priority Areas," http://deq.mt.gov/Water/SurfaceWater/tmdl/TMDLDevelopmentPriorityAreas.
[47] Section 75-5-702, MCA.
[48] Montana 2018 Draft Integrated Water Quality Report, 6.
[49] Montana Department of Environmental Quality, *Priceless Resources: A Strategic Framework for Wetland and Riparian Area Conservation and Restoration in Montana, 2013-2017* (2011).

Compliance, Training, and Technical Assistance Section

The Compliance, Training, and Technical Assistance Section ensures that permitholders follow the terms, conditions, and stipulations of their discharge permits. This work includes gathering monitoring data and conducting inspections. The department has inspected 546 facilities over the past 5 years.[50]

Many regulated permittees are required to supply monitoring and compliance data. The Compliance, Training, and Technical Assistance Section continually monitors this information, scrutinizing program submissions and activities, updating and maintaining a database of self-reported data, generating technical and analytical reports, notifying permitholders of compliance status, and assisting permitholders and the general public. Some compliance data is available on the EPA's Enforcement and Compliance History Online tool at https://echo.epa.gov.

The Compliance, Training, and Technical Assistance Section also conducts inspections of permitted operations. Inspections are meant to determine compliance with regulations, permit conditions, and other requirements, to verify information, and to verify sampling and monitoring. In some cases, inspectors may be gathering evidence to support enforcement actions or assessing compliance with formal enforcement actions. The DEQ Enforcement Program prosecutes certain violations. Within the last 5 years, 154 facilities faced formal enforcement actions.[51]

The DEQ does not always seek to resolve permit violations through enforcement actions. The Compliance, Training, and Technical Assistance Section is also interested in gaining compliance through cooperative means. According to the DEQ website: "The staff also provide compliance assistance through one-on-one counseling, online resources, guides and trainings to the regulated community to help them understand their requirements and to minimize or prevent violations from occurring at regulated facilities."[52]

Source Ground Water and 318/401 Section

This section is composed of regulatory and voluntary programs, including ground water discharge permits, state section 318 permits for short-term turbidity, and federal section 401 certifications.

Ground water program

Ground water permittees include custom metal ore milling companies, petroleum distribution companies, soil remediation facilities, and agricultural producers. Discharges may occur from tailings ponds, waste treatment and storage ponds, spill cleanup systems, and soil treatment cells. Permits include stipulations for how a discharge source is managed to prevent degradation of state waters. The permits are issued for 5 years. The Compliance, Training, and Technical Assistance Section ensures compliance with the terms of these 89 permits.

Other agencies regulate certain ground water discharges. Ground water discharge (MGWPCS) permits are not issued for the following:

- Oil and gas injection wells regulated by the federal underground injection control program
- Licensed solid waste disposal
- Disposal of normal household waste by individuals on their own property

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[50] U.S. Environmental Protection Agency, "Enforcement and Compliance History Online," https://echo.epa.gov.
[51] Ibid.
[52] Montana Department of Environmental Quality, "Compliance and Technical Support," http://deq.mt.gov/Water/WasteWater/ctss.

- Permitted hazardous waste facilities
- Produced waters and other wells and pits used on oil and gas field operations
- Agricultural irrigation facilities
- Storm water disposal or detention facilities
- Septic systems serving individual residences
- Certain uranium mining
- Permitted strip or underground mines
- Facilities subject to the Major Facilities Siting Act
- Permitted carbon dioxide injection wells[53]

401 certification and 318 authorization

The federal Clean Water Act allows states to "address the aquatic resource impacts of federally issued permits and licenses" by certifying these permits or licenses.[54] A federal agency cannot issue a license or permit allowing pollution discharge until the state grants "401 certification" ("401" refers to the section of the Clean Water Act). An example of a certified federal action is the U.S. Army Corps of Engineers "dredge and fill" permit program, also known as section 404 permits.

Montana's Water Quality Act requires a 318 authorization to allow short-term violation of water quality standards for turbidity.[55] This authorization may be required for construction activities.

Source water protection

The division performs source water assessments to provide water utilities, community governments, and others with information to protect drinking water sources. Doing so may reduce treatment costs and also reduces risks to public health by limiting exposures to contaminated water.[56] An assessment may identify businesses, activities, or land uses that generate, use, store, transport, or dispose of certain contaminants.

ENGINEERING BUREAU

The Engineering Bureau regulates public drinking water, wastewater, and other related sanitation systems. The bureau accomplishes this through technical review of proposed developments and systems, and by licensing and certifications through the Public Water Supply and Subdivision Review Section.

Public Water Supply and Subdivision Review Section

Subdivision review examines small nonpublic or individual water and wastewater systems within a proposed subdivision. Laws related to "sanitation in subdivisions" form the legal basis for the subdivision review.[57] From this, the bureau establishes standards for public and private water supplies, sewage disposal facilities, storm water drainageways, and solid waste disposal.

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[53] Section 75-5-401, MCA.
[54] U.S. Environmental Protection Agency, *Clean Water Act Section 401 Water Quality Certification: A Water Quality Protection Tool for States and Tribes* (2010), 1.
[55] Section 75-5-318, MCA.
[56] Montana 2018 Draft Integrated Water Quality Report, 6.
[57] Title 76, ch. 4, part 1, MCA.

The department may delegate review to a local department or board of health. Counties typically do sanitations review of smaller subdivisions.[58]

This section evaluates subdivisions with parcels smaller than 20 acres, as well as all condominiums, RV parks, and mobile home parks. The section ensures that adequate sanitation facilities can be constructed, operated, and maintained to support each parcel. If so, the department awards a certificate of subdivision approval to a subdivider. State law and administrative rule[59] guide this section's work. Standards depend on the specific facility proposed. The DEQ has developed design manuals to provide standards for wastewater treatment systems, water supply development, and storm drainage systems, including the following:

- Water works (DEQ Circular 1)
- Wastewater facilities (DEQ Circular 2)
- Small water systems (DEQ Circular 3)
- On-site subsurface sewage treatment systems (DEQ Circular 4)
- Subdivision storm drainage (DEQ Circular 8)
- Development of springs for public water systems (DEQ Circular 10)
- Development of springs for individual and shared nonpublic systems (DEQ Circular 11)
- Hauled water cisterns (DEQ Circular 16)
- Cisterns for shared, nonpublic systems (DEQ Circular 17)
- Ground water under the direct influence of surface water (Public Water Supply Circular 5)
- Source water protection delineation (Public Water Supply Circular 6)

The department also offers assistance and tools. The online Subdivision Web Application Tool allows a small developer to explore the process of approval.[60] The section also educates developers and consultants about sanitation standards for subdivisions through conference presentations, meetings with local governments, and webinars.

Public water supply review does not include approval of individual wells or septic systems but instead focuses on larger, public water supply and wastewater systems. A public water system is defined as one providing at least 15 service connections or serving at least 25 people a day for at least 60 days a year. There are further distinctions: "Community water systems" serve the same people year-round in cities, towns, and mobile home parks, and "non-community water systems" serve the public but not the same people year-round.[61] Different design standards apply to a system, depending on size and type.[62] Engineers conduct technical reviews and approve the systems and their operational plans.

State Revolving Fund Section

The Department of Environmental Quality and the Department of Natural Resources and Conservation work together to administer a low-interest loan program to help communities make improvements to water supply and wastewater systems, and

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[58] Local government entities also review all subdivisions to evaluate effects on agriculture, agricultural water user facilities, local services, the natural environment, wildlife and wildlife habitat, and public health and safety. This review is under the authority of the Montana Subdivision and Platting Act, Title 76, ch. 3, MCA.
[59] Administrative Rules of Montana 17.36.
[60] See http://deq.mt.gov/Water/PWSUB/sub.
[61] "Non-community water systems" can be more specifically defined as "non-transient, non-community water systems" for systems that serve the same people for more than 6 months but not year-round, such as a school; and "transient, non-community water systems," which serve the public but not the same individuals for more than 6 months, such as a rest area or a campground.
[62] This includes DEQ circulars 1, 2, 3, 4, 10, 16, and 17 and Public Water Supply circulars 5 and 6. Available at http://deq.mt.gov/Water/Resources/circulars.

to address nonpoint pollution sources. State-issued bonds and EPA grants fund the Drinking Water State Revolving Fund and the Water Pollution Control State Revolving Fund.

Public Water Supply Bureau

The Public Water Supply Bureau ensures regulatory compliance through collecting and monitoring of certain water quality data and offering training and technical assistance. The bureau is composed of three sections or units:

- Field Services Section
- Monitoring and Reporting Section
- Technical Services Section

Field Services Section

The Field Services Section provides a statewide presence for the bureau, with staff located at offices in Billings, Helena, Kalispell, and Missoula. This section conducts sanitary surveys through field visits to public systems. It also offers technical assistance to help system operators maintain regulatory compliance.

The section investigates complaints, which may result in a notice of violation. The section forwards notices of violation to the DEQ's Enforcement Program. The program's primary tool is an "administrative order on consent," which creates a series of steps for a system to meet compliance, although fines may also be levied.

The Field Services Section provides training for system operators, including fall and spring "water schools" in Billings, Bozeman, Helena, and Kalispell.

Monitoring and Reporting Section

The Monitoring and Reporting Section tracks the status of public drinking water systems through a comprehensive database of public drinking water system sampling results (known as the Safe Drinking Water Information System, or SDWIS/FED) and through design and maintenance activities. Public access through the Drinking Water Watch website allows a user to access various information about a public water supply, such as sampling results, violations, and contact information for the system operator.[63] The section also oversees the water sampling at these systems.

[63] Drinking Water Watch, http://sdwisdww.mt.gov:8080/DWW.

The bureau issues an annual compliance report. Montana's 2017 Annual Public System Compliance Report reported the following number of systems with rules violations:

	Public water systems with violations
Exceeded maximum contaminant level	14
Monitoring and reporting violations	1,045
Other violations	259
Treatment technique violations	109

The section must also adapt to changing federal rules,[64] which may tighten standards or add a previously unregulated contaminant.[65] For example, the DEQ must reapply to the EPA for primacy to regulate the "revised total coliform rule."[66] Other examples of federal rules include those for chlorination, disinfection byproducts, ground water, lead and copper, nitrate/nitrite, and public notification.[67]

The Monitoring and Reporting Section also conducts training and provides technical assistance for water system operators on rule compliance.

Technical Services Section

The Technical Services Section provides data management and reporting services, as well as administrative support for other sections within the bureau.

State law requires the DEQ to certify operators of water and wastewater treatment plants and of water distribution systems.[68] An operator must meet experience and education requirements, pass an exam, renew certification annually, and fulfill continuing education requirements.[69]

[64] The Safe Drinking Water Act requires the EPA to review its regulations every 6 years. See www.epa.gov/sdwa.
[65] The EPA regulates more than 90 contaminants. See www.epa.gov/sdwa.
[66] The Board of Environmental Review will consider the bureau's rule package in an upcoming meeting. Interview with Jon Dilliard, Public Water and Subdivisions Bureau, June 9, 2016.
[67] Montana Department of Environmental Quality, "Public Water Supply Laws and Rules," http://deq.mt.gov/Water/PWSUB/pws/lawsrules.
[68] Title 37, ch. 42, part 3, MCA.
[69] Administrative Rules of Montana 17.40.

Fiscal Analysis

Funding for the division comes from a variety of sources, including state general fund, state special revenue, federal funds and grants, and application and annual permit fees (see Figure 1). Because the division was created in 2016, biennial comparisons of appropriations are not possible. The division employs 134.68 full-time equivalent employees.[70]

Audits

Because the Water Quality Division is a recent creation, the Legislative Audit Division (LAD) has not specifically audited the division. However, LAD conducts biennial financial-compliance audits of the Department of Environmental Quality to determine if the 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 five financial compliance audits identified one recommendation related to one of the division's bureaus:

- Implement a procedure to achieve compliance with the fee schedule for storm water permits set in administrative rules.[71]

Other past audits have focused on specific programs within the division.

In 1994, LAD conducted a performance audit: Enforcement of the Water Quality and the Public Water Supply Acts (94P-36). This audit did not focus on permitting or monitoring but recommended other changes to the Water Quality Division of the Department of Health and Environmental Sciences for enforcement of the Water Quality Act.[72]

LAD conducts financial audits of the Drinking Water State Revolving Fund and the Water Pollution Control State Revolving Fund annually. The fund provides low-interest loans to communities for water treatment facilities, which must meet the standards described in this program evaluation and remain in good standing to receive federal loan funds. The DEQ jointly manages the revolving fund with the Department of Natural Resources and Conservation. A review of these audits since 2008 found no direct recommendations addressing the related division's work.

[70] Legislative Fiscal Division, Legislative Fiscal Report 2019 Biennium (2017), C-52.
[71] Legislative Audit Division, *Department of Environmental Quality (12-16)* (2012), 7.
[72] Legislative Audit Division, *Enforcement of the Water Quality and the Public Water Supply Acts (94P-36)* (1994).

FIGURE 1. WATER QUALITY DIVISION BUDGET BY SOURCE (2019 BIENNIUM)

Department of Environmental Quality, 20-Water Quality Division
Funding by Source of Authority

Funds	HB2	Non-Budgeted Proprietary	Statutory Appropriation	Total All Sources	% Total All Funds
01100 General Fund	5,030,589	0	0	5,030,589	15.33 %
02070 Hazardous Waste-CERCLA	172,320	0	0	172,320	1.37 %
02203 DOMA - Energy Audit	0	0	0	0	0.00 %
02204 Public Drinking Water	1,782,927	0	0	1,782,927	14.17 %
02206 Agriculture Monitoring	10,898	0	0	10,898	0.09 %
02223 Wastewater SRF Special Admin	2,557,256	0	0	2,557,256	20.33 %
02278 MPDES Permit Program	5,771,723	0	0	5,771,723	45.88 %
02313 DNRC Grants Plan Prvnt Asst	0	0	0	0	0.00 %
02418 Subdivision Plat Review	1,164,229	0	0	1,164,229	9.25 %
02420 Bd of Cert For W&WW OP	307,548	0	0	307,548	2.44 %
02491 Drinking Water Spec Admin Cost	813,988	0	0	813,988	6.47 %
State Special Total	**$12,580,889**	**$0**	**$0**	**$12,580,889**	**38.35 %**
03007 FY16 604B Grant #C600856416	200,000	0	0	200,000	1.32 %
03010 2015 HB 10 LRITP Projects	0	0	0	0	0.00 %
03013 106 Suppl Monitor Init IV	40,000	0	0	40,000	0.26 %
03070 BLM Water Quality Monitoring	0	0	0	0	0.00 %
03079 Advancing MT Wetland Program	30,063	0	0	30,063	0.20 %
03152 DW14 SRF Grant	170,771	0	0	170,771	1.12 %
03190 Water 106 Monitoring Init.	0	0	0	0	0.00 %
03210 Water 106 Suppl. Monitor	0	0	0	0	0.00 %
03217 Natl Wetland Condition Assess	129,076	0	0	129,076	0.85 %
03245 WPC15 SRF Grant	142,543	0	0	142,543	0.94 %
03262 EPA PPG	5,701,786	0	0	5,701,786	37.53 %
03307 Monitor/Assessment Wetland Prg	100	0	0	100	0.00 %
03311 FY16 NPS Project Grant	100,000	0	0	100,000	0.66 %
03312 FY17 NPS Project Grant	1,522,496	0	0	1,522,496	10.02 %
03409 WPC14 SRF Grant	0	0	0	0	0.00 %
03430 DW SRF FY14 Grant	198,957	0	0	198,957	1.31 %
03436 NPS Staffing & Support	2,000,000	0	0	2,000,000	13.16 %
03440 FY11 NPS Project Grant	0	0	0	0	0.00 %
03444 FY13 NPS Project Grant	0	0	0	0	0.00 %
03457 WPC SRF FY13 Grant	200,000	0	0	200,000	1.32 %
03482 NPS15 Project Grant	773,168	0	0	773,168	5.09 %
03695 DW SRF FY13 Grant	0	0	0	0	0.00 %
03676 Bureau of Land Management	161,488	0	0	161,488	1.06 %
03687 DW15 SRF Grant	1,393,006	0	0	1,393,006	9.17 %
03691 Non Pt Source Staffing/Support	295,966	0	0	295,966	1.95 %
03695 SRF St Tribal Rel Agrmt Grant	160,000	0	0	160,000	1.05 %
03814 EPA Water Quality 205J	200,000	0	0	200,000	1.32 %
03817 Wetland 401 Certification Grnt	0	0	0	0	0.00 %
03952 DW16 SRF Grant	1,454,146	0	0	1,454,146	9.57 %
03953 DW17 SRF Grant	320,000	0	0	320,000	2.11 %
Federal Special Total	**$15,193,566**	**$0**	**$0**	**$15,193,566**	**46.31 %**
Proprietary Total	**$0**	**$0**	**$0**	**$0**	**0.00 %**
Total All Funds	**$32,805,044**	**$0**	**$0**	**$32,805,044**	

Source: Montana Legislative Fiscal Division.
Note: This figure does not reflect actions during the November 2017 special legislative session or effects of Senate Bill 261 (2017).