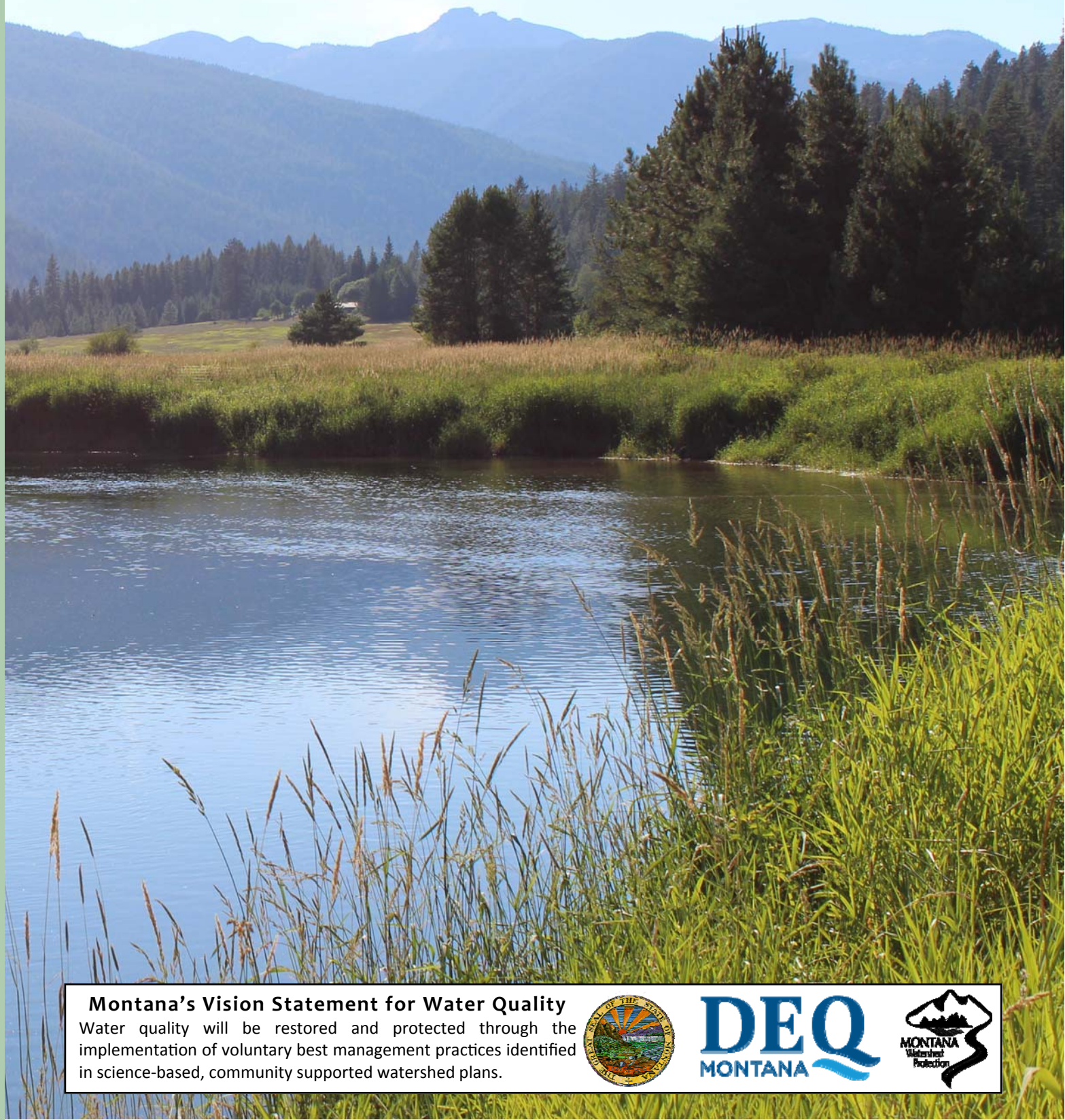
MONTANA

Nonpoint Source Management Program

2014 Annual Report



Montana's Vision Statement for Water Quality

Water quality will be restored and protected through the implementation of voluntary best management practices identified in science-based, community supported watershed plans.

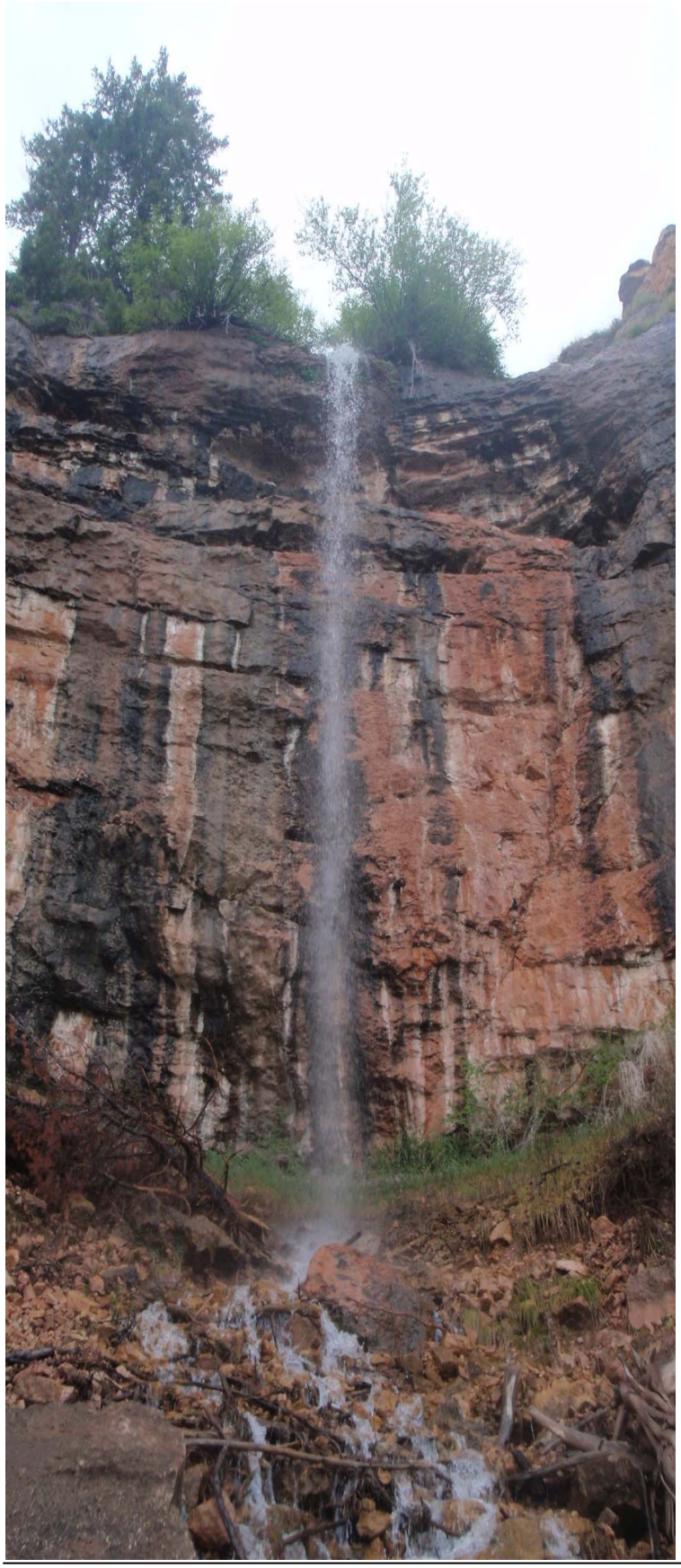


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Table of Contents

Highlights from the 2014 NPS Program		1
Implementation of the Montana Nonpoint Source Management Plan		2
Water Quality Planning Bureau Highlights		3
Water Quality Standards Section		3
Water Quality Monitoring and Assessment Section		4
Watershed Management Section		5
Watershed Protection Section		6
Information Management and Technical Services Section		10
Quality Assurance and Quality Control Section		11
Partners and Highlights		13
Volunteer Monitoring Partnership		13
Montana Watershed Coordination Council		14
Montana Association of Conservation Districts		15
Montana Wetlands Council		16
Looking Forward		18
Appendices		19
Appendix A	Water Quality Planning Bureau Integrated Approach	19
Appendix B	Montana Nonpoint Source Management Program 5-Year Goals and Action Plan	20
Appendix C	Fiscal Year 2014 Section 319 Project Awards	27
Appendix D	Section 319 Projects Closed in 2014	28
Appendix E	Section 319 Mini-Grant Projects in 2014	29
Appendix F	Volunteer Monitoring Lab Analysis Support Grants in 2014	29
Appendix G	Watershed Restoration Plan (WRP) Status	31
Appendix H	Water Quality Planning Bureau Organizational Chart	32

Nonpoint Source Management Program 2014 Annual Report

The purpose of the Montana Nonpoint Source (NPS) Management Program Annual Report is to inform the public about annual progress in fulfilling the goals of the NPS Management Plan. This report also partially satisfies the requirements of Section 319 of the federal Clean Water Act, which requires states to: 1) assess waterbodies for NPS pollution effects, 2) develop programs to manage those effects, 3) implement those programs, and 4) report on NPS program implementation to the public and to the U.S. Environmental Protection Agency (EPA).

Highlights from the 2014 Nonpoint Source Management Program

Goal: Provide support and promote watershed groups

In 2014 the Water Quality Planning Bureau staff supported the hiring of an Executive Director for the Montana Watershed Coordination Council (MWCC) and continued to provide organizational support. MWCC is now an IRS 501(c)(3) educational nonprofit and several DEQ staff served on the Board of Directors in 2014. With the director and a consultant, the Board developed a strategic plan to lead this growing statewide organization in uniting and supporting Montana's watershed communities to promote healthy and productive landscapes.

Goal: Send a nutrient standards package to the Board of Environmental Review

In February 2014 DEQ proposed to the Board of Environmental Review (BER) that the numeric nutrient criteria for streams and some rivers be adopted as standards. In August 2014 the BER adopted these standards and implementation procedures.

Goal: Revise Section 319 Reporting Guidance for contractors in Montana

In 2014 the Watershed Protection Section developed guidance on load reduction reporting and photo point documentation for section 319 contracts. Both documents were a result of requests by Section 319 project sponsors for additional information that would support EPA-required reporting on project effectiveness. The guidance is available on Montana's nonpoint source wiki site: http://montananps319grants.pbworks.com/w/page/21640327/319%20Projects%20Home

Goal: Continue to develop and implement watershed-based TMDLs

The EPA approved 225 TMDLs completed in 15 project areas in Montana. By the end of 2014 the Watershed Protection Section and EPA met the terms of the negotiated settlement *Friends of the Wild Swan, et al* in the 1997 TMDL lawsuit. In 2014 the Watershed Protection Section managed nearly 50 active Section 319 contracts that implemented the state's NPS Management Plan and approved TMDLs.

Implementing the Montana Nonpoint Source Management Plan

by the Water Quality Planning Bureau and Partners

The watershed planning approach seeks to involve all stakeholders in conserving and protecting water resources through communication, cooperation, and consensus. By engaging in the watershed approach, DEQ, watershed groups, conservation districts, agencies, tribes, academia, and non-governmental organizations can effectively increase public understanding and participation in water quality protection and nonpoint source issues.

DEQ's Water Quality Planning Bureau (WQPB) houses the Montana NPS Management Program. WQPB's mission is to assure that water quality is maintained and improved so that state waters can support their beneficial uses. This is accomplished through an approach that integrates water quality standards development, monitoring and assessment, and development and implementation of water quality improvement plans and TMDLs (Appendix A).

This Annual Report highlights important and notable actions taken to achieve the NPS Plan's 5-year goals in three categories: Resource, Policy, and Education and Outreach (Appendix B). The highlighted activities promote collaboration, foster water resource awareness, and protect and improve water quality in Montana. Projects were funded with Section 319 grants in 2014 and were implemented by WQPB, interagency councils, watershed groups, and other agencies and organizations.

Montana Department of Environmental Quality
Water Quality Planning Bureau

Water Quality Standards

The Water Quality Standards Section (WQS) develops criteria to identify the level of water quality necessary to protect the beneficial uses of stream, river, lake, and groundwater resources. The NPS Program seeks to protect and restore these beneficial uses, including drinking water, recreation, and fish and aquatic life. Unlike the other WQPB sections, WQS does not receive Section 319 funding; however, WQS's work is fundamental to the NPS Management Program in Montana.

For the past 12 years, WQS has been working to develop numeric nutrient water quality standards and implementation procedures for Montana streams. In 2014 WQS completed this effort by proposing to the Board of Environmental Review (BER) that numeric nutrient standards be adopted for streams and some large river segments. In August 2014 the BER adopted these rules. At the same time, DEQ adopted nutrient standards variance rules which allow for the gradual attainment of the standards over the next 20 years.

In 2014 WQS has worked toward completing several projects to derive numeric nutrient criteria and standards. First, data collection in the upper Yellowstone River (Livingston to the confluence of the Big Horn River) has been completed and will be used to derive numeric nutrient criteria; we anticipate a report in 2015. Second, data collection for the Missouri River from Toston Dam to Canyon Ferry Lake was completed in 2013, and a report on this effort will be available at the end of 2016. Third, a final report for the three-year (2009-2011) nutrient-addition field study carried out in Carter County should be available in 2015. And fourth, in 2013 a nutrient-diffusing substrate study was undertaken in the upper Missouri River above Canyon Ferry to aid in the development of model-based nutrient standards for that segment of the river. The final report on the results was completed in late 2014.

Three technical projects are planned for 2015: (1) continue a multi-year project initiated in 2013 to study a nutrient-related water quality parameter (dissolved oxygen) in prairie streams; (2) collect data in the middle Missouri River (Craig to Loma) to derive nutrient criteria using a computer model initiated in 2014; (3) begin data collection for a Canyon Ferry nutrient model; and (4) evaluate prototype facultative lagoon technologies to determine which low-cost technologies and best management practices can be applied to enhance lagoon treatment of ammonia, total nitrogen, and total phosphorus.

Over the past several years, WQS has been extensively reviewing criteria, including metals, ammonia, and salts. This review has identified areas where additional research and implementation strategies will be investigated in 2015.

This section also continues to re-evaluate 184 DEQ-identified reference sites across the state to further refine and verify the accuracy of these sites. This project will take several years to complete.

Numeric Nutrient Standards Package

In 2001 DEQ began developing statewide numeric nutrient standards that protect water quality from the effects of excess nitrogen and phosphorus. Recognizing that the standards would prove difficult to immediately implement, DEQ reached out to partners and stakeholders to explore gradual implementation. In 2009 a Nutrient Work Group was established that comprises industries (forestry, oil and gas, railroad, mining), large and small municipalities, wastewater engineers, environmental advocacy groups, and public infrastructure financing agencies. The collaborative effort of DEQ and its partners and stakeholders resulted in a set of variance rules that outlines how these nutrient standards will be met over time. The resulting nutrient standards rulemaking package; criteria and variances, were proposed to the Board of Environmental Review and adopted in August 2014.

Water Quality Monitoring and Assessment

The Water Quality Monitoring and Assessment Section (WQMAS) monitors water quality conditions and trends statewide and assesses sources and severity of pollution problems by operating statewide water quality monitoring networks, inventorying pollution sources, and identifying impaired waterbodies.

This section provided monitoring and assessment support to many TMDL projects, which were required to be completed by 2014 as part of a consent decree. This endeavor included more than 200 waterbodies and at least 800 pollutant–waterbody combinations. And, to accomplish a portion of the TMDL lawsuit requirement, monitoring and sample summaries were completed for mercury, PCBs, nutrients, temperature, and sediment conditions on a number of waterbodies in the Flathead watershed.

During 2014 WQMAS monitored water quality in the Madison, Beaverhead, and Musselshell watersheds. Sediment monitoring was completed at 20 sites on tributaries to the Madison River. The findings will provide assessment information for the TMDL program to develop loads beyond 2014. Nutrient, metals, and biological sampling occurred on 20 stream segments in the Beaverhead Watershed, where updated assessments will occur in conjunction with a second phase of TMDL planning. Initial project planning efforts have begun for a risk-based watershed assessment of the Musselshell watershed and will include data compilation, stakeholder outreach, and field reconnaissance.

Section staff provided training to volunteers in the Madison, Deep Creek, and Musselshell watersheds on various monitoring techniques, including proper use of field equipment. Staff also provided input on monitoring design, methods, field manual preparation, and field training in these watersheds for WQPB and other DEQ staff as well as for general stakeholders.

A new vision and program plan for the statewide status and trend monitoring program is being constructed. The new design involves working at different scales to assess status and trends in state water quality conditions and includes these components:

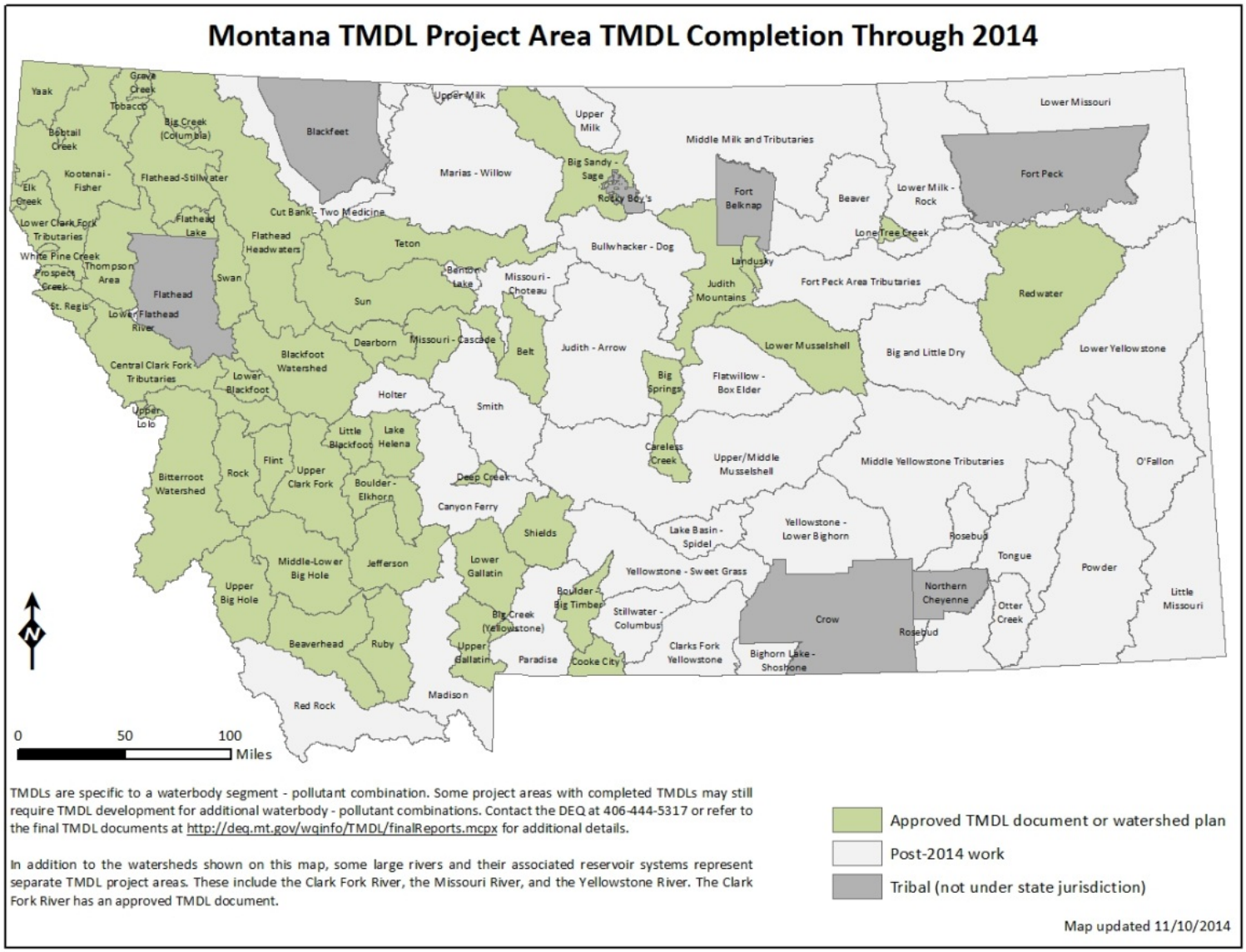
- Watershed-scale, fixed station monitoring and condition reporting to coincide with watershed assessment scale projects (Musselshell or Red Rocks)
- Basin-scale projects (Clark Fork or Yellowstone)
- Other fixed-stations as needed
- Reporting on EPA's randomized National Aquatic Resource Survey Data in Montana's Integrated Report (statewide status)

Because of the emergence of updated oil and gas production technologies in eastern Montana, WQMAS applied for and received a grant under the Montana DNRC Reclamation and Development Grants Program to investigate ambient baseline groundwater conditions in areas where hydraulic fracturing for oil and gas is taking place. In areas of nonconventional oil and gas extraction, initial planning for groundwater monitoring is underway, and the project will continue into 2015. This work was contracted to the Montana Bureau of Mines and Geology during 2014. WQMAS continues to monitor surface waters in 13 small watersheds where oil and natural gas reserves are being developed.

Watershed Management

The Watershed Management Section (WMS) develops Total Maximum Daily Loads (TMDLs) for waters on Montana's 303(d) list of impaired waters. A TMDL refers to the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL is sometimes expressed as a reduction in pollutant loading necessary to achieve water quality standards. TMDL documents in Montana typically include the framework for a restoration strategy, including implementation and monitoring recommendations. TMDLs are essential for planning watershed restoration activities to ensure the most cost-effective best management practices are developed to improve water quality. TMDLs are developed at a watershed scale to encompass the entire area that contributes a pollutant to a stream. TMDL project areas were created throughout the state to group multiple waterbodies with similar impairment causes.

During the past decade, WMS focused TMDL efforts in western Montana to address a consent decree associated with a TMDL lawsuit with a December 2014 deadline. DEQ, in coordination with EPA, completed all TMDLs required by the lawsuit (see map for project areas with completed TMDLs).



In 2014 EPA approved 225 TMDLs completed in 15 project areas in Montana (Little Blackfoot, Upper Clark Fork, Clark Fork-Silver Bow, Kootenai-Fisher, Yaak, Thompson, Central Clark Fork, Tobacco, Lower Gallatin, Beaverhead, Jefferson, Blackfoot, White Pine, Bitterroot, and Flathead-Stillwater). The following table shows a breakout of the approved TMDLs and is arranged by project area and pollutant group:

Project Area	Sediment	Metals	Nutrients	Temperature	Total
Beaverhead-Jefferson Rivers	-	-	-	2	**2**
Bitterroot	-	2	16	1	**19**
Blackfoot	2	5	0	2	**9**
Central Clark Fork Tributaries	10	-	10	3	**23**
Clark Fork - Silver Bow Creek	-	40	-	-	**40**
Flathead - Stillwater	7	-	12	4	**23**
Jefferson Metals	-	14	-	-	**14**
Kootenai - Fisher	4	12	3	1	**20**
Little Blackfoot Addendum	-	10	-	-	**10**
Lower Gallatin	-	-	2	-	**2**
Thompson	9	5	14	2	**30**
Tobacco	-	-	2	1	**3**
Upper Clark Fork Phase 2	4	-	21	-	**25**
Upper Clark Fork Tributaries	2	1	-	-	**3**
White Pine Creek Temperature	-	-	-	1	**1**
Yaak Nutrients	-	-	1	-	**1**
Total TMDLs	**38**	**89**	**81**	**17**	**225**

In 2014 WMS collected source assessment data for TMDL development in the Madison and Beaverhead project areas, with plans to collect data in several watersheds, including the Musselshell and Beaverhead in the 2015 field season.

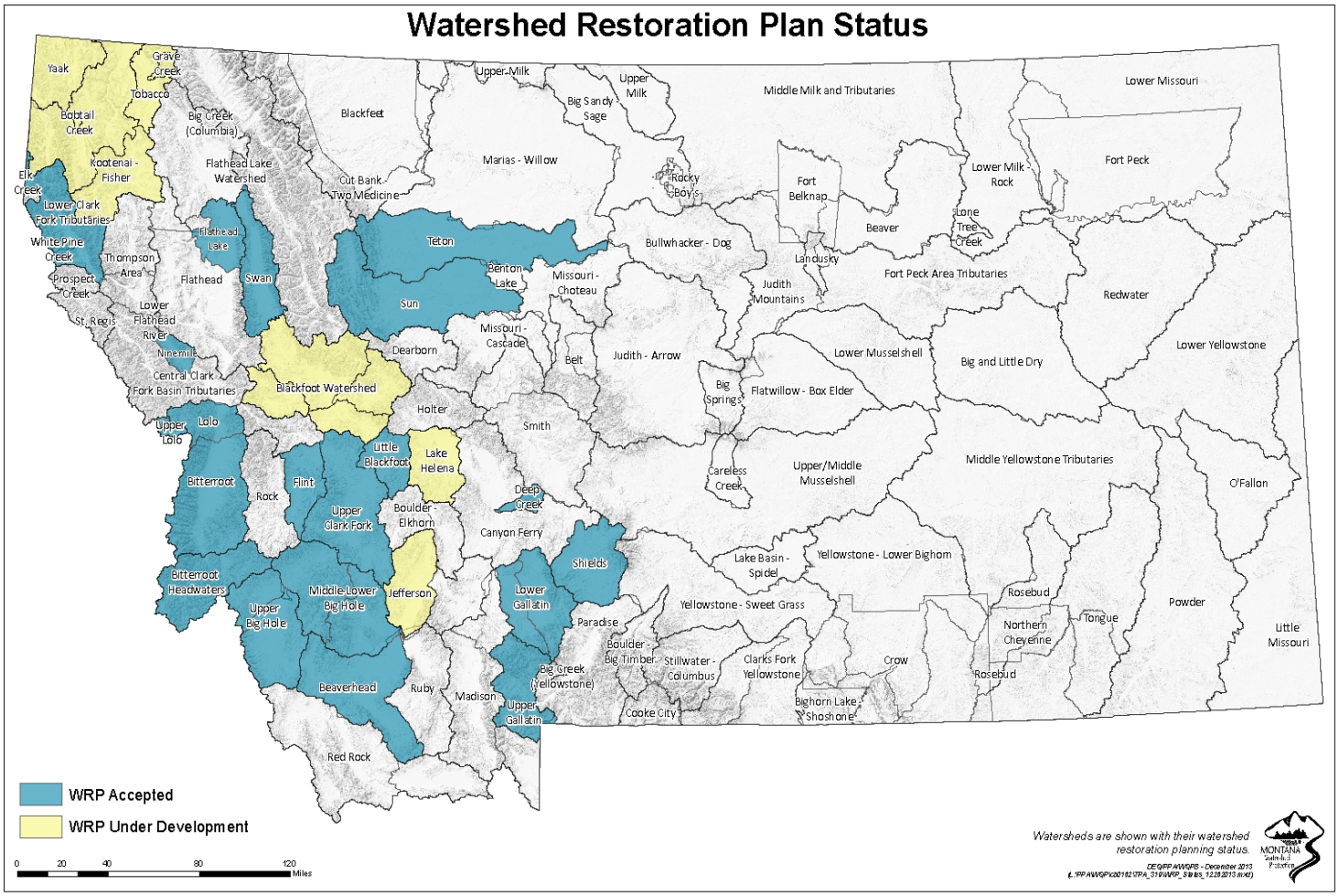
Watershed Protection

The Watershed Protection Section (WPS) works to protect and restore water quality from the effects of nonpoint source (NPS) pollution. NPS pollution is the state's single largest source of water quality impairment. Unlike pollution from industrial and sewage treatment plants (point sources), NPS pollution comes from many widespread sources and can be generated by most land-use activities. NPS pollution is created when runoff water moves over and through the ground, delivering pollutants to lakes, rivers, wetlands, and groundwater. Common NPS pollutants include sediment, nutrients, heavy metals, pesticides, pathogens, oils, and salts.

Water Quality Restoration

WPS receives federal Clean Water Act (CWA) Section 319 funding to address NPS water quality problems in Montana. Each year EPA awards a Section 319 grant to WPS to fund water quality restoration projects. WPS solicits project proposals from local watershed groups, conservation districts, and other organizations to address NPS pollution problems. Projects are selected by WPS with the support and guidance of the Water Activities Work Group of the Montana Watershed Coordination Council and the Agency Review Panel.

In October 2014 WPS completed and closed out the fiscal year 2009 Section 319 projects grant from EPA. This grant ($1,200,000) allowed DEQ to support 27 NPS projects with local sponsors throughout Montana between 2009 and 2014. In 2014 WPS also closed out the state fiscal year 2013 Section 319 Program grant (federal = $1,171,776; state match = $781,183).



In 2014 DEQ awarded $843,650 in Section 319 NPS funding to local projects, funding six watershed restoration and two education and outreach projects (Appendix C). Non-federal in-kind match for these projects totaled $968,757. WPS continued to use electronic application forms for the fiscal year 2014 Section 319 project proposals. These forms have greatly reduced the amount of time necessary to complete the application process for both applicants and reviewers.

During 2014 WPS managed nearly 50 open contracts that implemented the state's NPS Management Plan. WPS closed 18 Section 319 contracts in 2014 and expects to close six more by mid-February 2014 (i.e., contracts that expired in December 2014 with final reports due within 45 days). See Appendix D for a complete list of contracts closed in 2014.

Beginning in July 2010, DEQ contracted the Soil and Water Conservation Districts of Montana, Inc. (SWCDMI) to manage the Section 319 Mini-Grants Program. Through this program, up to $2,000 per project is available to support local groups engaged in water quality and NPS pollution education efforts. SWCDMI works with the Montana Watershed Coordination Council's Education and Outreach Committee to review applications. SWCDMI awarded five mini-grants in March and another three mini-grants in October, for a total of $14,115 awarded in 2014. For a complete list of mini-grants awarded in 2014 see Appendix E.

Watershed Planning

WPS continued working with watershed groups to develop Watershed Restoration Plans (WRPs). The NPS program has funded 24 groups to develop WRPs. In 2014 WQPB accepted WRPs for the Beaverhead, Bitterroot, Blackfoot, Deep Creek, Flathead Lake, Flint Creek, Little Blackfoot, and Lower Gallatin watersheds and provided comment on multiple draft WRPs. Appendix G includes a complete list of WRP efforts. WRPs are an important planning document for groups doing on-the-ground watershed restoration and must contain nine elements specified by EPA:

1. An identification of the causes and sources of water quality impairment.
2. An estimate of the load reductions and management measures necessary to meet standards.

3. A description of the NPS management measures that will need to be implemented.
4. An estimate of the amounts of technical and financial assistance needed.
5. An information/education component.
6. A schedule for implementing the NPS management measures.
7. A description of interim measurable milestones.
8. A set of criteria for determining whether loading reductions are being achieved over time.
9. A monitoring component to evaluate the effectiveness of implementation efforts over time.

Supporting Our Partners

WPS provided technical support to Montana Department of Natural Resources and Conservation (DNRC) efforts to update the State Water Plan. Traditionally, the State Water Plan has focused on water quantity and efforts to meet current and future demand. However, during scoping meetings held across the state, citizens and other stakeholders repeatedly brought up the connection between quantity and quality. DEQ representatives attended most of the meetings, providing information on how changes in water quantity (i.e., streamflow) influence water quality and overall watershed health.

WPS also participated as an observer on grant application review teams for DNRC and the Montana Department of Fish, Wildlife & Parks. In each instance, DEQ provided guidance on the potential effects of proposed best management practices on NPS pollution. DEQ also worked with the USDA Natural Resources Conservation Service (NRCS) to select a watershed for National Water Quality Initiative funding. The Deep Creek watershed outside of Townsend was selected and 319 and NRCS funds are now being directed to the watershed to address sediment and temperature concerns.

In 2014 WPS worked with the U.S. Forest Service's (USFS) Northern Region office to plan and hold the annual DEQ–Forest Service coordination meeting in Missoula. Topics at the April meeting included regional and forest-specific activities, USFS travel management planning, TMDL planning efforts, assessment procedures, monitoring activities, using TMDL Implementation Evaluation documents, and opportunities for integrating processes among agencies for prioritizing watershed protection.

Information Management and Technical Services

The Information Management and Technical Services (IMTS) Section develops and manages science and business-related information systems and provides technical support for the Water Quality Planning Bureau, including the Nonpoint Source Program. IMTS also provides project management, coordinates agency-bureau IT needs, mentors other state environmental agencies in managing data, and supports water quality/watershed modeling to develop TMDLs and water quality standards. IMTS is divided into the Data Management Group and the Modeling Group.

IMTS Data Management manages and administers nine relational databases and information management applications. These databases support the Clean Water Act (CWA) section 305(b) water quality assessments and 303(d) impaired water listing decisions, water quality metric data, contracts, bibliographic references, and an inventory of monitoring equipment. IMTS publishes online the state's biennial water quality Integrated Report, solicits public comments on draft reports and documents, and enables water quality library queries. It also provides administrative support for WQPB's wiki sites maintained for the Section 319, TMDL, and water quality standards programs.

During 2014 the IMTS Data Management Group began the process of upgrading the EQuIS data management system to version 6 and assisted DEQ's Remediation Division and Coal Program in implementing EQuIS for their metric data management; established a contract for WARD Phase 3b development; managed data collection on Squirrel Creek in the Tongue Basin in support of TMDL development; participated on EPA national workgroups for the ATTAINS data system

redesign (used for Integrated Reporting); finalized and published Montana's 2014 Integrated Report and became the first state, tribe, or territory to submit its Integrated Report assessment and geospatial data electronically to EPA using the national Exchange Network; and initiated its 2016 integrated reporting cycle with the biennial call for data.

IMTS Data Management also processed 127 water quality data packets (as of November 6, 2014) from 48 unique monitoring projects into its water quality database – Montana EQuIS (Environmental Quality Information System) for WQX (MT-eWQX). Of these 127 packets, 116 were new data inserts and 11 were data updates (revisions or corrections). These data loads were transmitted to the national Water Quality Exchange database via the Exchange Network.

Other activities of the Data Management Group include: providing technical support, guidance, and mentoring for DEQ programs on implementing an environmental metric data management system (EQuIS); participating on the Montana Hydrology Workgroup that oversees the state implementation of the USGS National Hydrography Dataset; finalizing an agency Standard Operating Procedures (SOPs) for Water, Soil, & Biological Sampling and Environmental Data Management & Reporting for DEQ-led emergency responses under the national Incident Command System; developing a water-use classification map of Montana's water-use classification using the state's 1:24,000 scale hydrography dataset; and providing application development assistance and testing for a new agency Public Comment Submittal Application.

The IMTS Modeling Group supported modeling for TMDL planning in Otter Creek (salinity), Flathead basin (nutrients), and the Powder River Basin (salinity), as well as analysis of onsite wastewater (septic) system loading to groundwater for various projects. Model support was also provided for water quality standards (nutrient criteria) development on the middle Missouri and upper Yellowstone Rivers. Other work included: participating in the Elk River (Canada) Technical Advisory Committee as Montana representative for Teck Coal, Inc., coal mine area management plan development (Lake Koocanusa basin in US & Canada); assisting with review of the technical impracticability analysis and stormwater modeling for the Butte Priority Soils federal superfund site; calibrating the Soil and Water Assessment Tool (SWAT) Biozone model; developing an initial salt modeling algorithm for the SWAT model in cooperation with the Blackland Research & Extension Center of Texas A&M University (authors of the SWAT model); and presenting the Method for Estimating Attenuation of Nutrients from Septic Systems (MEANSS) model for septic effects analysis at the annual conference of the Montana chapter of the American Water Resources Association.

Quality Assurance and Quality Control

The Quality Assurance and Quality Control Section (QAQC) supports the Nonpoint Source Program, WQPB and contractors by developing and describing the management and technical procedures that will assure the quality of environmental information used to support decisions. This is referred to as a "quality system." It provides WQPB with a practical framework for managing the quality of activities, resulting in environmental determinations and controls.

In 2009 the Montana Statewide Water Quality Monitoring and Assessment Strategy was delivered to EPA. The document provides a strategy for monitoring and assessment activities in order to report on the condition of the state's waters, to refine water quality standards, to develop Total Maximum Daily Loads (TMDLs), to support adaptive management TMDLs, to determine the effectiveness of implementation strategies, and to provide support for citizen volunteer monitoring. As the monitoring strategy is implemented, numerous project-specific quality assurance project plans (QAPPs) and sampling and analysis plans (SAPs) need to be developed, which require approval by the QAQC program. In addition, QAQC oversees the development of new assessment methods and the evaluation of current methods as well as the review the Bureau's Standard Operating Procedures.

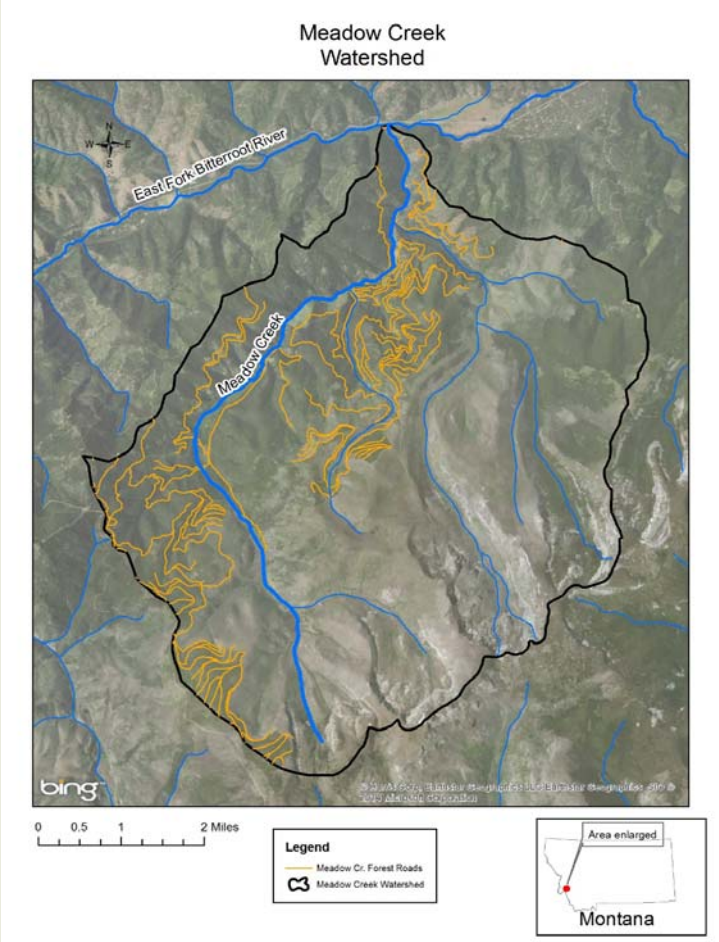
DEQ receives data from: local, state, and federal agencies; volunteer monitors; nonprofit organizations; private entities; and other groups or individuals who have an interest in water quality. This data must be defensible and its quality known before it is considered for use in DEQ Water Quality Assessments and other projects that require a high level of rigor. As DEQ solicits data, minimum quality requirements must be established for planning documentation (QAPPs and/or SAPs) in order for data to be considered for assessment purposes. QAQC may review this external data to ensure it meets the requirements for DEQ's use.

In 2014 QAQC approved four SAPs focusing on monitoring Section 319 restoration activities for effectiveness and pollutant-load reductions, including: the Cottonwood Creek Project Restoration Monitoring SAP; Helena Valley Nonpoint Source Assessment SAP; Lake Helena Watershed Prickly Pear Restoration SAP; and South Fork Poorman Creek Restoration Monitoring SAP. QAQC also collaborated with Sun River Watershed Group, Teton River Watershed Group, Water and Environmental Technologies, Blue Water Task Force, Greater Gallatin Watershed Group, and Madison Watershed Group to develop six SAPs under the volunteer monitoring grant program.

All volunteer groups that receive funding through the Section 319 program are required to submit an SAP before monitoring. A General QAPP was developed by the Montana State University Water Quality Program, Montana Watercourse, and DEQ to provide general data quality guidelines and a basic framework for training members of a volunteer monitoring group. Project-specific QAPPs are also developed for particular monitoring areas with specific goals and objectives. The goal of a volunteer monitoring group may be to evaluate the effectiveness of implementation efforts or trend analysis. Volunteer monitoring groups are encouraged to develop clear and thorough QAPPs that outline the goals and objectives of the project and document the design of the stream monitoring program, in turn increasing data validity.

QAQC monitors collaboratively with the Bureau of Land Management, USFS, U.S. Geological Survey, University of Montana, and a number of conservation districts, watershed groups, and non-profit organizations. These partnerships are important because they are often maintained from TMDL development through the implementation of projects funded by Section 319 grants administered by the Watershed Protection Section.

Success Story: Meadow Creek De-Listing



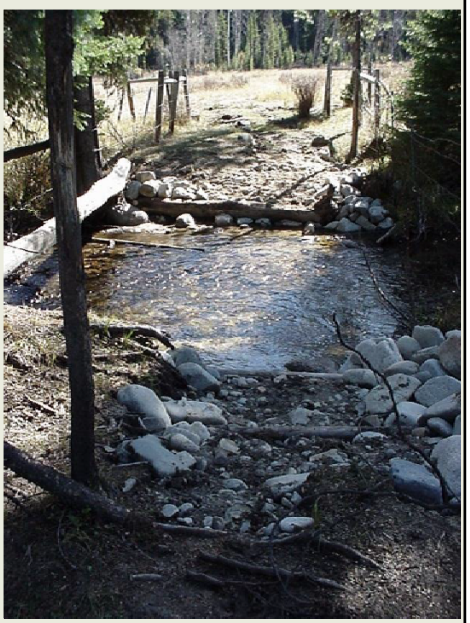
Meadow Creek is a headwater stream that originates high up in the Bitterroot Mountains. It flows north for 10 miles before joining the East Fork of the Bitterroot River and is home to bull trout and westslope cutthroat trout. The Meadow Creek watershed is 32 square miles and is contained entirely within the Bitterroot National Forest (BNF). Forestry practices, grazing in the riparian area, and road construction have occurred for many years in the Meadow Creek watershed. These actions degraded land and water quality in and around Meadow Creek. In 1996 DEQ added Meadow Creek to the state's Clean Water Act section 303(d) list of impaired waters for not supporting its coldwater fishery beneficial use because of sediment/siltation and alteration in streamside vegetation caused by agriculture, rangeland, and road construction.

This listing prompted BNF to take action. Starting in the late 1990s, BNF began to apply best management practices to its grazing management, forestry practices, and road maintenance. To protect streambanks from being trampled by livestock, nearly a mile of fencing was installed, stream crossings and livestock fords were hardened. A road crossing inventory was initiated in 2008 which helped guide restoration work. Roads were upgraded, including the reconstruction of eight miles of road that closely paralleled Meadow Creek. This improved drainage and reduced sediment loading to the stream. Two culverts were replaced by bridges, and an undersized culvert was replaced with one large enough to withstand a 100-year flood.

Through the hard work and dedication of BNF and its partners, water quality began to significantly improve. In 2013 DEQ reassessed the watershed to determine whether Meadow Creek was meeting its beneficial uses. Habitat and sediment sampling were conducted, and scientists determined that Meadow Creek was meeting its beneficial uses, prompting the state to remove it from the impaired waters list in 2014.

Undersized culvert that contributed sediment to the stream and impeded fish passage

Bridge that was constructed to replace the culvert



Newly constructed hardened ford

Partners and Highlights

The Water Quality Planning Bureau has met NPS program goals and successfully maintained the viability of watershed groups across the state by supporting and coordinating with organizations such as the Montana Watershed Coordination Council, Montana Watercourse, Montana State University Extension Water Quality, Montana Association of Conservation Districts, Montana Wetland Council, and various federal and Montana state agencies.

Volunteer Monitoring Partnership

DEQ's Water Quality Planning Bureau (WQPB) partners with a number of organizations, including Montana State University Extension Water Quality (MSUEWQ), Montana Watershed Coordination Council (MWCC), and Montana Watercourse to promote volunteer monitoring efforts across the state.

WQPB staff and partners provide technical and financial support to watershed groups throughout the state to develop monitoring plans and conduct water quality monitoring. In 2014 some of these efforts focused on developing long-term goals and strategies, sampling and analysis plans (SAPs), and monitoring protocols for volunteer monitoring groups in the Blackfoot, Deep Creek, Lake Helena, Madison, Musselshell, and Ruby watersheds. MSUEWQ piloted the Virtual Observatory and Ecological Informatics System to house volunteer monitoring data and receive feedback from volunteers.

The volunteer monitoring lab analysis support program was initiated in 2010 and continues to provide financial assistance to groups to help cover the cost for laboratory sample analysis associated with water quality monitoring projects related to nonpoint source pollution. This program was restructured in 2013 to establish application deadlines, improve SAP preparation, and standardize reporting requirements. In February we held a pre-proposal webinar with Q&A sessions and reference documents to provide information and support to groups. A review panel composed of MWCC Monitoring Work Group members reviewed QAPP/SAP drafts, and QAPP/SAP approval was required before funding was distributed in May. This new approach is the result of survey feedback provided by volunteers during a session at MWCC's 2012 Summer Forum. This process has improved program efficiency and reliability of the data collected. Participation has continued to grow since it was initiated.

This year the Blue Water Task Force, Madison Stream Team, Sun River Monitoring Project, Teton River Monitoring Project, Gallatin Stream Team, and Little Bitterroot Lake Association received DEQ support for volunteer monitoring lab analysis. All of these groups have built a solid foundation by participating in the restructured program, meeting the timeline for proposals, which serves to encourage project planning before spring runoff. Each of the groups has been thorough in its QA/QC efforts, ensuring reliable data that will help meet project objectives and DEQ standards. The volunteer monitoring lab support program continued efforts to improve outreach to eligible groups, develop more comprehensive documentation on the WPS Wiki site, refine the SAP template to meet the needs of DEQ and volunteer monitoring groups, and streamline the required deliverables for participating in the program.

The volunteer monitoring partnership continues to explore new ways to engage the public in meaningful data collection to meet the goals of DEQ and watershed groups across the state. MWCC and MSUEWQ hosted Spring Training in May, which focused on effectiveness monitoring of restoration projects. In September MSUEWQ organized another volunteer monitoring training to explore ways to build upon the success of existing volunteer monitoring efforts. The event provided an opportunity for volunteers to discuss ways that the program could better meet their needs. It included field training in DEQ sediment and habitat assessment methodology and a discussion of ways that volunteers can apply these methods. MSUEWQ has also released short online films to address common issues for completing water quality monitoring tasks.

Volunteer monitoring plays a critical role in linking communities with water quality issues and building important datasets. The funding helps support volunteers to monitor for a wide variety of goals to improve understanding and managing water resources. Future efforts will seek to support decisions for listing and delisting impaired waterbodies, assessing sources and load allocations for TMDL development, and developing watershed-based restoration plans that will help watershed groups identify and prioritize sources of nonpoint source pollution that can be addressed through restoration.

MWCC Spring Training 2014 Participants

Montana Watershed Coordination Council

The Montana Watershed Coordination Council (MWCC) is a non-governmental organization working statewide to support information and education and to develop capacity for local watershed work. MWCC's mission is uniting and supporting Montana's watershed communities to promote healthy and productive landscapes.

In January MWCC hosted its Annual General Meeting, which featured plans for the year and guest presentations, including words from DNRC Director John Tubbs about the importance of watershed work in Montana. The watershed community warmly welcomed two new Council personnel, Executive Director Kristin Sewak and Big Sky Watershed Corps Member Taylor Fridrich.

Through the Big Sky Watershed Corps partnership, 14 AmeriCorps members were deployed throughout Montana from January through November to serve local efforts, which provided groups with nearly 24,000 hours of service. Members work on projects such as water monitoring, volunteer generation, and education. The program is a partnership of MWCC, the Montana Conservation Corps, and the Montana Association of Conservation Districts (MACD).

In May MWCC hosted the annual Spring Training, a multi-day course for watershed coordinators. This year's training was Monitoring for Project Effectiveness, provided by Adam Sigler and Katie Kaylor of MSU Extension Water Quality. Twenty-four attendees walked away with additional knowledge and skills for success.

Working with support from DEQ funds, MWCC developed outreach tools designed to disseminate nonpoint source and other watershed information across the state, including the weekly Watershed News e-newsletter, with more than 700 subscribers.

With support from BLM, MWCC developed a structural and fundraising strategy for the Musselshell Watershed Coalition, located in Roundup. Through three planning sessions and other meetings, the strategy included plans for a board of directors and an increase of the coordinator's time. Fitting foundation funds, federal and state grant sources, and fundraising ideas were some of the components.

Other highlights of MWCC's work in 2014:

- The Water Activities Work Group (WAWG), with partners, hosted a tour of water quality restoration projects in Northwestern Montana.
- With MACD, MWCC assisted in planning and executing the first annual Montana Conservation Month, (www.montanaconservation.org) a program designed to focus attention on conservation each August. Twenty organizations participated with local events during the first year.
- With MACD and One Montana, MWCC assisted in developing the new Transition Agriculture project, (www.transitionagriculture.org) by implementing a high school essay contest. Transition Agriculture intends to assist farmers and ranchers with ways to adapt to changing water availability, weather fluctuations, and evolving markets.
- MWCC assisted with the High Divide Collaborative, an effort of multiple partners to increase local watershed capacity in the High Divide/Southern Crown area.
- MWCC also moved forward on a number of organizational development items, such as joining Montana Shares and the State Employees' Charitable Giving Campaign, developing a specialty watersheds license plate, and incorporating an annual campaign for funds.

Montana Association of Conservation Districts

For more than 70 years, the Montana Association of Conservation Districts (MACD) has contributed to the success of its constituent conservation districts across the state. Created in 1942, MACD is a nonprofit association governed by a statewide board of directors who simultaneously serve as district supervisors in their own jurisdictions. In order to carry out the specific directives of the board, MACD has an office in Helena.

Montana's 58 conservation districts use locally-led and largely non-regulatory approaches to address natural resource issues. Districts have a decades-long history of conserving Montana's resources by matching the needs of local people with technical and financial resources, initiating good conservation practices to benefit all Montanans.

2014 was a productive year for MACD in assisting with NPS pollution issues across the state. Some activities included:

- Administering the mini-grant program for DEQ, allowing thousands of dollars to be sent to dozens of Conservation Districts, watershed groups, schools, and other entities across Montana to address NPS issues.
- Further cementing MACD's close relationship with the MWCC by sharing the same office space and coordinating on management of the Big Sky Watershed Corps program. The program placed 15 young natural resource professionals with local conservation groups across the state. A majority of these Corps members worked directly on local water quality improvement projects during their term.
- Directing the Conservation Advisor for Livestock Operations program to directly address NPS pollution associated with small livestock operations.
- Administering the Irrigation Water Management Program to help producers efficiently manage their water resources, which in turn can improve water quality.

In addition, conservation districts across the state continue to carry out Montana's Natural Streambed and Land Preservation Act (310 permit) program. And finally, MACD is looking forward to continuing its role in a nationwide movement to improve soil health, addressing NPS issues by managing soil to reduce the need for pesticides and fertilizers.

Montana Wetland Council

The Montana Wetland Program is part of DEQ's Technical and Financial Assistance Bureau in the Planning, Prevention and Assistance Division. DEQ's Wetland Program provides state leadership to conserve wetlands for their water quality, water quantity, habitat, and flood risk reduction benefits and leads the Montana Wetland Council (Council) to develop and implement the state wetland plan. The Council meets three times per year, has an active listserv and website, and welcomes all to participate in the collaborative work of wetland and riparian protection, restoration, and management. For more information visit the website at: http://www.deq.mt.gov/wqinfo/Wetlands/WetlandsCouncil.mcpx

The Montana Wetland Council is an active network of diverse interests that works cooperatively to conserve and restore Montana's wetlands and riparian ecosystems. Montana's overarching wetland goal is no overall net loss of the state's remaining wetland resource base (as of 1989) and an overall increase in the quality and quantity of wetlands in Montana. MWC also supports a riparian goal to maintain, protect, and restore the ecological integrity of riparian areas. The Council assessed accomplishments and coordinated the update of the 2008–2012 Strategic Framework, creating an action-oriented plan titled "Priceless Resources: A Strategic Framework for Wetland and Riparian Area Conservation and Restoration in Montana 2013 –2017" (Strategic Framework).

The Strategic Framework prioritizes and directs collective efforts in conserving and restoring wetlands and riparian areas and is supported by the governor and natural resource directors. In 2014 the Council created a broader organizational structure to more effectively coordinate and sustain the energy, knowledge, and resource of its participants as an action-oriented network. Sixteen steering committee members represent 12 different organizations. Each steering committee member is championing a strategic direction or objective from the Strategic Framework, including items that address wetland and riparian priorities for:

· restoration, protection, and management
· public communication and education
· mapping, monitoring, and assessment
· local government, vulnerable wetlands, and public policy

Additional 2014 accomplishments include developing a training and outreach program titled "Wetland and Riparian Maps: Where to Find Them and How to Use Them." Nine live trainings were held across Montana, reaching 140 professionals. A webinar in December reached more than 40 professionals and is posted online at: http://deq.mt.gov/wqinfo/wetlands/wetlandscouncil.mcpx The Wetland and Riparian Mapping Center at the Montana Natural Heritage Program was created in 2008 to develop new accurate wetland and riparian digital mapping information for planning, protection, and restoration decision-making. Currently 70 percent of the state has been newly mapped, thanks to the support of 14 funding partners. Wetland and riparian mapping is one of the official Montana Spatial Data Infrastructure Framework Layers. Other professional training in 2014 included four field-based wetland plant identification workshops across Montana and field-based training to install beaver mimic structures that promote the beneficial aspects of beaver dams (groundwater recharge, sediment retention, nutrient assimilation) for watershed restoration.

Another 2014 highlight involves DEQ Wetland Program leadership in urban aquatic restoration. The 54-acre Story Mill site, situated at the confluence of Bozeman Creek and the East Gallatin River in Bozeman, offers a rare and remarkable opportunity to demonstrate habitat restoration with stream access and multiple other community benefits and recreation activities in a city park setting. The Trust for Public Land undertook a rigorous planning and stakeholder process over the past year that resulted in development of a preferred restoration alternative for the Story Mill site that will build resilience into this distressed wetland ecosystem. In August 2014 the Story Mill partnership began implementation of this 2-year demonstration project, including riverbank cleanup and stabilization, wetlands and floodplain restoration, water quality improvements, enhancement of habitat for resident and migratory birds and wildlife, and new recreation and education opportunities associated with restoration and interpretation. The project provides a community model for sustainability and green infrastructure and serves as a demonstration site for research, long-term monitoring, and public education about the importance of wetlands' function in urban settings. The Trust for Public Land is working closely with DEQ and the city of Bozeman to help mitigate the effects of upstream water quality. Educational partnerships are emerging with Montana State University to use the site as a monitoring laboratory (to include the proposed restoration) and outdoor classroom.

Goals for 2015 involve implementing year one of several new projects funded by EPA Wetland Program Development Grants: 1) quantifying the cost effectiveness of passive restoration techniques; 2) developing and presenting a workshop on stream restoration and floodplain design and a beaver mimic restoration workshop; 3) developing a sampling and analysis plan for the Musselshell watershed and identifying wetlands in the Musselshell with the greatest need for protection and restoration; 4) developing a long-term ecological monitoring site at Story Mill; and 5) developing a statewide wetland conservation prioritization map and an updated Montana Wetlands Legacy Partnership Website.

Looking Forward

Montana continues to demonstrate that the Nonpoint Source Management Program is committed to and capable of addressing nonpoint source pollution in Montana and that a voluntary, incentive-based approach works well in this state. The state has many dedicated partnering agencies, non-governmental organizations, and concerned citizens who participate in addressing nonpoint source water pollution.

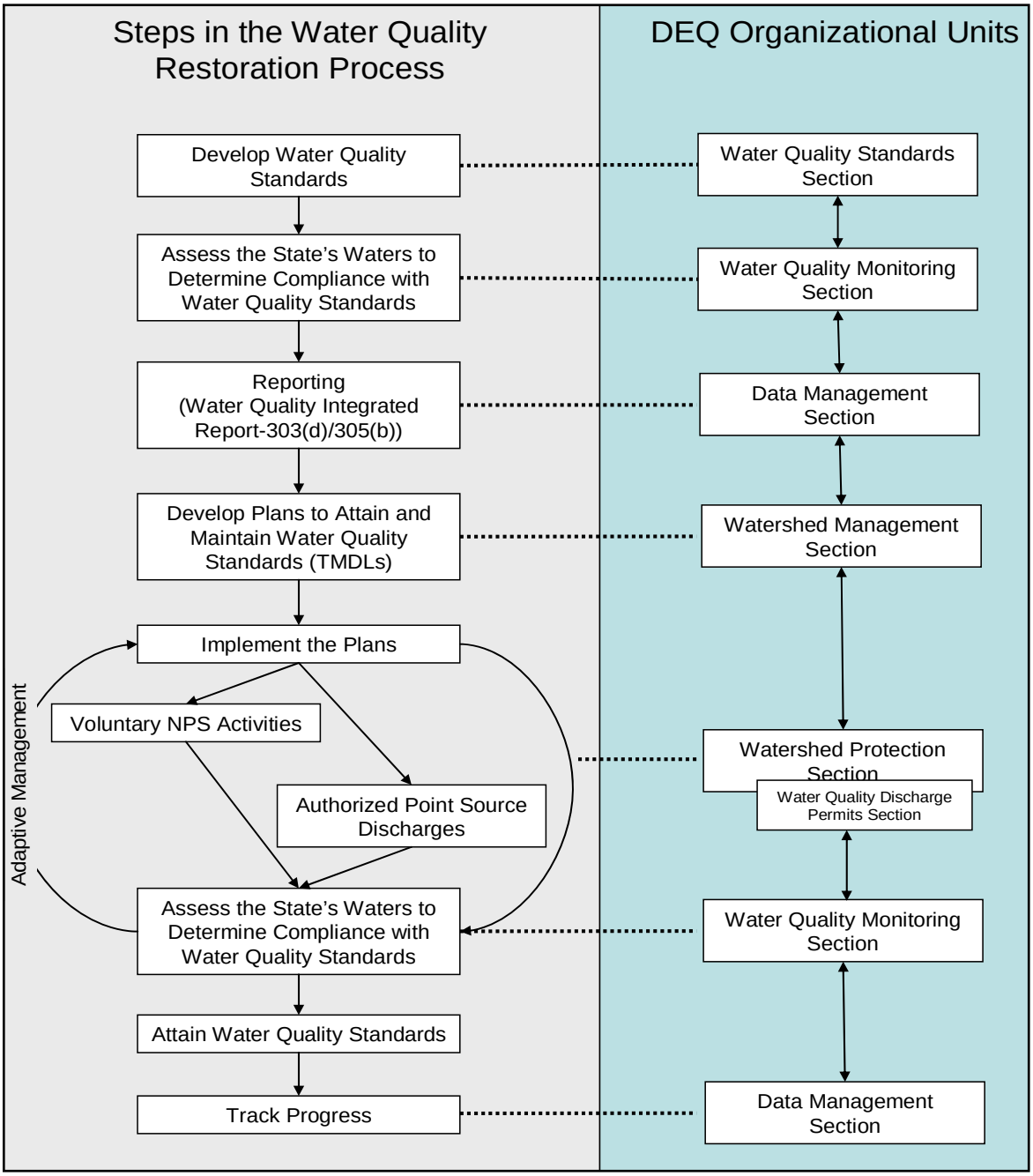
Priorities for 2015 include:

- Supporting local watershed groups' capacity building
- Developing and implementing watershed-based TMDLs
- Supporting, promoting, and accepting watershed restoration plans
- Completing TMDL implementation evaluations
- Supporting DEQ's reorganization to a water division structure
- Meeting the 5-year Action Plan measurable goals of the 2012 NPS Management Plan
- Evaluating the 2012 Nonpoint Source Management Plan for a 2017 update

A major concern is the continued decrease in federal Section 319 funding to Montana. These funds are essential for providing a clean and healthful environment, and Montana's funds support substantial agency activities, coordination, planning and programs, and on-the-ground projects in communities throughout the state, creating jobs while protecting and restoring Montana's irreplaceable natural resources. Without this funding, the local economies and environments would suffer. An indication of the need is that requests for Section 319 funding in FY15 exceeded anticipated funding by about 50 percent. Potential negative effects from the proposed budget cuts for Section 319 may be compounded by possible decreased federal funding to other natural resource agencies, including the NRCS, USFS, and EPA. These cuts, in conjunction with additional requirements for the Section 319 program (e.g., limiting programmatic funding to 50 percent of the state's 319 award), may require the Section 319 program to shift priorities to meet these requirements.

Appendices

Appendix A – Water Quality Planning Bureau Integrated Approach



1. The Water Quality Standards Section defines the goals for a waterbody by designating its uses, setting criteria to protect those uses, and establishing provisions to protect waterbodies from pollutants.
2. The Water Quality Monitoring and Assessment Section monitors water quality conditions and trends statewide and assesses the sources and severity of pollution problems.
3. The Data Management Section reports assessment findings.
4. The Watershed Management Section develops TMDL plans for waters not meeting standards.
5. The Watershed Protection Section supports the NPS implementation of TMDLs.
6. Water quality standards developed by the Water Quality Standards Section are used throughout DEQ, such as in the Montana Pollutant Discharge Elimination System program, to ensure clean water protection by all permitted point-source dischargers.

Appendix B – Montana Nonpoint Source Management Program's 5-Year Action Plan and Priorities

The Montana Nonpoint Source (NPS) Management Program's goal is to provide a clean and healthy environment by protecting and restoring water quality from the effects of nonpoint sources of pollution. The short-term (five-year) goal of Montana's NPS Management Program is to demonstrate significant progress in protecting and restoring Montana's water quality from nonpoint sources of pollution as measured by achieving the actions outlined in the NPS Management Plan. These actions focus on three specific areas: resource-specific goals, policy-specific goals, and education and outreach-specific goals.

5-year Action Plan for addressing NPS Pollution – Resource Related Actions

No.	*Responsible Party*	*Actions (Outcomes/Objectives)*	*Measurable Milestones/Outputs*	*2014 Accomplishments*
R1*	DEQ, EPA	Complete Water Quality Improvement Plans (WQIPs) and necessary TMDLs.	• At least 500 additional TMDL pollutant-waterbody combinations between 2012 and 2014	• 225 TMDL pollutant-waterbody combinations approved by EPA in 2014 (641 approved between 2012 and 2014).
R2*	DEQ	Conduct statewide water quality assessments.	• 130 water quality assessments completed by 2014	• Beneficial use assessment monitoring occurred on 40 waterbodies in western MT. 303(d)/305(b) assessment for 250 waterbodies have been completed since 2012, with over 1,000 individual waterbody pollutant combinations assessed. Surface water samples were collected quarterly at 15 sites in areas of oil and gas development to provide baseline conditions.
R3*	DEQ	Review/update Water Quality Integrated Report (305(b)/303(d)).	• Updated reports in 2014 and 2016	• 2014 Integrated Report approved by EPA in September 2014.
R4	DEQ	Re-evaluate the chemical, physical, and biological condition of reference sites.	• At least 100 reference sites re-evaluated by 2017	• In 2012 WQS began re-evaluating 184 DEQ-identified reference sites across the state to further refine and verify the accuracy of the reference sites. Re-evaluating these reference sites will be a multi-year project.
R5*	DEQ	Work with watershed groups to develop watershed restoration plans (WRPs).	• 20 DEQ-accepted WRPs by 2017	• DEQ accepted 7 WRPs in 2014. See Appendix G for a complete list. (Beaverhead, Bitterroot, Blackfoot, Deep Creek, Flathead Lake, Flint, Lower Gallatin)
R6*	DEQ	Encourage and fund WQIP- and WRP-directed NPS watershed restoration projects, including demonstration projects, for adoption of new technology.	• Annually fund on-the-ground watershed restoration activities	• 8 projects implementing Watershed Restoration Plan were funded in 2014. Eight 319 project proposals were accepted, reviewed, selected, and are awaiting final development of contract statements of work (SOWs).

** Indicates a high priority for the NPS Program*

No.	*Responsible Party*	*Actions (Outcomes/Objectives)*	*Measurable Milestones/Outputs*	*2014 Accomplishments*
R7	DEQ	Identify the TMDL Planning Areas having WQIPs and TMDLs in which at least some implementation activity has occurred during the previous calendar year.	• Annual reporting spreadsheet included in NPS Annual Report	• Implementation activities occurred in 16 TMDL Planning Areas during 2014.
R8*	DEQ	Develop and implement a monitoring strategy for Section 319 restoration activities for effectiveness and pollutant load reductions.	• Approved monitoring strategy by 2017	• The Project Effectiveness Report was completed in March 2014.
			• 100% of projects for nutrient and sediment reduction reported to EPA Grant Reporting and Tracking System	• Completed guidance document for estimating load reductions.
R9*	DEQ	Conduct TMDL implementation evaluations (TIE).	• Complete 20 reviews by 2017	• One TIE document in progress in 2014.
R10	DNRC	Work with forest agency partners (especially DNRC Forestry Assistance) to ensure effective forestry BMP and SMZ activities.	• Biannual reports on forestry BMP audits	• The Montana Forestry Best Management Practices (BMP) Working Group met once in 2014 to discuss current and on-going forest BMP activities in the state.
R11	DNRC	Work with forest agency partners to develop assessments to ensure BMPs and SMZs are protecting riparian and wetland functions.	• Assess BMP and SMZ adequacy for riparian and wetland functions	• DNRC conducted BMP/SMZ audits in the summer of 2014. NPS staff attended three audits as observers.
R12	DNRC, Plum Creek	Assess the effectiveness of SMZ and HCPs.	• Reporting from the resource agencies on SMZ and HCPs by 2017	• No reportable activity in 2014.
R13*	DEQ	Provide reviews and comment on outside agency proposed projects that may have an effect on NPS pollution.	• Reviews completed and comments provided as appropriate	• DEQ reviewed and commented on 14 outside agency projects in 2014 to request consistency with NPS BMPs.
R14	DEQ	Develop, maintain, and enhance Clean Water Act Information Center (CWAIC online) to provide public access.	• System operable and available to public	• CWAIC continues to be maintained in 2014 and was updated to include the 2014 Integrated Report data.
R15	DEQ	Administer MT-eWQX water quality database system.	• Upload all ambient water quality monitoring data collected by DEQ, its contractors, or data partners to EPA National STORET/WQX water quality data warehouse	• IMTS Data Management processed 137 water quality data packets (through 12/17/2014) from 49 unique monitoring projects into its water quality database – Montana EQuIS for WQX (MT-eWQX). Of the 137 data packet transactions, 126 were new data inserts and 11 were data updates (revisions or corrections).

** Indicates a high priority for the NPS Program*

No.	*Responsible Party*	*Actions (Outcomes/Objectives)*	*Measurable Milestones/Outputs*	*2014 Accomplishments*
R16	DEQ	Administer electronic data deliverables (EDD) submittal process for non-DEQ eWQX data submittals using EQuIS data management tools.	• Provide Web access to data submittal process information, data management tools and training, and technical assistance to data partners and contractors	• ITMS conducted 137 data transactions to WQX through 12/17/2014. IMTS conducted an online MT-eWQX training on 4/29/2014.
R17*	DEQ	Develop nutrient models for large rivers (e.g., Missouri, Yellowstone).	• Models developed for at least 2 large river segments by 2017	• Lower Yellowstone River nutrient criteria adopted as standards August, 2014.Modeling work on same river segment published in Journal of the American Water Resources Association.
				• Collected 1st year of data for the middle Missouri River (Wolf Creek to Loma) nutrient-criteria model. Second and final year of middle Missouri River data collection scheduled for summer 2015.
				• Held an initial meeting with the Bighorn River Alliance and FWP to discuss the possibility of developing nutrient standards on the Bighorn River. Additional coordination with the Crow Nation is pending.
R18*	DEQ	Protect, restore, and create riparian and wetland buffers designed to prevent or reduce NPS pollution.	• 3 miles of riparian and/or wetland buffers as part of Section 319 contracts	• Multiple active projects in 2014 include protecting, restoring or creating riparian buffers to reduce NPS pollution. These projects (Beaverhead [1500'],Stillwater [50'], Blackfoot [150'], 212060 [100'], 213033 [4,500'] will eventually create more than 7,400 feet (1.40 miles) of buffers.
R19	DEQ	Identify watersheds where NPS pollution from AFOs can be reduced.	• Identify 3 high-priority watersheds for restoration work by 2017	• Completed Beaverhead and Stillwater projects in 2014.
R20	DEQ	Encourage additional stormwater quality improvement projects funded through the state revolving fund program.	• At least 4 stormwater projects funded by 2017	• No activity in 2014.
R21*	DEQ	Manage and implement the NPS program in efficient and effective manner, including fiscal management.	• Provide consistent guidance on state reporting requirements	• DEQ has created template language for SOW for most contract tasks.
			• Conduct contract "kick-off" meetings	• WPS conducted 9 kick-off meetings with contractors in 2014.
			• Ensure 75% of 319 contracts are closed by initially-agreed date	• 67% of 319 contracts closed by initially-agreed date
			• Refine watershed project field evaluation form	• Completed in 2013.

** Indicates a high priority for the NPS Program*

5-year Action Plan for addressing NPS Pollution – Policy Related Actions				
No.	***Responsible Party***	***Actions (Outcomes/Objectives)***	***Measurable Milestones/ Outputs***	***2014 Accomplishments***
P1*	DEQ, FWP, MWCC, USACE, USFS, NRCS, BLM, DNRC, Individual watershed groups, private consulting firms, USFWS, MACD, others	Develop an interagency policy for river restoration work, emphasizing restoration of natural processes.	• Interagency policy supported by a wide range of government, nonprofit, and private entities by 2017	• Project planning has been initiated and there has been a broad range of interest for involvement in the process.
P2*	DEQ in collaboration with agencies, watershed groups, and other interested parties	Develop and implement a strategy for identifying priority watersheds on which to focus technical and financial resources, leading to two 12-digit HUC watersheds achieving water quality standards.	• Strategy document, set of action items, and at least 1 action item completed by 2017	• Continue to work with NRCS on the National Water Quality Initiative (214008, Deep Creek). Continue to work with USFS on Water Condition Framework (215001, Bitterroot Headwaters/Rye Creek-Sleeping Child).
P3*	DEQ	Develop and implement DEQ water quality improvement MOUs with agencies, including USFS, BLM, DNRC, MDT, NRCS, and MFWP.	• 3 MOUs established or revised by 2017	• Worked with USFS, NRCS, and BLM to implement existing MOUs.
P4	DEQ	Assist in efforts to develop cumulative effects assessment strategies for groundwater in high-density septic/development areas.	• Provide assistance with developing 5 assessment strategies	• MEANSS was used for the source assessment in the Flathead Lake Watershed TMDL.
P5	DEQ, DNRC, NRCS, irrigation districts, CDs, watershed groups, private landowners	Provide technical and/or financial support for efforts designed to reduce irrigation-induced NPS pollution.	• Technical and/or financial support provided to at least 3 projects	• 212056 (West Fork Nitrogen Reduction), 213023 (Lost Horse Creek Streamflow Enhancement), 214008 (Deep Creek Watershed Restoration Project), 213026 (Teton River Watershed-Riparian Improvements), 213028 (Muddy Creek Tribs Riparian Improvements).
P6*	DEQ	Develop numeric nutrient water quality standards and implementation procedures for surface waters.	• Standards and implementation procedures in place by 2012	• The criteria have been developed, and DEQ continues to work with stakeholders on the details of implementation.
			• BER-approved nutrient trading policy for point/ nonpoint sources	• DEQ, in conjunction with several consultants, has prepared a draft "Water Quality Trading Business Case for Montana" to help inform State efforts to encourage nutrient trading where appropriate.
P7*	DEQ	Develop technical basis for a lake classification system based on nutrient status.	• Lake classification system by 2017	• No activity in 2014.
P8*	DEQ	Develop and circulate numeric standards for all pesticides identified in Montana groundwater and surface waters.	• Adoption of numeric standards for all pesticides within 4 years of DEQ notification of detection in state waters	• Department of Agriculture identified 3 new pesticides in groundwater. DEQ and EPA have developed proposed criteria for the pesticides and will incorporate them into the triennial review rule package in 2015.

** Indicates a high priority for the NPS Program*

No.	Responsible Party	Actions (Outcomes/Objectives)	Measurable Milestones/ Outputs	2014 Accomplishments
P9	Counties, with DEQ support	Encourage the establishment of additional Water Quality Protection Districts (WQPD) within urban areas.	• One additional WQPD established by 2017	• No activity in 2014.
P10*	Cities and Counties	Incorporate NPS pollution prevention into city and county planning processes.	• By 2017, 3 additional communities have incorporated NPS pollution prevention into local planning processes	• City of Bozeman is incorporating NPS pollution education and awareness into their stormwater planning process.
P11	DEQ	Support improved urban stormwater management and information sharing through the MS4 task force.	• Active MS4 task force by 2013	• The 2014 Stormwater Conference coordinated by MT Watercourse was held in Billings, April 8-10, with 177 registrants.
P12*	DEQ, MWCC, collaborate with other federal, state, and local agencies	Develop a system or network for long-term monitoring that will produce data to evaluate water quality trends in waterbodies with completed TMDLs.	• Develop system/ network architecture by 2015	• DEQ is collaborating with watershed groups through contracts with MSUEWQ and through the Volunteer Monitoring Program.
			• Begin implementation by 2017	• No activity in 2014.
P13	DEQ	Develop guidance for water quality monitoring.	• Guidance for monitoring under Section 319 contracts	• The Guide for Estimating Load Reductions was completed in 2014.
			• QAPP guidance	• No activity in 2014.
			• SAP guidance	• SAPs were developed or updated for 11 volunteer monitoring groups.
P14	DEQ, MWCC, MSUEWQ	Provide technical and financial support to volunteer monitoring groups.	• Continue funding for laboratory analysis	• DEQ funded lab analysis support for six volunteer monitoring groups with approved SAPs.
			• Provide on-going technical support for development of QAPPs and SAPs	• WPS staff and partners provided additional support for SAP development in five additional watersheds.
P15	DEQ	Develop a nutrient trading policy that encourages nutrient load reductions consistent with WQIP/ TMDLs.	• Nutrient Trading Policy and demonstrated effective trades	• The Nutrient Trading Policy was approved by BER in December 2012. DEQ, in conjunction with several consultants, has prepared a draft "Water Quality Trading Business Case for Montana" to help inform State efforts to encourage nutrient trading where appropriate. A nutrient trade is included in the draft wastewater discharge permit for the city of Billings. DEQ commissioned a private contractor to prepare a business case analysis for nutrient trading.

** Indicates a high priority for the NPS Program*

Five-year Action Plan for addressing NPS Pollution – Education and Outreach Actions				
No.	***Responsible Party***	***Actions (Outcomes/Objectives)***	***Measurable Milestones/ Outputs***	***2014 Accomplishments***
EO1*	MTWC, DEQ	Incorporate school lesson plans that address water resources and NPS pollution issues.	• Incorporate up to 20 lessons into the appropriate units of study at 60 elementary schools, 30 middle schools, and 20 high schools	• MTWC led workshops for K-8 educators focused on water quality, NPS, and watershed project development attended by 32 educators. Eleven of those educators are working with MTWC to develop watershed projects that will reach approximately 300 students. • MTWC partnered with Greater Gallatin Watershed Council to teach 275 elementary students about erosion, water quality, and NPS pollution. • MTWC partnered the Ruby Watershed Council to provide water quality education to the Alder School (K-8 students). Water quality, NPS, erosion, and stream restoration were addressed.
EO2*	MWCC	Provide support and promote the development and coordination of watershed groups through MWCC activities, training workshops, advertising campaigns, etc.	• Annual watershed coordinator training	• MWCC hosted "Effectiveness Monitoring" training in May 2014.
			• Annual watershed tour	• DNRC and MWCC Water Activities workgroup hosted a tour of restoration sites in NW Montana in August 2014.
			• Bi-weekly newsletter	• MWCC published weekly e-news throughout 2014.
			• Coordinate a volunteer water monitoring group to collect water quality data and human-effects info within specific watersheds.	• The MWCC Monitoring Work Group participated in a collaborative effort initiated by MSUEWQ to engage citizens in sediment related data collection. These initial conversations focused on challenges, monitoring objectives and field methods and will serve as a catalyst for future progress toward developing volunteer sediment and riparian monitoring guidance.
EO3*	DEQ	Support riparian and wetland buffer education campaigns.	• Support 5 county-wide campaigns by 2017	• WPS funded the Flathead Lakers in their K-12 Clean Water Education program, their River to Lake outreach program, and education and outreach efforts to implement lakeshore BMPs.
EO4	DEQ, MDT, MSU	Promote and support BMP training for road maintenance personnel.	• Compile library of training materials	• No activity in 2014.
			• Bi-annual training for road maintenance personnel	• No activity in 2014.
EO5	DEQ	Develop and deliver multi-media presentations that teach basic concepts in reducing NPS pollution from agricultural sources.	• Develop at least 2 presentations	• No activity in 2014.
			• Deliver each presentation twice by 2017	• No activity in 2014.

** Indicates a high priority for the NPS Program*

No.	*Responsible Party*	*Actions (Outcomes/Objectives)*	*Measurable Milestones/ Outputs*	*2014 Accomplishments*
EO6	DEQ	Support conferences that address stormwater pollution prevention and control strategies.	• Two stormwater conferences held between 2012 and 2017	• WPS staff was active in planning and presenting at the 2014 Stormwater Conference, supported by Montana Watercourse.
EO7	DEQ	Identify and/or develop monitoring and assessment methods for private landowners to inform land management decisions.	• Develop self-assessment tool for private landowners by 2017	• Continued to distribute the On-Site Guide for Livestock Operators at NRCS offices, State Water Plan meetings and the MACD Annual Convention.
EO8	DEQ, MWCC, MSUEWQ	Provide training opportunities for volunteer monitors.	• Training provided to 10 watershed groups by 2017	• Technical guidance such as monitoring training, equipment, study design and data quality assurance was provided to five of Montana's volunteer monitoring programs.
EO9	DNRC, Montana Logging Assoc., and MSU Forestry Ext.	Promote and conduct forestry BMP and stewardship educational workshops and programs.	• Annual BMP/SMZ education workshops for loggers and landowners • Forest stewardship program targeting small landowners throughout Montana	• Four NPS staff attended the Montana Logging Association's annual SMZ/BMP training.

** Indicates a high priority for the NPS Program*

Appendix C – Fiscal Year 2014 Section 319 Project Awards

Project Name	Project Sponsor	DEQ Project Officer	DEQ Contract Number	319 Funds	Non-Federal Match Funds	Total Project Cost
Watershed Restoration Projects						
Upper Ninemile Creek Mine Reclamation	Trout Unlimited	Eric Trum	213033	$ 61,250	$ 45,000	$ 106,250
Deep Creek Watershed Restoration Project	Broadwater Conservation District	Ann McCauley	214008	$ 257,000	$ 224,600	$ 481,000
California Creek Restoration Project	Big Hole Watershed Committee	Ann McCauley	214009	$ 156,400	$ 106,067	$ 262,467
Dry Creek and Bull River Sediment Reduction and Re-vegetation Project	Green Mountain Conservation District	Eric Trum	214012	$ 290,000	$ 540,090	$ 830,090
Riparian Restoration and Sediment Reduction on Rye Creek	Bitter Root Water Forum	Laura Andersen/ Katie Eiring	215011	$ 34,000	$ 23,000	$ 57,000
Sediment Reduction in Lolo Creek Watershed	Lolo Watershed Group	Laura Andersen/ Katie Eiring	215012	$ 45,000	$ 30,000	$ 75,000
Watershed Restoration Projects Sub-Total				*$ 843,650*	*$ 968,757*	*$ 1,812,407*
Education and Outreach Projects						
FY2014 Education & Outreach Mini-Grants	SWCDMI	Laura Andersen/ Katie Eiring	214010	$ 25,000	$ 17,000	$ 42,000
Big Sky Watershed Corps Support	Montana Watershed Coordination Council	Robert Ray	214012	$ 55,550	$ 40,000	$ 95,500
Education and Outreach Projects Sub-Total				*$ 80,500*	*$ 57,000*	*$ 137,500*
Total				**$ 924,150**	**$ 1,025,757**	**$ 1,949,907**

Appendix D – Section 319 Projects Closed in 2014

Contract Number	Contractor	Project Name	Amount Expended	Final Payment Date	Close on initially agreed date
209074	Granite County Conservation District	Flint Creek Watershed Plan	$ 20,000.00	7/25/14	No
210111	Flathead County	Bigfork Stormwater Project	$ 195,496.92	12/3/14	No
210140	Beaverhead Conservation District	Beaverhead Watershed Plan	$ 8856.74	2/19/14	No
211073	Lower Clark Fork Watershed Group	East Fork Elk Creek-Springer Bank Stabilization	$ 17,778.75	2/25/14	Yes
211075	Craighead Institute	Corder Ditch Abandonment	$ 80,000.00	1/3/14	Yes
211076	MSU Extension Water Quality	Volunteer Monitoring for E. coli	$ 22,500.00	7/29/14	No
212057	Jefferson River Watershed Council	Big Pipestone Creek Restoration Project - Phase 1	$ 64,378.63	6/19/14	Yes
212059	Trout Unlimited	Ninemile Creek WRP Development and Josephine Creek Mine Reclamation	$ 38,400.00	4/2/14	Yes
212064	Clark Fork Coalition	Riparian and Flow Restoration Education in the Bitterroot and Upper Clark Fork Watersheds	$ 20,000.00	2/4/14	Yes
212066	MSU Watercourse	The Watershed Institute	$20,000.00	8/8/14	Yes
212067	MSU Extension	Enhancing Advanced Volunteer Monitoring Capabilities in Montana	$ 22,700.00	3/14/14	No
212068	SWCDMI	Education and Outreach Mini-Grant Program	$ 17,659.96	8/19/14	Yes
212069	SWCDMI	Strengthening Watershed Communities	$ 30,000.00	2/3/14	No
213024	Bitter Root Water Forum	Watershed Restoration Plan Implementation, Education, and Outreach	$ 19,000.00	8/12/14	Yes
213027	MWCC	Effective Watershed Communication	$ 9,000.00	9/22/14	Yes
213030	MSU Watercourse	Storm Water Conference	$ 18,000.00	8/8/14	Yes
213035	SWCDMI	2013 Watershed Symposium	$ 15,000.00	2/3/14	Yes
214001	Missoula Valley Water Quality District	Riparian Awareness Campaign - Additional Advertisement Runs	$ 10,000.00	8/20/14	Yes

Appendix E – Section 319 Mini-Grant Projects in 2014

Contract	Project Sponsor	Project Title	Award
Mini-Grants Awarded in March 2014 by SWCDMI (DEQ contract #213022)			
SWCDMI-MG14-06	Blue Water Task Force	Trout Friendly Landscaping Program	$ 2,000
SWCDMI-MG14-07	Gallatin Valley Land Trust	Sourdough Canyon: Reduce the Poop	$ 2,000
SWCDMI-MG14-08	Helena School District	It's All Downhill From Here	$ 2,000
SWCDMI-MG14-09	Jack Creek Preserve	Water Quality Monitoring Educational Kiosk and Outreach	$ 1,500
SWCDMI-MG14-10	Livingston School District	Riparian Mapping	$ 2,000
Mini-Grants Awarded in October 2014 by SWCDMI (DEQ contract #214010)			
SWCDMI-MG15-01	Bitter Root Water Forum	Streambank Bioengineering Workshop	$ 2,000
SWCDMI-MG15-02	Flathead Community Foundation	Flathead Watershed Educator's Guide Phase II	$ 2,000
SWCDMI-MG15-03	MSU -Watercourse	Water Monitoring-Educator Training	$ 1,615
Calendar Year 2013 Total			**$ 14,115**

Appendix F—Volunteer Monitoring Lab Analysis Support Grants in 2014

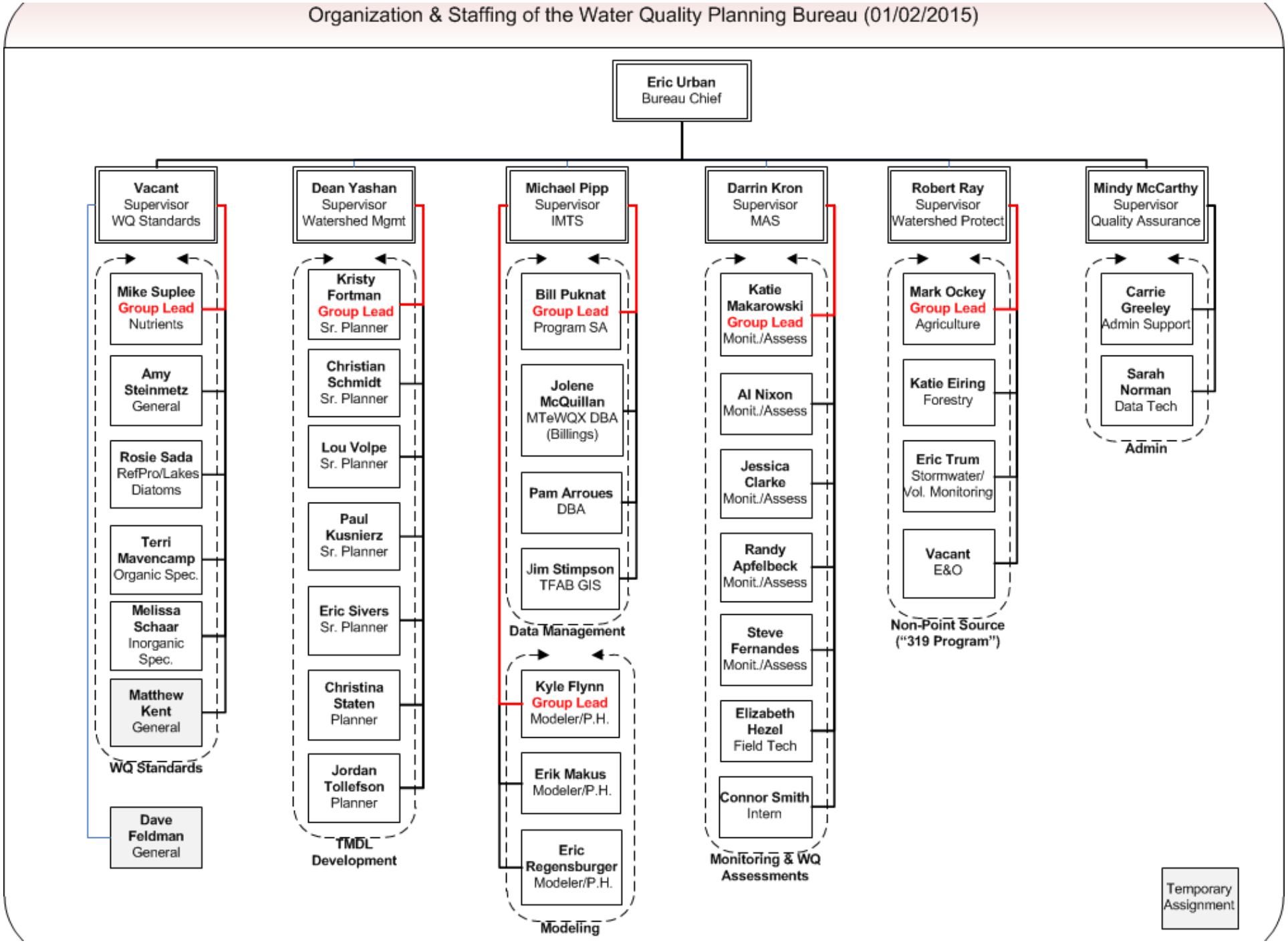
Sponsor	Project	Project Description	Funding Award
Sun River Watershed Group	Sun River Volunteer Monitoring project	Volunteers will monitor water quality seven times at two sites on the Sun River and on four Sun River tributaries. Monitoring will track changes that may be occurring from all the projects the watershed effort is accomplishing to improve the health of the Sun River.	$2,815
Teton River Watershed Group	Teton River Volunteer Monitoring project	Volunteers will monitor water quality at five sites on the Teton River and at one Teton River tributary to help track changes that may be occurring from all the projects the watershed effort has accomplished to improve the health of the Teton River.	$1,349

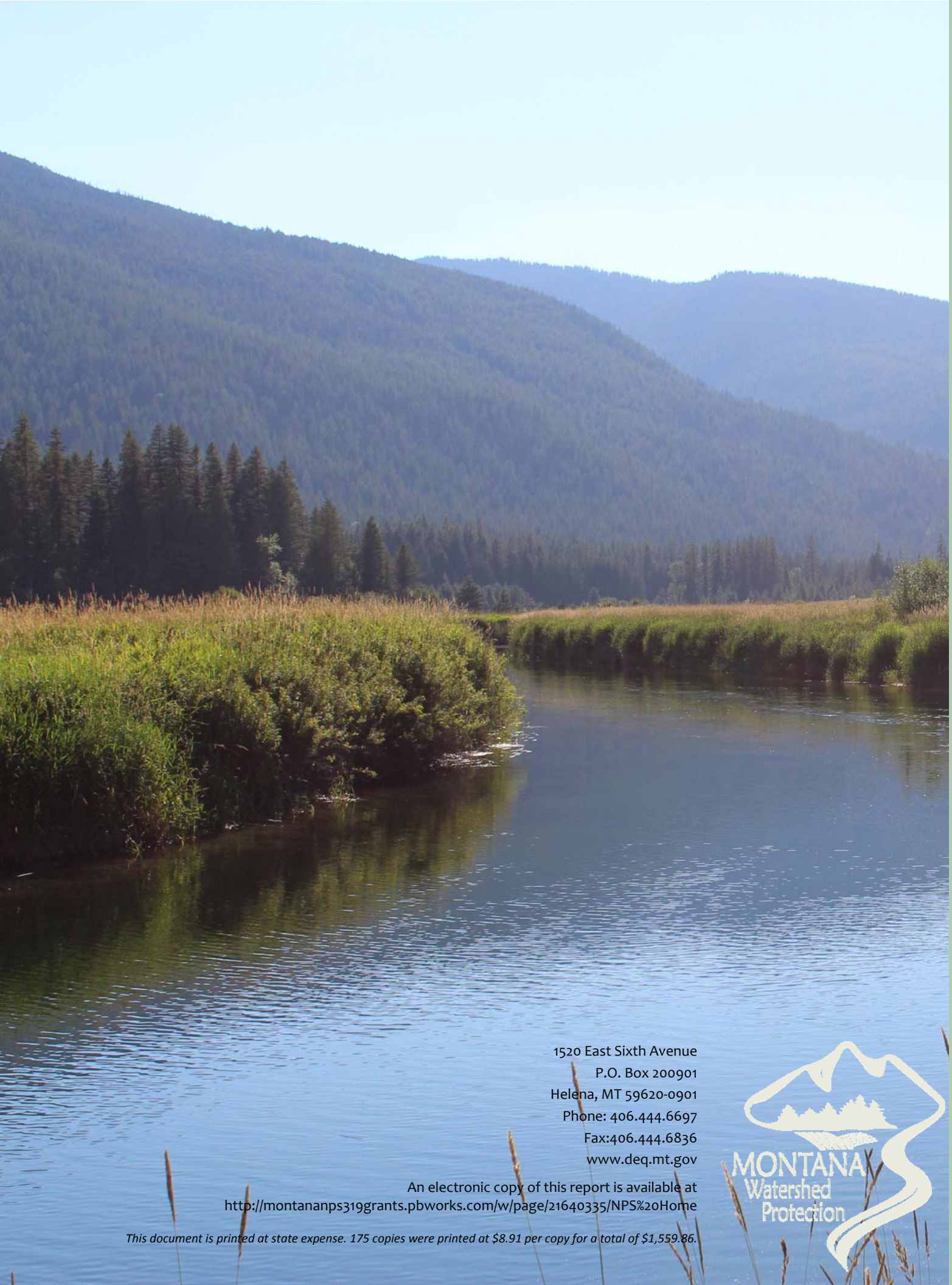
Water and Environmental Technologies, PC	Little Bitterroot Lake Eutrophication Study	The objective of this monitoring project is to collect nutrient and algae data, in conjunction with field parameters to answer the following questions: 1. What are nutrient and algae concentrations during mid-summer in Little Bitterroot Lake? 2. How do algae and nutrient concentrations vary spatially in Little Bitterroot Lake, and can spatial differences be attributed to variations in land-use or watershed conditions? 3. To what extent does mid-summer stratification occur in Little Bitterroot Lake?	$1,552
Blue Water Task Force	Blue Water Task Force Community Water Quality Monitoring Program	The goals of the BWTF CWQMP are to: 1. Continue a record of baseline data (water quality and macroinvertebrates) on the Gallatin River and its tributaries. 2. Assess the success/failures of future restoration projects on streams with TMDLs in the Upper Gallatin TMDL Planning Area. 3. Determine whether road salt and sand from winter maintenance activities effects water quality of the Upper Gallatin River and its tributaries.	$607
Greater Gallatin Watershed Group	Gallatin Stream Team Water Quality Monitoring 2014	The goal of this project is to engage local citizens in water quality monitoring to collect high-quality data in the Lower Gallatin watershed. Specific objectives are to: 1. Train 20 to 30 volunteers in water quality monitoring methodology. 2. Monitor four streams, two sites per stream, once per month in July, August, and September 2014. 3. Collect samples to be analyzed for total nitrogen, nitrate-nitrite nitrogen, total phosphorous, total suspended solids, and chlorophyll-*a* as biomass and ash-free dry weight. 4. Engage partners including the Gallatin Local Water Quality District to assist with volunteer recruitment, monitoring, and data processing/analysis. 5. Use data to monitor long-term trends, particularly on TMDL-impaired streams, as well as to compare pre- and post-project water quality data for restoration projects. Data collected on the East Gallatin River in 2013 and 2014 is targeted toward monitoring the effectiveness of wetland and floodplain restoration at the future Story Mill Community Park. This restoration began in fall 2014 and is expected to continue until spring 2016. Monitoring of the restoration site is planned through summer 2017.	$2,936
Madison Watershed Group	Madison Stream Team 2014	This effort was initiated to increase education and outreach opportunities specific to water quality in the Madison watershed. Since 2010 the Madison Stream Team has been engaged in the regular collection of water quality and quantity data on select streams in the Madison Watershed. These streams are designated as impaired and include Jack, O'Dell, Moore's, North Meadow, South Meadow, Blaine Spring creeks, and the West Fork of the Madison River. The supporting organizations recognize the value of collecting baseline water quality and quantity data on impaired waterways, specifically if the data is recognized as credible and useful for the pre-TMDL planning process. Volunteers complete annual training and commit to regular sampling events on their assigned streams.	$2,983

Appendix G—Watershed Restoration Plan (WRP) Status

Watershed/Group Name	Funding	WRP Status
Beaverhead Watershed Committee	2010 TMDL 319 (contract 210140)	ACCEPTED (February 2014)
Bitterroot River / Bitter Root Water Forum (BRWF)	2012 319 (contract 212054)	ACCEPTED (April 2014)
Blackfoot/ Blackfoot Challenge	2012 319 (contract 212055)	ACCEPTED (December 2014)
Deep Creek (Broadwater Conservation District)	2013 Purchase Order	ACCEPTED (January 2014)
Flathead Lake/Flathead Lakers	2012 319 (contract 212061)	ACCPETED (December 2014)
Flint Creek Watershed Group	2009 TMDL 319 (contract 209074)	ACCEPTED (June 2014)
Little Blackfoot/Trout Unlimited	2013 319 (contract 213029)	ACCEPTED (December 2014)
Lolo Watershed Group	2009 TMDL 319 (contract 209075)	ACCEPTED (March 2013)
Lower Clark Fork Watershed Group - Tributary Creeks	2005 319, 604(b) funding, 2009 319	ACCEPTED (October 2010)
Lower Gallatin (GGWC)	2013 319 (contract 213025)	ACCEPTED (December 2014)
Middle-Lower Big Hole/Big Hole Watershed Committee (BHWC)	2010 319 (contract 210109)	ACCEPTED (September 2013)
Ninemile / Trout Unlimited	2011 319 (contract 212059)	ACCEPTED (February 2013)
Shields River/ Park CD	2009 319 (contract 209063)	ACCEPTED (September 2012)
Sun River/ Sun River Watershed Group	2009 319 (contract 209065)	ACCEPTED (February 2012)
Swan River/ Swan Ecosystem Center	2007, 2008, 2009 319	ACCEPTED (October 2010)
Teton River/ Teton Watershed Group	2009 319 (contract 209062)	ACCEPTED (October 2012)
Upper Big Hole/Big Hole Watershed Committee (BHWC), Upper Big Hole Partnership	2009 319 (contract 209061)	ACCEPTED (December 2012)
Upper Clark Fork/ Watershed Restoration Coalition	2007 TMDL319	ACCEPTED (December 2012)
Upper Gallatin/ Blue Water Task Force	2009 TMDL 319 (contract 209078)	ACCEPTED (September 2012)
Clearwater River/ Clearwater Resource Council (CRC)	2009 319 (contract 209066)	Not complete WRP; preliminary research done; no plans for writing actual WRP yet.
Lake Helena Watershed Group	2011 319 (contract 211072)	Under development.
Upper Jefferson/ Jefferson River Watershed Council	2010 TMDL 319 (contract 210128)	Final Draft Submitted. In draft form spring 2011.
Big Fork/Flathead County	2009 319 (contract 209064)	NOT ACCEPTED. Completed, however, county unable to address DEQ's comments on addressing area sources & actions.
Big Spring/ Fergus County CD and Big Spring Creek Watershed Council (BSCWC)	2008 319 (contract 208028)	NOT ACCEPTED. Not originally intended to be a complete WRP; final product submitted, does not meet all 9 minimum elements.
Ruby River/ Ruby WG	2007 319	NOT ACCEPTED. Draft completed in summer 2011, but does not incorporate 9 elements or DEQ comments. No final submitted.

Appendix H – Water Quality Planning Bureau Organizational Chart





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