NUTRIENT WORK GROUP MEETING SUMMARY
August 16, 2023

9:00 a.m. – 11:00 a.m.
Hybrid Meeting: Zoom and DEQ Room 111

ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Louis Engels City of Billings	Point Source Discharger: Large Municipal Systems (>1 MGD)
Shannon Holmes City of Livingston	Point Source Discharger: Middle-Sized Mechanical System (<1 MGD)
Rika Lashley Morrison-Maierle	Point Source Discharger: Small Municipal Systems with Lagoons
Alan Olson Montana Petroleum Association	Point Source Discharger: Non-POTW
Kelly Lynch Montana Leage of Cities and Towns	Municipalities
Matt Vincent (Matt Wolfe substituting) Montana Mining Association	Mining
Guy Alsentzer Upper Missouri Waterkeeper	Environmental Advocacy Organization
Sarah Zuzulock Zuzulock Environmental Services	Conservation Organization: Regional
Andy Efta U.S. Forest Service, Northern Region	Federal Land Management Agencies
Tina Laidlaw (Erik Makus substituting) U.S. Environmental Protection Agency	Federal Regulatory Agencies
Nick Banish Gallatin Local Water Quality District	County Water Quality Districts or Planning Departments
Samantha Tappenbeck Flathead Conservation District	Soil and Water Conservation Districts – West of the Continental Divide
Scott Buecker (Kelsey Wagner substituting) AE2S	Wastewater Engineering Firms
Julia Altemus Montana Wood Products Association	Timber Industry

NOT IN ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Karli Johnson Montana Farm Bureau Federation	Farming Oriented Agriculture
Raylee Honeycutt Montana Stockgrowers Association	Livestock-Oriented Agriculture

Representative & Affiliation	Representing
Kristin Gardner Gallatin River Task Force	Conservation Organization: Local
David Brooks Montana Trout Unlimited	Conservation Organization: Statewide
Pete Cardinal Pete Cardinal Outfitters	Water or Fishing-Based Recreation
Jeff Schmalenberg Department of Natural Resources & Conservation	State Land Management Agencies
Dan Rostad Yellowstone River Conservation District Council	Soil and Water Conservation Districts – East of the Continental Divide

ATTENDANCE: OTHER PARTICIPANTS

Aaron Losing
Alanna Shaw, MPDES Section Supervisor
Amanda McInnis, Jacobs
Amelia Flanery, DEQ, Surface Water Discharge Permitting
Andy Ulven, DEQ, Water Quality Planning Bureau Chief
Brian Heaston, City of Bozeman
Brian Sugden
Casey Lewis, Flathead Basin Commission Executive Director
Christina Staten, DEQ, TMDL Section Supervisor
Christine Weaver, DEQ, Surface Water Discharge Permitting
Coralynn Revis, HDR
Darrin Kron, DEQ, Monitoring and Assessment Section Supervisor
Dave Clark, HDR
Ed Coleman, City of Helena
Emilie Henry, DEQ, Non-point Source Coordinator
Eric Sivers, DEQ, Policy Analyst
Hannah New, DEQ, Surface Water Discharge Permitting
Hannah Riedl, DEQ, Water Quality Specialist
Heather Henry, DEQ, Water Quality Scientist
Jason Mohr, Legislative Services Executive Director
Jeff Dunn, WGM Group
Jeff May, DEQ, Surface Water Discharge Permitting
Jeff Moss
Jeremy Perlinski
K Hendrickson
Katie Makarowski, DEQ, Standards and Modeling Section Supervisor
Kristi Kline, Montana Rural Water Systems
Kyle Milke, DEQ, Adaptive Management Program Scientist
Leea Anderson, City of Helena
Lindsey Krywaruchka, DEQ, Water Quality Division Administrator
Logan McInnis, City of Missoula
Madison Grady
Mary Godfrey, DEQ, Program Support Specialist
Michael Suplee, DEQ, Water Quality Standards and Modeling

Moira Davin, DEQ, Public Information Officer
Peggy Trenk, Treasure State Resources Association
Rickey Schultz, HDR Engineering
Ryan Sudbury
Ryan Urbanec
Susie Turner
Tatiana Davila, DEQ, Water Protection Bureau Chief
Torie Haraldson, DEQ, Water Quality Specialist
Trevor Selch, Montana Fish, Wildlife and Parks
Vicki Marquis, Holland and Hart

MEETING PURPOSE / OBJECTIVES

Meeting Goal: Discuss program eligibility, the adaptive management plan template, and annual reporting requirements. EPA will be discussing the technical support document approach.

Technical Support Document Approach

Adaptive Management Program Eligibility

AMP Template

Annual Reporting

How to Choose and Appropriate Nonpoint Source BMP

MEETING HIGHLIGHTS / DECISIONS MADE

- Future meeting schedule
    - Thursday September 14, 2023 9 – 11 a.m.
    - Monday October 16, 2023 9 – 11 a.m.
    - Tuesday November 14, 2023 9 – 11 a.m.

MEETING INITIATION

Moira Davin, DEQ, Public Information Officer and meeting facilitator, welcomed everyone to the meeting at 9:04 a.m. Moira Davin went over meeting logistics (slide 2, **Attachment A**), the meeting agenda (slide 3, **Attachment A**), and took a roll call of Nutrient Work Group (NWG) members present either via Zoom or in Room 111 of the DEQ Metcalf Building in Helena (slide 4, **Attachment A**). Moira Davin then informed the NWG of DEQ staff updates (slide 6, **Attachment A**).

Tatiana Davila, DEQ, Water Protection Bureau Chief, introduced Alanna Shaw, DEQ, the new MPDES Section Supervisor. Moira Davin informed the NWG that Eric Trum, DEQ, Watershed Protection Section Supervisor, has left the agency for another position.

Moira Davin handed it over to Erik Makus, EPA, to discuss the Technical Support Document for Water Quality-based Toxics Control (TSD) (slide 7, **Attachment A**).

TECHNICAL SUPPORT DOCUMENT APPROACH

Erik Makus briefly discussed EPA's thoughts on the TSD. The TSD approach is a reasonable potential approach to permitting to determine the permit effluent limitations. DEQ previously mentioned using the TSD approach to look at reasonable potential. Erik Makus stated that he has heard many concerns about the TSD approach not being appropriate for nutrients and that the TSD approach is for toxics control. The TSD approach lays out the basis of how you do a numeric quantitative approach.

Erik Makus noted there is sometimes some confusion on why a reasonable potential analysis (RPA) is required. A reasonable potential analysis is a requirement in the Code of Federal Regulations and most EPA guidance. The TSD method is one approach to a quantitative way of doing reasonable potential analysis. Virtually every state has used the TSD approach as a numeric quantitative approach for calculating reasonable potential. While the TSD approach was created for toxics, there are several discussions in the document that it could be used for conventional and nonconventional pollutants. EPA's position is that they support DEQ's decision to use the TSD approach in whatever they do. In EPA's view, the TSD approach is very applicable to nutrients, it has a very applicable framework for looking at pollutants in a stream.

Erik Makus also mentioned that last year EPA came out with additional modules in the National Pollutant Discharge Elimination System (NPDES) Permit Writer's Specialty Training for addressing nutrient pollution in NPDES permitting. The additional modules go into detail on how the TSD can be adapted.

Moira Davin asked if the NWG had any questions.

Rika Lashley, Morrison-Maierle, commented that what stood out to her is that the TSD approach only looks at effluent data. What she doesn't like are the statistics, they are more geared towards toxics. There is a higher level of uncertainty, there is a higher likelihood of the effluent being toxic. Rika Lashley does not think this is the right approach to nutrients. The statistical approach to uncertainty does not apply to nutrients.

Erik Makus stated that he both agreed and did not agree. If you have a tiny dataset, the uncertainty is going to be bigger the less samples you have. This is not a toxics approach, this is just a statistical approach. Nutrients get more complicated when you talk about multiple dischargers.

Rika Lashley stated that the discharger group about a year ago or so submitted information on how a narrative RPA could be used and that they would still like to see this. Rika Lashley would like to circle back to this.

Amanda McInnis, Jacobs, echoed some of Rika Lashley's comments. Amanda McInnis stated that the fundamental difference is that nutrient management in a watershed cannot be summed up in a single value from the ecoregional range and that they just fundamentally disagree with the TSD approach. When TMDLs are developed, they look at a watershed and a load allocation is developed and it goes into the permit, usually without a RPA.

Erik Makus mentioned that the TMDL development process is very different than the permitting process. We have a duty to do a RPA for permit point source discharges. He thinks where we get into trouble is when we say that the TSD is a mass balance process for toxics – it is just a mass balance

process, that's it. Erik Makus asked why the regulated community thinks a mass balance process is not applicable to nutrients?

Amanda McInnis stated that she thinks it is an oversimplification of the TSD approach and it is not a good use of the tool. Nutrients are a much broader pollutant. You have toxic compounds, and they are toxic in a simple way.

Dave Clark, HDR, asked Erik about how the mass balance approach works when there are ecoregional response variable values that are so low that the receiving waterbody is already above the ecoregional concentration. How does mass balance inform the permit in that sense?

Erik Makus stated that it would depend. If the standard is adopted, then that is the basis for the permit decisions whether you do a mass balance or something else. The science seems to show us nutrient standards in streams are pretty low, we need to adapt to this. Mass balance can show a permittee has reasonable potential. The standard is there, I understand they are low, that is why EPA has been pushing some approaches.

Dave Clark stated that it is inevitable if concentrations for instream are based on ecoregional ranges, so if we're below those levels, then standards apply as end of pipe limits. Can you tell what accounts for an imbalance in a mixing zone?

Erik Makus stated that looking at Montana permits, what you describe does and does not happen sometimes.

Dave Clark mentioned that to Amanda McInnis' point, it tells you about low concentration values at the edge of the mixing zone.

Erik Makus mentioned that Dave Clark is correct. The goal is to tell us a point source is contributing to an exceedance, it wouldn't predict what is going on in the waterbody. There is some flexibility, the modules talk about some considerations for critical conditions. In the TSD, critical conditions for toxics are the max concentration in the discharge multiplied by some factor.

Dave Clark stated that when dealing with toxics, you are concerned about dealing with the end of the mixing zone. For situations where ecoregional ranges are so low, and they are used in a mass balance approach, how do you extend that to a permit writer writing the limit, basically how do you determine the limit?

Erik Makus stated that you might get end of pipe limits at the water quality standard.

Dave Clark asked if we can't treat to the low level, how do we comply with the permit?

Erik Makus said to look at the compliance options, they provide flexibility. These are the Clean Water Act options to dealing with that issue.

Dave Clark then stated that we are then back to variances.

Andy Ulven, DEQ, Water Quality Planning Bureau Chief, mentioned that the adaptive management program would be one of the potential options as well.

Erik Makus said that DEQ is working on an adaptive management program that works as a long-term compliance schedule for watersheds.

Darrin Kron, DEQ, Monitoring and Assessment Section Supervisor, asked Erik Makus if he was aware of any states that use mass balance and use response variables? If you have data above the response variables, if there is a listing, it would indicate there is a problem. Do you know if any states deal with response variables downstream?

Erik Makus responded that Vermont does and possibly Minnesota. The goal here is not to suggest you can only do a mass balance approach on nitrogen and phosphorus.

Rika Lashley asked if DEQ is open to revisiting a narrative approach to RPA?

Andy Ulven responded that is something we can discuss; we don't have anything set in stone. The reason we are talking about this is that it is one of the options we are seriously considering.

Rika Lashley stated that there are just lots of pieces that just need to go in there. A narrative to RPA can look at the watershed, TSD just looks at effluent and mass balance.

Louis Engels, City of Billings, asked if there are any fundamental reasons why the narrative approach to RPA wouldn't work in DEQ's or EPA's minds? The TSD approach doesn't focus on the watershed.

Darrin Kron mentioned that another consideration here is that not everybody is going to be in this watershed approach either.

Tatiana Davila said that DEQ does not have a staunch view on reasonable potential, we are happy to discuss it in the future.

Erik Makus responded to Louis saying that from an EPA perspective, there is concern that with the concept that we have data, we know from the ecoregional data that these values are likely close to appropriate levels, maybe there is some discussion needed on what level of nitrogen and phosphorus would cause an issue instream. We are going to collect response variables, DEQ has done a bunch of studies. Why wouldn't we use this data? This stuff informs nutrient exceedances.

Louis Engels agreed that they need to look at all the data. We should look at more than just upstream/downstream, we should look at the whole watershed as an entire system as opposed to discharge at the end of pipe. Louis' understanding is that the narrative RPA would do that.

Amanda McInnis mentioned that a narrative or nuance RPA could look at it more as one piece. TSD is a narrow view of everything we can do in a watershed. You can think about greenhouse gases, the numbers should be one component of an evaluation. The TSD should be one piece of something more complicated.

Erik Makus responded that he thinks all of that is important, but at the end of the day we need to do RPA at the point source.

Lindsey Krywaruchka, DEQ, Water Quality Division Administrator, said that we can't look at things we don't regulate that impact the watershed. This is what this is, things we can regulate. This is not the place or means by which we are going to regulate septics and irrigators.

Dave Clark echoed Louis Engels' and Amanda McInnis' comments, looking at the watershed, it seems that regarding the mass balance is whether or not at the edge of the mixing zone. Why not look at temporal or spatial variability throughout the watershed? You could have a better RPA approach.

Rika Lashley stated that she thinks even the TSD says if there is no data, then you require in a permit that data is collected but you do not conduct an RPA. The adaptive management program initiates data collection, why couldn't RPA be calculated when all the data is available?

Andy Ulven responded that the purpose of this is RPA, which is separate from achieving water quality standards and what is the best compliance option. Keep in mind that this will be considered more in compliance options through the adaptive management program.

Rika Lashley stated that what she is trying to get at is that if we choose a narrative approach to RPA, we can only include it if we have the numbers. If we don't have the data, we postpone RPA till we have it.

Lindsey Krywaruchka responded by asking if what you are saying is we would not permit and collect data? What if we learned there are issues in the watershed that are out of the scope of our authority. What then?

Rika Lashley responded that she is suggesting having an interim approach, not suggesting not permitting.

Andy Ulven responded that reasonable potential assessments are done iteratively and successively, as we collect more data that decision can be revisited over time. We have to have a RPA.

Rika Lashley stated that there are many permits that do not because they say they don't have data. For example, ammonia doesn't have a standard, but nutrients do.

Erik Makus responded saying you mentioned ammonia, it is a bit different because we don't have an ammonia standard without collecting the data. In some cases, states will collect data, require ammonia monitoring, and collect pH and temperature to do a RPA.

Kelly Lynch, Montana League of Cities and Towns, stated that they have never suggested that this would be a means by which DEQ regulates dischargers. What we have asked for and the legislature told DEQ to do is to look at point sources and permitting in the context of everything going on in the watershed. You guys are still refusing to do that.

Moira Davin tried to clarify that the adaptive management program is a watershed approach through nonpoint source projects. What we are hearing is that you are frustrated because there is not more in the RPA, which is technically outside of the adaptive management program?

Kelly Lynch said that she is not going to clarify. You guys are reducing the adaptive management program to a sideshow no one is going to use. Your approach is to go back to numeric standards with variances period.

Moira Davin stated we are providing other compliance options because the adaptive management program may not be for everyone.

Erik Makus clarified that when talking about EPA's perspective, he mentioned compliance schedules, which is what DEQ is proposing with the adaptive management program, not suggesting we are moving to a variance.

Louis Engels asked if the adaptive management program process only exists after the discharger has gone to the limit of technology? Particularly he was referencing Circular DEQ-15 Figure 1-1. If you are going to get to the adaptive management program, you may as well go to the limit of technology anyways. Has that changed at all where adaptive management comes into the process? Where will the adaptive management program be used in the process?

Mike Suplee, DEQ, Water Quality Standards and Modeling, responded that is a misunderstanding on your part. You are correct that RPA is a precursor to entering the adaptive management program. Once in the adaptive management program process, our understanding is that the intermediate phases would be through phosphorus focus. The standard is not meeting ecoregional values, they are a part of the translator, the bigger piece is the response variables. If the response variables are met before limits of technology, then the standard is met.

Louis Engels stated that he just wanted to make sure the flowchart doesn't mean something else.

Mike Suplee responded saying that our flow charts have been difficult to present because they are complicated, might need to break it down if it is causing confusion.

Moira Davin asked if there were any other questions or comments. Would it be helpful to walk through the flowchart again? Please raise your hands if you agree. Two hands were raised, we will reach out to those individuals.

ELIGIBILITY REQUIREMENTS TO ENTER ADAPTIVE MANAGEMENT PROGRAM

Kyle Milke, DEQ, Adaptive Management Program Scientist, presented the eligibility requirements to enter the adaptive management program (slide 9, **Attachment A**). Kyle Milke noted that entry eligibility is different than continued eligibility within the adaptive management program. The two requirements for entry into the adaptive management program are reasonable potential for nitrogen and/or phosphorus and submitting an Adaptive Management Plan (AMP).

Kyle Milke also mentioned that some key considerations to keep in mind when applying for the adaptive management program are determining if the discharger has sufficient resources to meet the monitoring and implementation requirements, can measurable impacts be made in the waterbody (i.e., availability of nonpoint source projects), and that it would be necessary to reapply and resubmit fees if a permittee were to exit the adaptive management program and then decide to re-enter the program.

Kelly asked for clarification on the measurable impacts piece.

Kyle Milke responded that it is in reference to the availability of nonpoint source projects within the watershed. Some facilities may have many nonpoint source projects available in their watershed, while others may not.

Andy Ulven added that it pertains to feasibility. Is an AMP something that will work for your watershed? Is there a lot of nonpoint source contributions (e.g., channel straightening, row cropping, septics, etc.)?

Kelly Lynch asked if DEQ is going to make a decision on whether someone can do an AMP based on an analysis whether the permittee can make measurable impacts?

Kyle Milke responded that no it would be the permittee making that decision.

Sarah Zuzulock, Zuzulock Environmental Services, responded that an AMP needs to be a tool that's more than just trading reductions. In terms of eligibility of the adaptive management program, can you clarify between a compliance plan and a variance?

Andy Ulven responded that what you said is correct. We view the adaptive management program as a long-term compliance schedule and other programs around the country do the same. A variance is separate.

ADAPTIVE MANAGEMENT PROGRAM TEMPLATE

Kyle Milke presented the requirements of the AMP template (slides 11 – 17, **Attachment A**). Kyle Milke stated that the AMP is a merged template of the monitoring and implementation plan templates that were shared with the NWG last year. Kyle Milke then noted this template is still going through the internal review process and it will be shared with the group when it is ready.

Samantha Tappenbeck, Flathead Conservation District, stated that it sounds a lot like the AMP is a compilation of documents that might already exist for a given watershed. Samantha Tappenbeck asked is a discharger that is applying for a permit going to be copying and pasting from those existing documents or are they being asked to update and recreate those documents?

Andy Ulven responded that in watersheds where TMDLs and source assessments are already in place, that's a great starting point, references to those documents would be highly encouraged.

Darrin Kron added that permittees might want to look at the date at when those were written and consider any changes in the watershed since then.

Samantha Tappenbeck mentioned that she came into the NWG with a number of assumptions about the intent of SB358, now that she is hearing perspectives, it seems that Montana has no authority to regulate nonpoint source pollution, so the way we're going to mitigate the impacts of point source pollution is to do essentially nutrient trading credits. It seems we're pushing the responsibility of regulating onto the point source dischargers. We're dancing around the problem of nonpoint source pollution being the major factor in a lot of these cases.

Sara Zuzulock stated thank you for the summary of the template. She can still see what you're describing is a monitoring or sampling plan and not an adaptive management plan. We need to include measurable feedback tools to show you're stepping toward progress toward meeting permit limits. It

identifies projects and says it will monitor them, but the AMP needs to be tied toward progress toward the final effluent limits. Do you have a sense of the timeframe of when the template will be released?

Kyle Milke responded that there is an annual report which is when you will discuss collected data and next steps to achieve reductions.

ANNUAL REPORTING

Kyle Milke presented the annual reporting requirements (slides 19 – 22, **Attachment A**) and noted that he sent out a draft for the NWG to look over. Kyle Milke mentioned that DEQ decided not to provide a template for the annual report, allowing for permittees and contractors to format the report how they like. He noted that the reports may contain more than the minimum elements that were talked about and that the annual report would need to be submitted through FACTS by January 31st of each year.

Dave Clark commented that the expectations for timeframes might be inconsistent with what they see with optimization efforts. Submittal in January may be a problem because they may still be waiting on data and results. Submitting in January cuts off the data analysis period to the third quarter. The planning effort for optimization is a lot longer than DEQ may realize.

Kyle Milke responded that we can talk about the annual report due date and see if we can come up with a better one.

Dave Clark mentioned that March 31st would seem to work better.

Andy Ulven responded that that is something that can be discussed as we move forward.

HOW TO CHOOSE AND APPROPRIATE NONPOINT SOURCE BMP

Andy Ulven presented on nonpoint source best management practices (slides 24 – 36, **Attachment A**). He mentioned several adaptive management program nonpoint source implementation considerations which are dependent on where the permittee is starting in the program (i.e., progress on data collection and optimization). Andy Ulven stated that the permittee needs to know the limiting nutrient and needs to quantify and characterize all sources of nutrient contributions to help identify partners. He then went on to cover various sources of phosphorus and nitrogen in watersheds and showed some pictures of nonpoint source projects. Some examples that were given include bank stabilization, bringing septics online, improvements at concentrated animal feeding operations, and precision agriculture.

Rika Lashley asked in regard to slide 33, **Attachment A** bullet two, how does that dovetail with Circular DEQ-13? Some credits are very small and a disincentive. Do the agriculture best management practices need to have crediting systems if they don't have it? What if we show in the stream a greater reduction, how does that go with a credit system?

Andy Ulven responded that in the AMP when nonpoint source or watershed-scale projects are proposed, there will be an estimated load reduction. If you see in reviewing the data that the reduction was greater than anticipated, I think you could get more credit, or it would at least be factored in.

Eric Sivers, DEQ, Policy Analyst, said that the trading is prescriptive, but the adaptive management program is adaptive and iterative, so we are basing that on what we see in the stream, so yes.

Darrin Kron added that permittees should monitor in areas where they are targeting multiple projects, don't just monitor upstream/downstream of a project.

Andy Efta, U.S. Forest Service, Northern Region, said that he appreciated the overview. He is thinking about how complicated the pathways are for coming up with erosion and sediment delivery related estimates. The Forest Service has models for identifying magnitude and the extent of potential sediment delivery associated with management activities. When it comes to identifying nutrient reductions, it is highly complicated. Does DEQ have any specific recommendations about what that process would look like in the planning and implementation effort?

Andy Ulven responded that DEQ does not want to be prescriptive about specific modeling tools or how load reduction estimates are calculated but they are a required component of the implementation phase. In Montana, there are limited opportunities for nonpoint source best management practices. It will be up to the discharger to demonstrate where and how much will come from projects in the plan submitted to us for review.

Andy Efta responded that makes sense to have flexibility there. It might be worth having more conversation about what those calculations might look like.

Samantha Tappenbeck said that thinking further down the line she is trying to envision the role of conservation districts. She asked will there be additional funds through 319 grants to support nonpoint source projects that are identified as a priority through the adaptive management program? There will be partners and grant application sponsors, but perhaps the role of the adaptive management program stakeholders is just to identify best management practices projects and to reach out to landowners, and maybe the point source discharger is the one footing the bill. Funding is difficult.

Andy Ulven responded that at this time we are not anticipating an increase in 319 grant funding. DEQ would certainly leave the funding package and how to best fund a project up to the discharger or whoever is proposing the AMP to take advantage of funding opportunities out there. He reminded everyone that Mark Bostrom spoke in a past meeting about funding opportunities. Conservation districts could provide technical assistance as part of the partnership group within an AMP.

Eric Sivers responded to a comment from Kelly Lynch by saying that you identified major reasons why a discharger may pursue the adaptive management program. In terms of the narrative standard, it is determined by measuring response variables. The adaptive management program provides a compliance tool for laying out those reductions and how they are tracked and reported.

Kelly Lynch stated in the chat that the issue is not the adaptive management program itself, it is more with the process leading up to it.

PUBLIC COMMENT

Moira Davin then opened the meeting up for public comment (slides 40, **Attachment A**).

Ed Coleman, City of Helena, asked DEQ to please clarify since it sounds like as a point source, I will have an end of pipe/mixing zone numeric limit in my permit based on a numeric translator. Say I fence cows out as part of my AMP, and it improves the water quality downstream, do I no longer have to meet my end of pipe standard? How does that work?

Eric Sivers responded saying that you will still need effluent limits in your permit which would be subject to the permitting process. There would continue to be some sort of effluent limit on receiving water quality.

Darrin Kron responded that if the cows are upstream, it will provide mixing towards meeting the downstream limit.

Ed Coleman stated but he would have end of pipe limits to meet.

Eric Sivers responded that RPA will look different if the water quality improves, that could change in successive permit cycles.

Moira Davin then covered the meeting summary (slide 41, **Attachment A**).

Meeting ended at 11:09 a.m.

ATTACHMENT A: AUGUST 16, 2023 NUTRIENT WORK GROUP MEETING PRESENTATION SLIDES

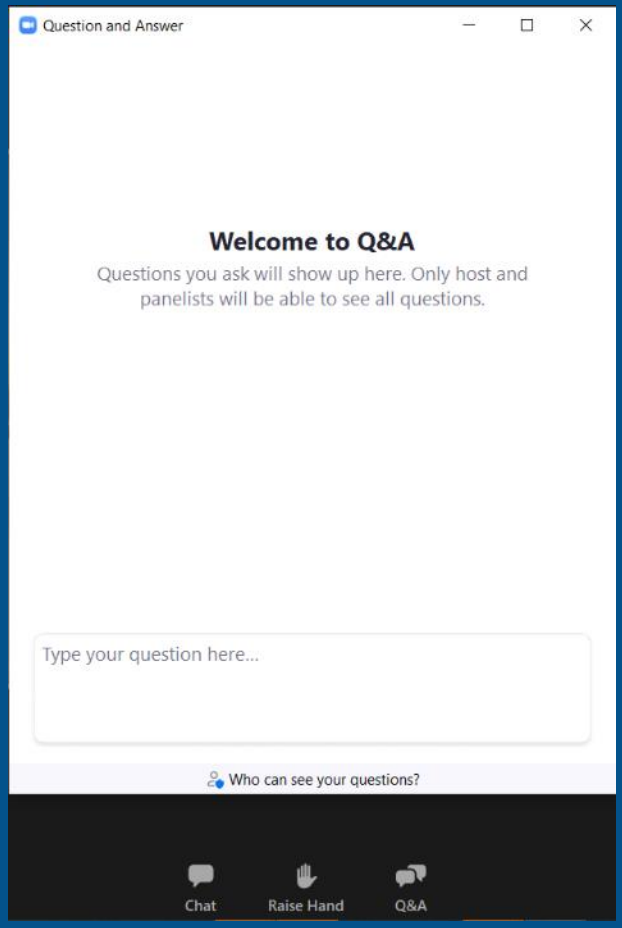
Nutrient Work Group

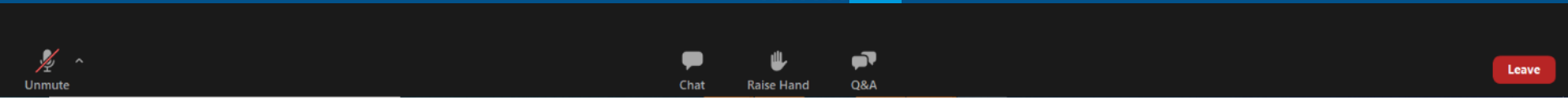
August 16, 2023

DEQ MONTANA

Welcome!

- This meeting is a webinar
- NWG members will be panelists
- Members of the public can raise their hand or use the Q&A feature to ask questions during the public comment portion of the meeting
- *9 raises your hand if you're on the phone
- State your name and affiliation before providing your comment





DEQ MONTANA

Agenda

Meeting Goal: Discuss program eligibility, the adaptive management plan template, and annual reporting requirements. EPA will be discussing the technical support document approach.

Preliminaries
- Agenda
- Nutrient Work Group Roll Call

DEQ Updates
- Staff Updates

Technical Support Document Approach

Adaptive Management Program Eligibility

Adaptive Management Plan Template

Annual Reporting

How to Choose an Appropriate Nonpoint Source BMP

Public Comment & Close of Meeting
- Public Comment

DEQ MONTANA

Roll Call

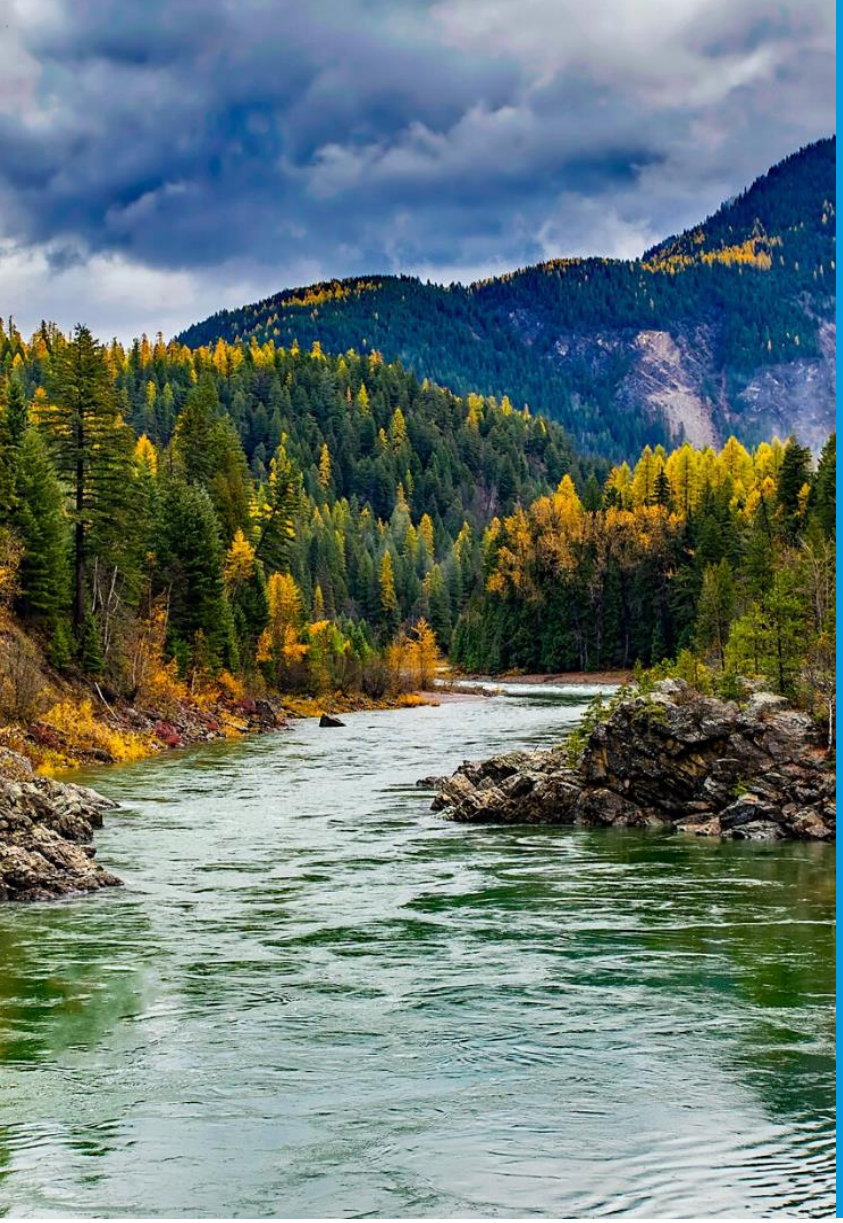
Nutrient Work Group Members

Interest Group	Representative	Substitute
Point Source Discharger: Large Municipal Systems (>1 MGD)	Louis Engels	
Point Source Discharger: Middle-Sized Mechanical Systems (<1 MGD)	Shannon Holmes	
Point Source Discharger: Small Municipal Systems with Lagoons	Rika Lashley	
Point Source Discharger: Non-POTW	Alan Olson	
Municipalities	Kelly Lynch	
Mining	Matt Vincent	
Farming-Oriented Agriculture	Karli Johnson	
Livestock-Oriented Agriculture	Raylee Honeycutt	
Conservation Organization - Local	Kristin Gardner	
Conservation Organization – Regional	Sarah Zuzulock	
Conservation Organization – Statewide	David Brooks	
Environmental Advocacy Organization	Guy Alsentzer	
Water or Fishing-Based Recreation	Pete Cardinal	
Federal Land Management Agencies	Andy Efta	
Federal Regulatory Agencies	Tina Laidlaw	
State Land Management Agencies	Jeff Schmalenberg	
Water Quality Districts / County Planning Departments	Nick Banish	
Soil & Water Conservation Districts – West of the Continental Divide	Samantha Tappenbeck	
Soil & Water Conservation Districts – East of the Continental Divide	Dan Rostad	
Wastewater Engineering Firms	Scott Buecker	
Timber Industry	Julia Altemus	

DEQ Updates

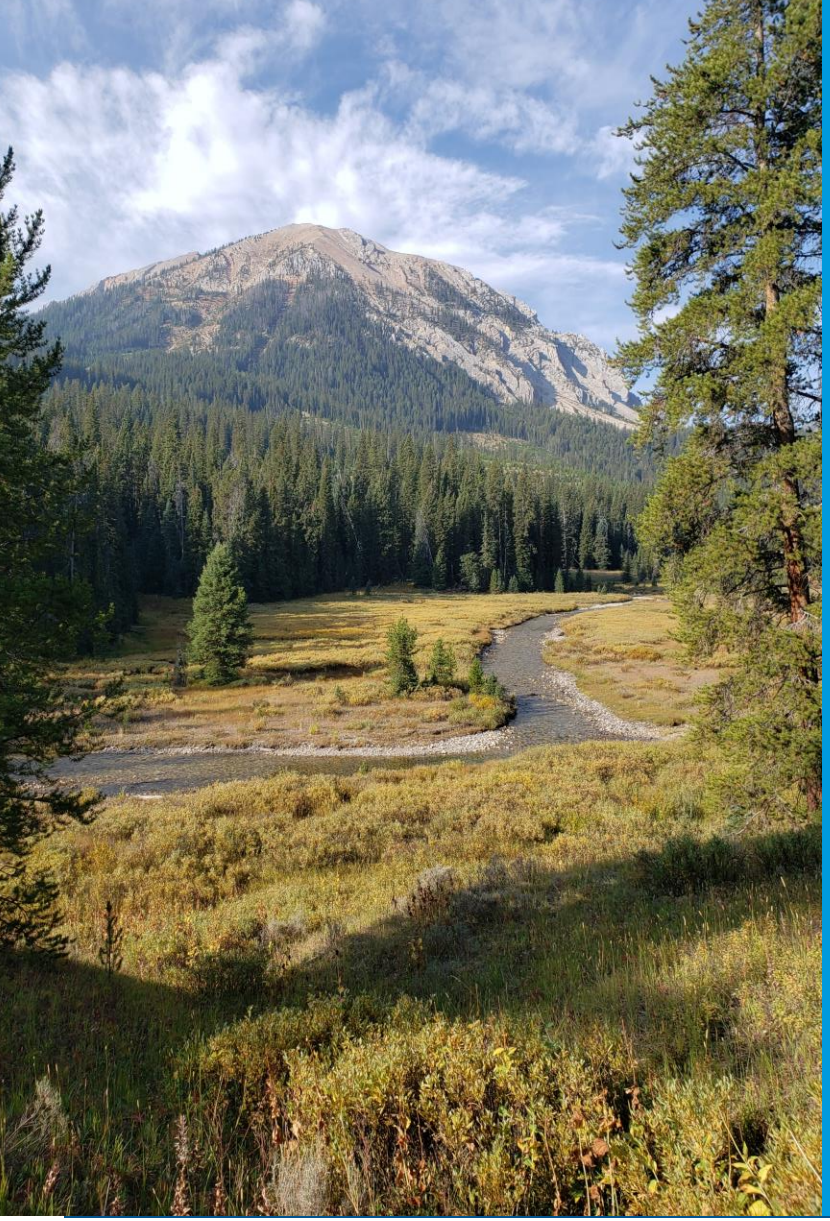
DEQ Updates

- Staff updates



TSD Approach

DEQ MONTANA



Eligibility Requirements to Enter Adaptive Management Program

DEQ MONTANA

Eligibility Requirements to Enter Adaptive Management Program

- Entry eligibility
  - Different than continued eligibility
  - Reasonable potential – nitrogen and/or phosphorus
  - Submit Adaptive Management Plan (AMP)
- Key Considerations
  - Resources
  - Measurable impacts
  - Exiting Adaptive Management Program

DEQ MONTANA

Adaptive Management Plan Template

DEQ MONTANA

Adaptive Management Plan (AMP) Template

- Merged monitoring and implementation plan
- Problem definition and background
  - Adaptive Management Program phase
  - Monitoring goals
- Watershed description
  - Location and boundaries
  - Hydrology
  - Climate
  - Land cover and land uses

AMP Template - Standards, Objectives, & Sampling Design

- Nutrient Water quality Standards
  - Stream classifications and beneficial uses
- Objectives and sampling design
  - Monitoring objectives
  - Sampling design
  - Monitoring locations
  - Monitoring timeframe and schedule
  - Parameters

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AMP Template - Monitoring Team and Field Procedures

- Project team roles and responsibilities
- Order of operations
- Field forms and sample labels
- Data collection procedures
- Changes to the field sampling plan
- Field health and safety procedures

AMP Template - Sample Handling and Lab Analysis

- Sample handling and delivery
- Lab chain of custody
- Laboratory analytical requirements
- Quality assurance and quality control
  - Describe the training and qualifications
  - Instrument calibration and maintenance
  - Data quality indicators

AMP Template - Data

- Data review and validation
- Data management
- Data analysis and reporting
  - Data analysis
  - Reporting – Submit EDDs through MT-eWQX

AMP Template - Implementation

- Facility-scale
  - Optimization
  - Facility improvements
- Watershed-scale
  - Source assessment
  - Partners assisting with implementing nutrient reductions
  - Action items for the reduction of nutrients in the watershed
  - Ability to fund and implement the plan

Adaptive Management Plan Template

- Future data collection
- Timeframes for implementing the AMP and annual reporting
- Outreach strategy and communication plan

Annual Reporting

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Monitoring Summary

- Near field
  - Up/down stream summary of nutrient stats
  - Up/down stream summary of response variable stats
    - Summarize dissolved oxygen Δ data
    - Summarize macroinvertebrate data
- Watershed – For modeling or nonpoint source implementation trading
- If response variables are not met, develop a plan of action
- In the first annual report, results from nutrient diffusing substrates
- Deviations from adaptive management sampling plan
  - Annual % completeness by measurement
  - Description of problems encountered (lab/field issues)
  - Flagged data summary
  - Corrective measures for next year
  - A plan to overcome lacking/lagging data to meet program timelines

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Monitoring Summary (Cont'd))

- Reductions
  - Maintained
  - What was done
  - Areas for improvement
- Upgrades
- Monitoring data
- Deviations from AMP
- Plan for meeting interim and final limits
- Plans for NPS work if in watershed-scale phase

Implementation Summary

- Optimization efforts
  - Plan
  - Do
  - Study
  - Act
- Annual optimization reductions comparison
- Maintain reductions expressed as:
  - Rolling annual average
  - Concentration and mass reduction
- Technical assistance received from DEQ
  - Recommendations

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Implementation Summary

- What is being monitored to achieve reductions
- What has been done to achieve reductions
- Efforts to maintain reductions
- Areas for improvement
- Nonpoint source agreements (if in watershed-scale implementation)
  - Progress on NPS work or potential NPS projects
  - Expected timeline for completion
  - Expected and realized reductions
- Upgrades (if performed)
  - Planned completion date or if already completed, when?
  - What upgrades were done
  - Expected and realized reductions

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Choosing Appropriate NPS BMPs

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Implementing NPS Projects

- Practices designed to protect or improve the physical, chemical, or biological characteristics of water resources (DEQ 2017)

- “Reasonable land, soil, and water conservation practices" - *methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include, but are not limited to, structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution-producing activities.* (ARM 17.30.602(23))

- Most NPS implementation of BMPs is voluntary

- Through AMP, NPS project implementation would be assured through contracts and measured as part of an ongoing monitoring program

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AMP Nonpoint Source Implementation

- Considerations:
  - Are NPS projects warranted?
  - Is P-prioritization appropriate?
  - Was optimization sufficient?
  - Where are you at in the AMP process?
  - Surface and groundwater pathways

AMP Nonpoint Source Implementation

- Quantify and characterize all sources of nutrient contributions
- Identify partners
- Develop and document action items for the reduction of nutrients in the watershed
  - Facility Improvements, Optimization
  - Nutrient Trading
  - **Implementing NPS Projects**

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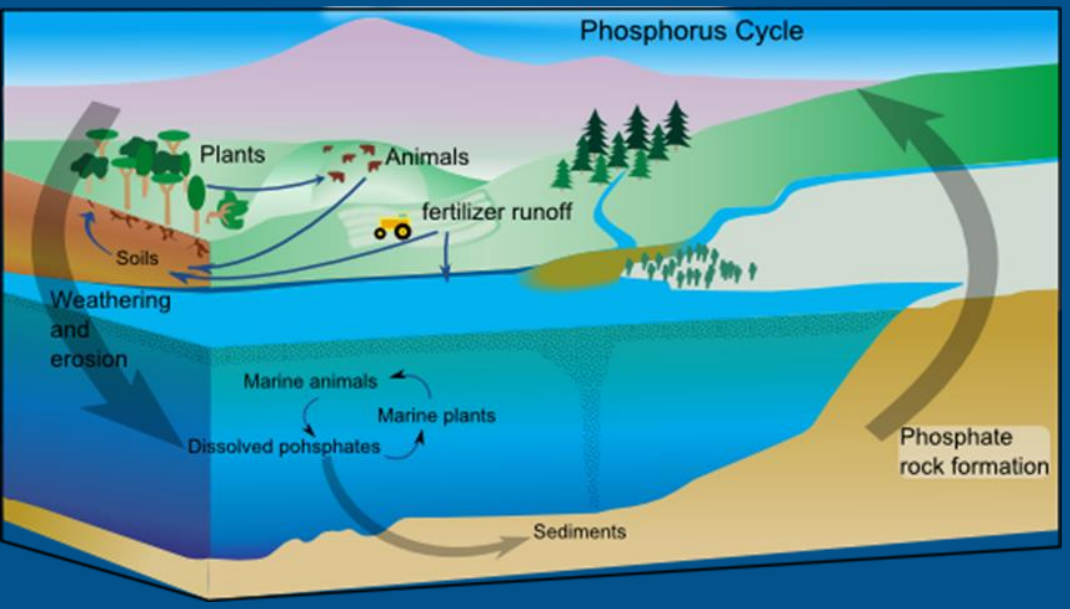
Implementing NPS Projects:
Phosphorus Sources



- Among most limiting biogeochemicals/nutrients in aquatic ecosystems
- Primarily bound in rock and sediment
- Released by erosion, weathering, leaching, and mining
- Used/recycled by plants and animals

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Implementing NPS Projects:
Phosphorus BMPs

- Channel restoration (connecting to floodplain, adding sinuosity, etc.)
- Riparian buffers, other row crop ag BMPs
- Off-channel livestock watering, hardened water crossing
- Road improvements, restoring unused roads
- Culvert replacement

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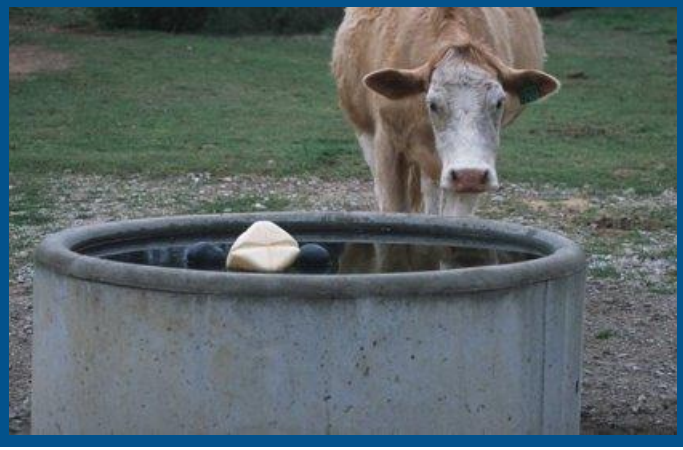
Phosphorus BMPs



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NPS P-reduction Projects

Dry Creek (lower Gallatin) - before (2018 and after (2019)

East Fork Bitterroot – before (2017) and after 2021

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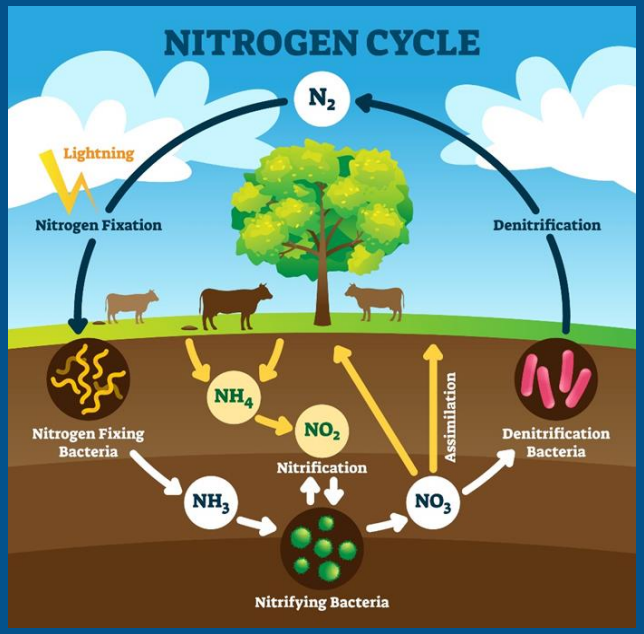
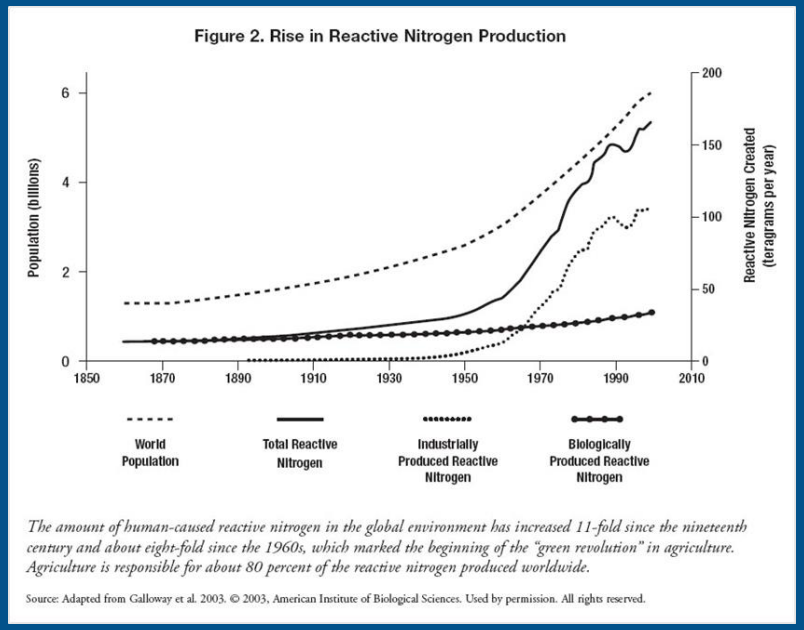
Implementing NPS Projects:
Nitrogen sources

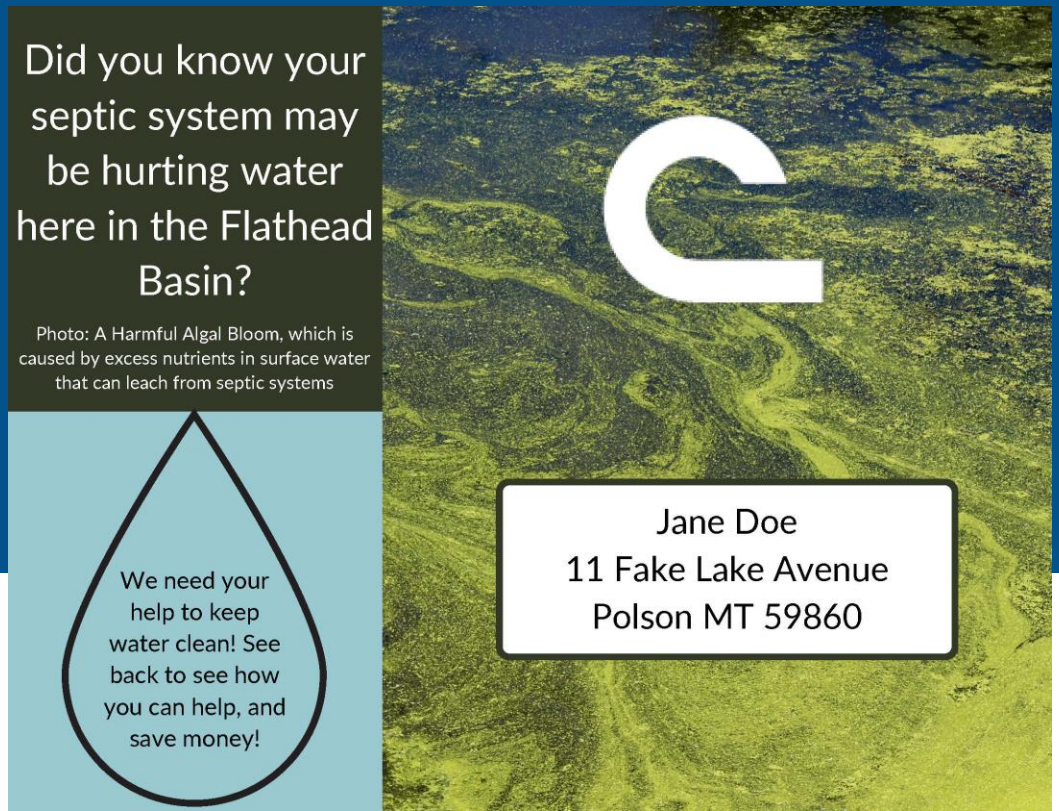
- Three primary sources: #1, #2, and the atmosphere





Nitrogen BMPs

- Connection of septic systems to centralized treatment systems
- Nutrient management plans, improvements at CAFOs
- Precision agriculture



NPS BMPs: Assurance is in the Stream

- Projects proposed for NPS implementation in an AMP must identify BMPs, project site factors, agreements, and estimated load reductions.
- Achieving nutrient reductions must be demonstrated through in-stream data collection efforts and reported via annual reporting.
- If milestones are not met/expected reductions are not achieved, AMP eligibility could be reconsidered.

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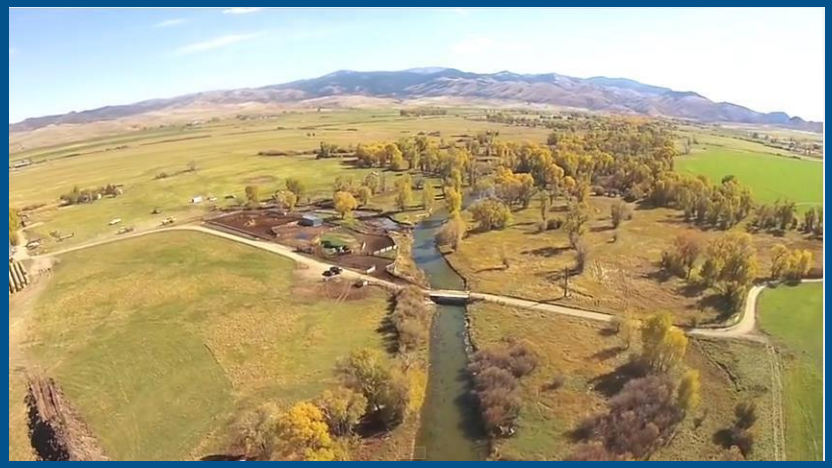
Implementing NPS Projects

Load reduction success depends on many factors including:

- Location (e.g., geology, existing vegetation)
- Scale
- Time
- Existing and historical and use
- Landowner support – long-term sustainability

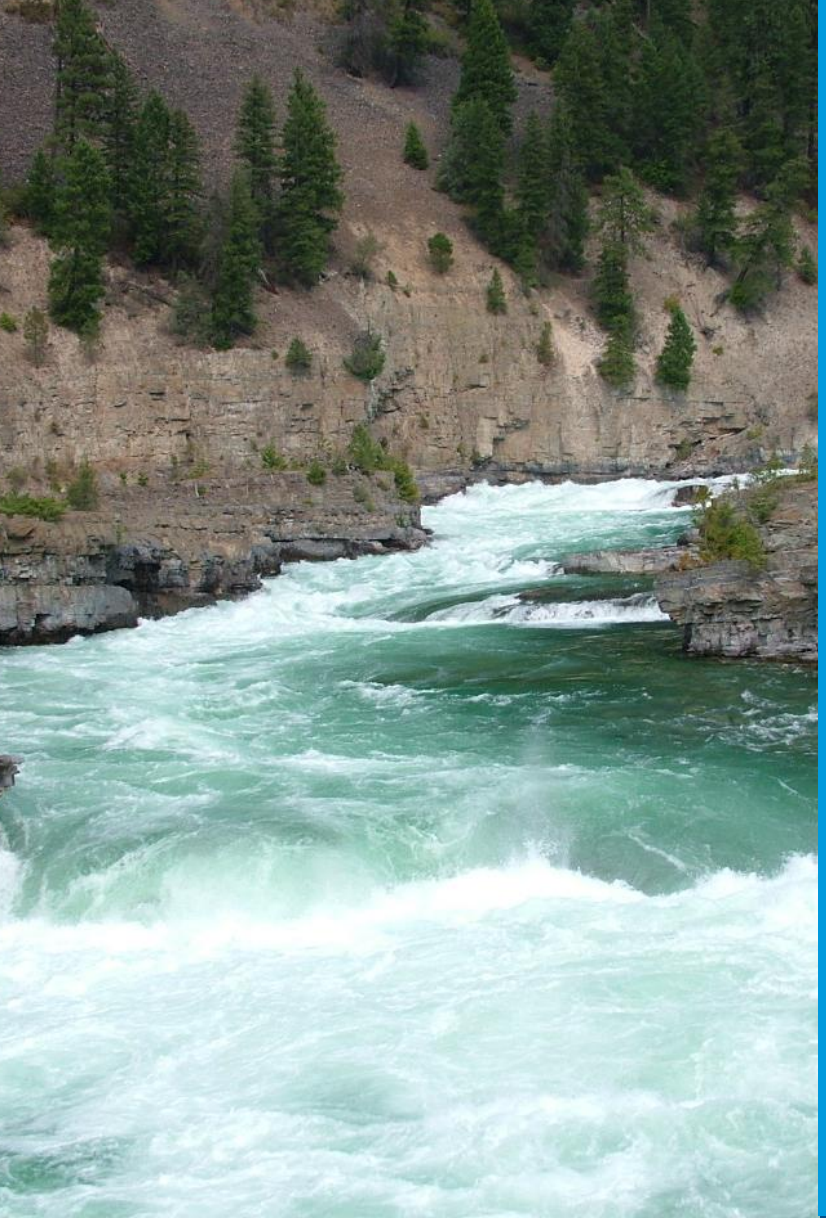
Implementing NPS Projects

Miller Ranch on the Ruby River before and one year after the relocation of a corral close to stream and restoration of stream sinuosity and wetland habitat



Resources

- Agricultural BMPs
  - DEQ NPS Management Plan
  - NRCS MT Field Office Technical Guide
  - Nutrient Management Plan – NRCS
  - Best Management Practices to Minimize Agricultural Phosphorous Impacts on Water Quality
- Montana Forestry BMPs (DNRC)
- Construction Stormwater BMPs (DEQ)
- CAFO Nutrient Management Plan - Nine Minimum Practices



Upcoming Meetings

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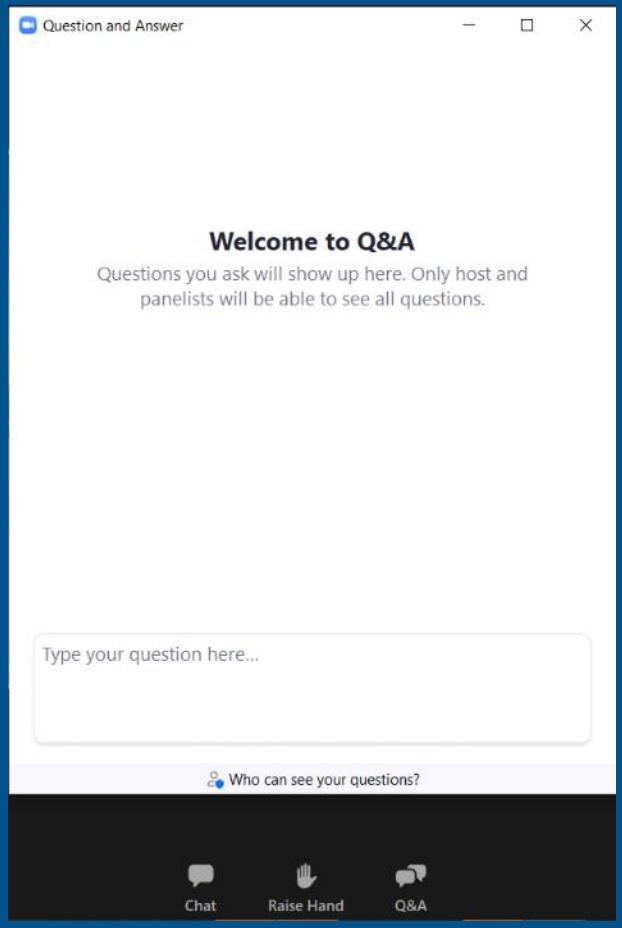
Upcoming Meeting Schedule

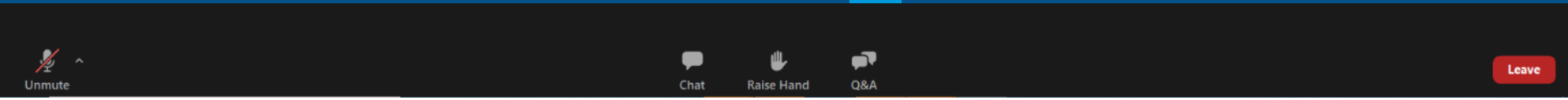
- September 14, 2023 9 – 11:00 a.m.
- October 16, 2023 9 – 11:00 a.m.
- November 14, 2023 9 – 11:00 a.m.

Public Comment

Questions/ Comments

- Raise hand (*9 if on the phone) or type questions into the Q&A
- DEQ will unmute you if you wish to provide your comment orally
- If calling by phone, press*6 to unmute
- State your name and affiliation before providing your comment





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Meeting Summary

- Adaptive Management Program entry eligibility
  - Reasonable potential
  - Submit AMP
- There is now a singular AMP template
  - Phased effort
  - More detail built in over time
  - AMP Scientist will be available for consultation
- Annual reporting
  - List of requirements
  - Submitted through FACTS by January 31 of each year
- Choosing appropriate NPS BMPs
  - BMP implementation assured through contracts
  - Assurance is in the stream

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Thanks for Joining Us

Contact:
Kyle Milke
kyle.milke@mt.gov

To submit comments or questions

Submit Comments or Questions

https://deq.mt.gov/water/Councils

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