NUTRIENT WORK GROUP MEETING SUMMARY
AUGUST 25, 2021

9:00 a.m.
Hybrid Meeting: Zoom and DNRC Montana Room

ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Susie Turner City of Kalispell	Point Source Discharger: Large Municipal Systems (>1 MGD)
Shannon Holmes City of Livingston	Point Source Discharger: Middle-Sized Mechanical Systems (<1 MGD)
Rika Lashley Morrison-Maeirle	Point Source Discharger: Small Municipal Systems with Lagoons
Alan Olson Montana Petroleum Association	Point Source Discharger: Non-POTW
Scott Buecker AE2S	Wastewater Engineering Firms
Kelly Lynch Montana League of Cities and Towns	Municipalities
Pete Schade Lewis and Clark County Water Quality Protection District	County Water Quality Districts or Planning Departments
Tammy Johnson Montana Mining Association	Mining
Kristin Gardner Gallatin River Task Force	Conservation Organization: Local
Sarah Zuzulock Zuzulock Environmental Services	Conservation Organization: Regional
David Brooks Montana Trout Unlimited	Conservation Organization: Statewide
Guy Alsentzer Upper Missouri Waterkeeper	Environmental Advocacy Organization
Guy Alsentzer (sub. for Wade Fellin) Upper Missouri Waterkeeper	Water or Fishing-Based Recreation
Andy Efta U.S. Forest Service, Northern Region	Federal Land Management Agencies
Tina Laidlaw U.S. Environmental Protection Agency	Federal Regulatory Agencies
Jeff Schmalenberg MT Dept. of Natural Resources and Conservation	State Land Management Agencies
Samantha Tappenbeck Flathead Conservation District	Soil and Water Conservation Districts – West of the Continental Divide

Representative & Affiliation	Representing
Dan Rostad Yellowstone Conservation District Council	Soil and Water Conservation Districts – East of the Continental Divide
Julia Altemus Montana Wood Products Association	Timber Industry

NOT IN ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
John Youngberg Montana Farm Bureau	Farming-Oriented Agriculture
Jay Bodner Montana Stockgrowers Association	Livestock-Oriented Agriculture

ATTENDANCE: OTHER PARTICIPANTS

Aaron Losing, City of Kalispell
Abigail St. Lawrence, Montana Building Industry Association
Adam Sigler, Montana State University Extension
Amanda McInnis
Amelia Flanery, DEQ Surface Water Discharge Permitting
Andrew Gorder, Clark Fork Coalition
Bill Andrene, City of Butte
Brian Heaston, City of Bozeman
Christina Staten, DEQ, Watershed Protection Section
Coralynn Revis, HDR
Darrin Kron, DEQ, Monitoring and Assessment Section Supervisor
David Clark, HDR
David Galt, Montana Petroleum Association
Ed Coleman, City of Helena
Eric Regensburger, DEQ, Water Quality Standards and Modeling Section
Erik Makus, EPA Region 8
Erin Wall, Montana Rural Water Systems
Galen Steffens, DEQ, Water Quality Planning Bureau Chief
George Mathieus, DEQ, Deputy Director
Griffin Nielsen, City of Bozeman
Haley Sir, DEQ, Surface Water Discharge Permitting
Hannah Riedl, DEQ, Watershed Protection Section
Heather Henry, DEQ, Surface Water Discharge Permitting
Jason Mohr, Legislative Environmental Policy Office
Jeff Dunn, WGM Group
Jeff May, DEQ, Surface Water Discharge Permitting
Jenny Chambers, DEQ, Waste and Remediation Division Administrator
Joe Lierow, ExxonMobil Billings Refinery
John Bernard
Katie Makarowski, DEQ, QA/QC Officer
Kayla Glossner, DEQ, Surface Water Discharge Permitting
Kristy Fortman, DEQ, Watershed Protection Section Supervisor

Logan McInnis, City of Missoula
Louis Engels, City of Billings
Mark Ockey, DEQ, Watershed Protection Section
Martin Van Oort, DEQ, Mining Bureau, Coal Section
Maya Rao, DEQ, Surface Water Discharge Permitting
Michael Kasch, HDR
Michelle Pond, WGM Group
Mike Suplee, DEQ, Water Quality Standards and Modeling Section
Mikindra Morin – Northern Plains Resource Council
Moira Davin, DEQ, Public Information Officer
Myla Kelly, DEQ, Water Quality Standards and Modeling Section Supervisor
Paul Skubinna, City of Great Falls
Peggy Trenk, Treasure State Resources Association
Rainie DeVaney, DEQ, Surface Water Discharge Permitting Section Supervisor
Rickey Schultz, HDR
Ryan Sudbury, City of Missoula
Scott Buecker, AE2S
Ted Barber, Meeting facilitator

MEETING INITIATION

Ted Barber, meeting facilitator, welcomed everyone to the meeting just after 9 a.m. George Mathieus, DEQ's Deputy Director, gave opening remarks and reiterated the importance of the Nutrient Work Group, highlighting the need for open dialog, participation, and communication. Ted then reviewed ground rules for the meeting and the roles and responsibilities of Nutrient Work Group members (found on slides 5 and 6 of **Attachment A**). Ted also took a roll call of Nutrient Work Group members present either via Zoom or in the Montana Room of DNRC's Headquarters building in Helena.

TECHNICAL SUBCOMMITTEE REPORT: WESTERN AND EASTERN MONTANA THRESHOLDS, SAMPLE TYPE, AND FREQUENCY

Mike Suplee, Water Quality Science Specialist, went through slides 9 through 24 of **Attachment A**. Slide 9 shows the basic structure DEQ has come up with so far for an AMP watershed, noting that if the watershed is small enough, the near field sites could be the extent of the monitoring if there is a single discharger. In contrast, slide 10 shows a more complicated example with multiple dischargers and both near field and far field monitoring sites. Slide 12 shows pictures of nuisance algal growth in western Montana, which is one of the main things to be controlled through this process. Slide 13 summarizes DEQ's recommended response variables and thresholds for western Montana wadeable stream and medium rivers, which are applicable to the green and gray zones shown on the map during the index period (growing period). Slides 14 and 15 summarize the recommended sampling frequency for these response variables. Subsequently, slides 16 through 18 summarize the recommended response variables and thresholds and their sampling frequency for eastern Montana wadeable streams and medium rivers; applicable to the orange area of the map during the index period of July 1 through September 30. Mike noted that it will be valuable to collect flow with all of these sampling events for the purpose of calculating nutrient loads.

Slides 19 and 20 provide information on the relative change upstream and downstream of a point source (for near field sites). Slide 20 shows three scenarios of how upstream and downstream sites will

provide information that can be used to help inform the assessment and compliance decisions on what to do next in the watershed. On the far left, scenario 1 shows no real distinct differences, as both upstream and downstream essentially meet the threshold of 125 mg/m^2 of benthic chlorophyll-a, indicating not much of an effect from the point source. In scenario 2 (middle chart), there is a large effect from the point source, as upstream algae levels are low but downstream are almost always higher than the threshold. In scenario 3, algae levels both above and below the point source are very high, showing a case where the water quality already has enough nutrients and algae growing and the immediate effect of the facility is not manifested at the monitoring site.

Mike then discussed using mechanistic water quality models for large rivers to see what scenarios would meet beneficial uses. Slide 22 shows the parameters that could be modeled. Slide 23 shows a Model Selection Decision Tool that is available for people to select the appropriate water quality model, based on modeling objectives. Mike noted that DEQ will be providing additional guidance on this subject, including details on minimum expectations, data collection, how to define the watershed for a model, etc. This guidance will be available by November.

Discussion

Kelly Lynch, municipalities representative, wrote in the chat box that "we don't agree with any of this approach on the response variables. All you are proposing is going down the same numeric approach with a variance. We told you that in the letter. Everyone in the room has already heard this. We need an open conversation at this point."

Sarah Zuzulock, regional conservation organizations representative, wrote in the chat box "Conservation stakeholders are not supportive of this approach with response variable thresholds established at a nuisance level indicating impairment. Response variable thresholds need to be established to meet non degradation criteria."

DISCUSSION ON CONSOLIDATING TECHNICAL SUBCOMMITTEE AND NUTRIENT WORK GROUP MEETINGS

The idea was posed by Kelly Lynch, Municipalities representative, to consolidate the Technical Subcommittee and Nutrient Work Group to meet every two weeks. Rainie DeVaney, supervisor of the surface water discharge permitting program, noted the intent of the Technical Subcommittee meetings is to have technical people present and the Nutrient Work Group meetings to be more about policy. Galen Steffens, Bureau Chief of DEQ's Water Quality Planning Bureau, stated she wanted to flag that if we do change the structure and meet every other week, members must provide feedback immediately after meetings, so DEQ has time to turnaround and produce documents needed by the next meeting. Rainie also noted that the Technical Subcommittee meetings are open to everyone and there is nothing prohibiting people from attending all meetings, but she is hearing feedback that things are repetitive.

Amanda McInnis, Technical Subcommittee municipalities representative, noted regarding the format of meetings that DEQ giving a PowerPoint every time does not lead to a collaborative atmosphere and that the fundamental structure of meetings should be reconsidered.

Sarah Zuzulock asked where to find the proposal the point source dischargers submitted to DEQ. Christina Staten, DEQ Water Quality Specialist, noted in the chat box that a letter submitted by the sponsors of Senate Bill 358 was posted to the files of the Nutrient Work Group Teams channel.

Kelly stated that the municipalities and point source dischargers have an hours' worth of material to present at the next meeting. She further stated that their presentation lays out what they see the AMP process looking like successfully and want feedback from others.

The following comments in support of the consolidation idea were recorded in the Zoom chat box:

> Tammy Johnson, mining representative, wrote that she agreed with Kelly and "we are wasting very precious time reviewing the slide show a second time. The overlap with the Technical Subcommittee and the Nutrient Work Group is extensive and I think most everyone on the call also participated in the last technical subcommittee meeting. We also need to talk about how others may view the approach to this rulemaking."
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> Alan Olson, non-POTW point source discharger representative, wrote "I think that in the interest of time, the Technical group needs to be merged into the Working group. The same people are on both calls, taking up valuable time. The groups can meet together on the Technical group schedule."
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> Susie Turner, large point source dischargers representative, wrote "I agree, if the meetings were combined we could use everyones time more efficiently."
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> Rika Lashley, small point source dischargers representative, wrote "I also agree - the time spent repeating things could be used for better conversation and discussion during the meetings."
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> Louis Engels, large point source dischargers alternate representative, wrote "I think a more open discussion from the nutrient work members on how they think the amp should go would be more beneficial than the stand and deliver lecture series approach. To George's comment at the beginning, I think that would create more open dialogue and input from the group."
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> Shannon Holmes, middle-sized point source dischargers representative, wrote "I agree on combining the groups and meeting every two weeks."
>
> Louis Engels also wrote "I concur with Kelly. Combine them and streamline the process."
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> Ed Coleman, with the City of Helena, wrote "The City of Helena agrees with Kelly and Alan."
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> Kristin Gardner, local conservation organizations representative, wrote "I agree with this approach."
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> Paul Skubinna with the City of Great Falls wrote "City of Great Falls agrees with Kelly and Alan."
>
> Brian Heaston with the City of Bozeman wrote "city of Bozeman agrees that consolidation should occur."
>
> Susie Turner also wrote "The large discharge group concurs with Kelly and Alan."
>
> Scott Buecker, Technical Subcommittee representative for middle-sized point source dischargers, wrote "I agree with consolidation and bi-weekly meetings."

Shannon Holmes also wrote “City of Livingston and mid size discharges agree with Kelly and Alan.”

Other chat box comments regarding this topic as well as discussion about having stakeholder presentations included:

Samantha Tappenbeck, representative of soil and water conservation districts west of the continental divide, wrote “Perhaps the summaries from the technical subcommittee meetings could be an action item for review prior to the meeting instead of presented during the meeting.”

Amanda McInnis, Technical Subcommittee municipalities representative, wrote “I think we need to depart from MDEQ providing all the content at all of the meetings and have content from other stakeholders.”

Paul Skubinna with the City of Great Falls wrote “Other proposals on the framework for AMP should be acknowledged and allowed to be aired.”

Tina Laidlaw, federal regulatory agencies representative, wrote ”If we combine groups, I would suggest sticking with the existing schedule for the technical subcommittee meetings.”

Brian Heaston with the City of Bozeman wrote “DEQ should accept proactive feedback. currently it's reactive. there's been little opportunity to present other ideas of what the AMP looks like and to have a meaningful dialogue about it.”

Louis Engels wrote “I've attended all the Technical Subcommittee and NWG meetings and the content has been largely the same.”

Sarah Zuzulock wrote “Conservation was not aware of the proposed meeting change - would like to see the proposal submitted to DEQ. Can you please email all stakeholders the proposal? Changes to the meeting schedule can be difficult to accomplish, and if we change the meeting schedule again please circulate a doodle poll to ensure stakeholder participation.”

Rika Lashley wrote “I agree with Brian Heaston's comment. It might be more productive to have different groups provide their proposals for what the AMP could look like and then work to find common ground, rather than just reacting to DEQ's proposals.”

Louis Engels wrote “I think that is part of the problem with the current approach like Sarah says. The stakeholders don't know what each other are submitting.”

Ed Coleman with the City of Helena wrote “The City of Helena concurs with Bozeman and Rika to have different groups provide their proposals for what the AMP could look like and then work to find common ground.”

Susie Turner wrote “As noted by Kelly....The large point source discharges don't concur with the response variables - threshold methods as proposed, instead we'd like the opportunity to propose alternative methods to AMPs.”

Tammy Johnson wrote "I agree that the point sources dischargers need to lay out their vision that drove the legislation."

MEETING FOCUS DISCUSSION: RESPONSE VARIABLES USE IN MPDES PERMITS

Rainie DeVaney, supervisor of the surface water discharge permitting program, discussed slides 31 through 47 of **Attachment A**. Slide 31 is a refresher of the Adaptive Management Program flow chart and where the dialog started. Slides 32 and 33 show foundational concepts that will work their way into the MPDES process, including reasonable potential analysis (RPA) which can be quantitative or qualitative. RPA is more straightforward when we have numeric standards but becomes qualitative with narrative water quality standards and DEQ will be using response variable thresholds from near field sites in the analysis. Can also have narrative effluent limits, which include things like best management practices and optimization. Rainie noted that slide 34 represents a situation-dependent process and the conditions shown will be additive to conditions already in permits (they are not meant to replace monitoring already required by a permit). Slide 34 is intended to show how DEQ thinks MPDES permit conditions could change through time, once there is an approved watershed-scale monitoring plan in place. The first phase adds response variables via relative change. The second phase remains relatively the same, but red text shows the progress of accomplishing additional steps of the AMP process. In the third phase, DEQ could be asking permittees to firm up commitments from stakeholders and may convert response variable data into new numeric limits in the permit. Slide 35 then relates each of the three phases back to the AMP process flow chart. Slide 36 articulates transitions between phases of what DEQ will be looking at via a reasonable potential analysis. Rainie noted that slide 37 is not an all-inclusive list of additional MPDES considerations and that conditions for permits will be tailored on a case-by-case basis. She also noted an example of when a nutrient reopener provision might take affect might include times when DEQ continues to see regular exceedances of effluent limits.

Slide 38 shows four scenarios that permittees will essentially fall into, but these are broad categories. Rainie noted that a great benefit of the AMP process is that in time, we will have site-specific information on effluent quality and how the stream is responding to the point source – in time, we will have a larger data set and will know more about each watershed and how it responds to nutrients. Slides 39 through 46 subsequently show a map representing each scenario and the conditions expected in a permit for that scenario. Slide 47 then shows what potential instream additional response variable monitoring might look like in a permit, and only represents near field monitoring sites.

Discussion

Tammy Johnson wrote in the chat box "I think an AMP needs to be site specific; setting out the response variables to monitor is the correct approach, but setting thresholds should be done as a process of the AMP and not prior to the AMP." Mike Suplee responded verbally asking if Tammy had recommendations on how the threshold should be established. Tammy then responded verbally stating that it does have to be site-specific and that each point source discharger needs to develop an AMO which will tell us what's going in in the water and what needs to be done.

Tammy Johnson also wrote in the chat box "I disagree that we should use reasonable potential analysis for nutrients. I don't think that is the right tool. Could someone much smarter than me weigh in please?" Rainie DeVaney responded verbally that MPDES permits are required to analyze whether there is reasonable potential and DEQ can't back away from this. Rainie further stated that there are different ways we can analyze reasonable potential, but it is a requirement.

Louis Engels wrote in the chat box "Isn't Reasonable Potential used for toxics rather than for nutrients? Why are we treating nutrients as toxics?" Rainie DeVaney responded verbally that is a requirement to conduct reasonable potential analysis for any pollutant that is present in the discharge, whether that's toxins, carcinogens, nutrients, etc.

Sarah Zuzulock wrote in the chat box "Will reliance on response variables result in numeric effluent limits for N and P in a MPDES permit? Second, use of the response variable data indicating impairment is not consistent with non-degradation requirements." Rainie responded verbally that permits will retain any existing total nitrogen (N) and total phosphorus (P) effluent limits. Mike added that if there are N and P limits, those are status quo. If it is found the response variables are acceptable in a waterbody downstream of a facility, additional increased limits may not be required.

Guy Alsentzer, environmental advocacy organization representative, wrote in the chat box "It may be helpful for folks to read EPA's NPDES Permit Writer Manual, subsection Water Quality Based Effluent Limits, which includes a discussion of why a reasonable potential analysis is used for any pollutant discharged by a regulated entity. https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf" Guy further clarified with the statement: "*any pollutant that requires additional controls above and beyond a standardized technology based effluent limit."

Guy also stated in the chat "We are concerned that DEQ is conflating the concept of a NPDES permit reopener with the mandatory duty to ensure any NPDES permit contains, at the date of issuance, terms at time of issuance, are sufficient to protect receiving water quality. That determination cannot be kicked down the road to some imprecise future date. See 40 CFR 122.44(d)(1)(i)"

Rika Lashley asked in the chat "Are nutrients defined as "pollutant" for the purpose of RP analysis?" Rainie responded verbally: yes

Erik Makus, EPA Region 8 representative, stated in the chat box "An RP applies to all pollutants whether toxics, conventional, or nonconventional. An RP analysis would be expected for nutrients. See 40 CFR 122.44(d):

(i) Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Susie Turner wrote in the chat "We don't believe Numeric RP analysis using TSD methods will work. It appears DEQ is proposing a qualitative RP using response variables. We think the test should be something more along the lines of does the discharger have the potential to impact water quality." Susie then asked verbally: Is DEQ proposing a qualitative reasonable potential analysis. Rainie responded verbally: yes. Rainie further stated that was the proposal shown in the presentation today because we know response variables are a direct measure of the receiving waterbody and that is our proposal for a qualitative RPA for near field monitoring sites using response variable threshold data.

Paul Skubinna wrote in the chat "I do not believe numeric RP analysis using TSD methods is appropriate for nutrients. Is DEQ proposing a qualitative RP with some reference to numeric interpretation of response variables. Would definitely like to explore what that looks like and means. To me to test for entry into AMP starts with does the discharger have a detectable impact on the water body."

Amanda McInnis wrote in the chat "In some watersheds we see response variables stay the same with or without the point source entirely, that the PS load is so dwarfed by the nps load that we could remove the load completely and not see a response in the river under most flow conditions." Mike Suplee responded verbally that may be the case. He further stated that if you look at the example we provided earlier of the different scenarios of the upstream and downstream measurements, that sort of information would come out in the dataset.

Dave Clark, Technical Subcommittee representative for large point source dischargers, wrote in the chat "The issue with response variables is that they are bright line, black and white, numerical values that have simply been selected. They're not based on site specific circumstances. That doesn't inform the spatial and temporal exceedances for the variability allowed and they don't link to support of Beneficial Uses in a site specific way that recognizes all that's going on in the watershed. Are beneficial uses impaired if Chla is 126 mg/m^2 compared to Mike's 125 mg/m^2 value? What if benthic algae coverage is 32% which is greater than Mike's 30%? Is beneficial use really impaired?" Mike Suplee responded verbally that these are good questions. He further stated that one of the things we're talking about is the exceedance threshold, which is an important discussion we can come back to in technical subcommittee meetings. There is the idea that if only one sample goes over, is that a problem? Probably not. If every sample goes over, it's a problem. Mike further explained the trick is to come to a place in between – if exceedances are not happening often enough, then the use is not impaired. One exceedance in a sample of two doesn't necessarily mean there's a problem either. The process of how this is resolved is to determine an acceptable exceedance rate – for example, 10% of the time?

Sarah Zuzulock asked how to address exceedances – is this tied into statistics or probability? Sarah further stated she has a hard time seeing how this will work, as it's difficult to draw statistical correlation back to a source. She also said she's interested to hear how you address that and make it objective. Mike Suplee responded that the general recommendation is to use straightforward, robust statistical methods to test the thresholds we establish – met or not met. This can be done clearly and objectively and can be done in a way that the number of samples you collect can be adjusted. Mike further stated that hopefully DEQ will be proposing something like this and it is his personal recommendation on how to tackle the problem. How you define what an exceedance is can be problematic, however.

Dave Clark wrote in the chat "Effluent Limits have been identified by DEQ as both Numeric and Narrative. Narrative effluent limits may be most appropriate for the AMP. However, Rainie's permitting approach uses either relative Change up/down of discharge, or the response variable Thresholds up/down of discharge, as basis for permitting. That's focused on just the effluent mixing zone not the watershed. That ignores the rest of the watershed and whether Beneficial Uses are supported in the rest of the watershed (they might be and they might not – depending upon what's going on in the watershed, which should be assess in the Adaptive Management Program)." Rainie responded verbally that she disagrees with a couple of things. Regarding effluent limits based on near field monitoring requirements, while some of them might be based on relative change or thresholds established for response variables, DEQ will be requiring BMPs or optimization efforts. Rainie also envisions a suite of options, including some narrative conditions and some based on thresholds. She also said DEQ is trying to make the distinction between what we can measure for near field impacts that will help inform what steps in the adaptive management process need to be taken.

Louis Engels wrote in the chat "The concern the City of Billings has with the current approach is it leads us down a path that essentially puts refineries at the end of the wastewater plants. We need a different

approach so we don't double or triple our GHG consumption with little to no benefit to the Yellowstone River. I for one don't want reverse osmosis refineries at the end of the state-of-the-art wastewater plant we just spent $75M. I'd like to see more focus on the watershed where we can make an actual difference and not contribute to global warming." Mike responded verbally that in this particular case, with Billings being a large city on a large river, once a watershed model is built, that allows you to begin to look at tweaking the different loads and sources (point and nonpoint) throughout the watershed. Contrary to what you're saying, the process will be exactly what you'd like to see occur.

Tammy Johnson wrote in the chat "Didymo algae propagation occurs in nutrient-deficient streams. The AFDW takes into account the weight of all algae and does not differentiate between algae types. How can DEQ or the discharger account for that difference? Or can we?" Mike Suplee responded verbally that the likelihood that we're going to see didymo in these watersheds is low. Didymo grows in extremely low phosphorus environments. One place we see it is below Libby dam, where all the phosphorus has settled to the bottom due to the dam and reservoir and nitrogen levels have also been coming up due to the upstream mining activities. If anything, it (didymo)would be found in the far field upstream site. Highly unlikely to see didymo in a downstream site and we can definitely make the distinction.

Rika Lashley stated she wanted to circle back to the fact that there are no teeth to deal with nonpoint sources. She asked where it leaves point source dischargers if nonpoint source dischargers don't do anything. Kristy Fortman, Section Supervisor of DEQ's Watershed Protection Section, stated it's all about building relationships and there are quite a few established between conservation districts watershed groups, and landowners. Kristy said the problem is more about funding. She said people want to do the right thing, but don't have the funding to do it. The Natural Resources Grant Working Group meetings regularly to discuss projects and how to stretch funding as much as possible. Rika said that funding becomes the main issue because small towns don't have it.

Dave Clark stated he wanted to go back to Mike's discussion on statistical analysis: The extent of the dataset when it's gathered is important to doing statistical analysis. Data should be gathered over a broad reach of watershed and needs to consider factors that influence relative change values. Statistical analysis based on one area up and downstream of a mixing zone doesn't seem to inform whether relative change thresholds are impacted. Need to know more about what's going on in a watershed. Individual water years alone (drought or a big spring scour) could influence the amount of chlorophyll-a. Mike responded that this is true, but what Dave describes is an ideal situation with a lot of collected data, which won't be realistic in a lot of circumstances. Dave also stated that in watersheds where we've made progress, we have changed nutrient dynamics in the watershed. Some of the data used to inform management decisions is no longer relevant moving forward. Darrin Kron, Supervisor of DEQ's Monitoring and Assessment Section, noted that if a discharger thinks they have changed the water quality since DEQ has looked at a segment, they may want to ask DEQ to collect data over a broader spatial area. Darrin also stated that small to moderate changes in the assessment method could be important and we'd like to work together on that.

Rika Lashley stated the more data the better, but that's costly. If this is borne by the dischargers, they have neither the people to collect the data or the money to pay for the analysis. Cost has to be considered.

Kelly Lynch wrote in the chat "I'm not sure if Mike is saying this, but I want to reiterate that the POTWs do not believe it is our responsibility to make improvements in NPS dischargers. If the AMP or modeling

shows that NPS discharges are the place for the biggest gains in water quality, that is something DEQ needs to make a decision about how to handle. While many POTWs are happy to help with costs associated with potential BMPs, POTWs do not have any regulatory authority over NPS dischargers." Mike Suplee responded verbally: basically, what I'm saying is the model provides the technical means to decide. It allows you to investigate: if this were to change, then this would happen. This is different from the question of regulatory authority. Kristy Fortman noted we have a Nonpoint Source Program for the state, which is bigger than DEQ, and DEQ works with other agencies to get work done on the ground. DEQ does not have regulatory authority, but encourages people to do restoration projects and provides funding for this. Rainie also stated that this is part of this shift that there might be voluntary reductions and point sources would need to create partnerships. DEQ does not have regulatory authority and is not suggesting that point sources do either, but encourages point sources to work with nonpoint sources. George Mathieus, DEQ's Deputy Director, stated that he is optimistic that there will be opportunities for point and nonpoint sources to come together at lower cost than traditional engineered capital investments. As a state, we haven't looked at this collectively, and this adaptive management process affords us this opportunity. Amanda McInnis stated that the seven largest cities have already spent more than $250 million on nutrient control and they want to look at watersheds in a collaborative approach.

Eric Regensburger, a modeler in DEQ's Water Quality Standards and Modeling Section wrote in the chat "DEQ's nutrient trading policy is available to use for reducing nutrient loads from NPS sources. PS and NPS can work together voluntarily to implement those BMPs and thus reduce the amount of treatment need at the PS facility."

Kelly Lynch then wrote in the chat "The trading policy is great - but if a POTW demonstrates they are not making a material impact to the water quality, and DEQ needs to see further improvements to the water quality, then the trading policy should be imposed on the other discharge sources and not required of the POTW that can't control another source."

Brian Heaston wrote in the chat "Absent regulation, DEQ appears to acknowledge that NPS is a problem, so the AMP could serve as the vehicle for DEQ to get resources on the ground to deal with NPS cleanup. The AMP could serve to identify what the proportionate fair share of cleanup should be on the PS (discharger responsibility) v NPS (state responsibility) side."

Guy Alsentzer then asked why we aren't talking about other tools DEQ has, such as DEQ regulatory authority over subdivisions. Guy further stated that we haven't devoted time to this under the AMP. DEQ has authority over small development that deserves discussion.

Rika Lashley wrote in the chat "I also agree with Guy - in many cases, upstream non-point sources are septic systems and it would help to put DEQ's authority to use to help with the effort of reducing their proliferation."

NUTRIENT WORK GROUP FEEDBACK ON ROLLOUT OF THE ADAPTIVE MANAGEMENT PROGRAM

A poll was launched asking what type of training would be most helpful when the adaptive management program is rolled out (post rulemaking in 2022). Online webinars served as the top choice, followed by

in-person meetings. For in-person meetings, spring months were rated the highest for the best timeframe, followed by winter months.

DEQ asked if there are additional training topics that would be helpful to execute the adaptive management program, but there were no responses.

Rika Lashley noted that even just getting the message out that this is going on would be helpful – there is value in some sort of information distribution before this is fully done to get folks prepared so it's not a shock when they review their permit.

DEQ then asked if there are partnerships that would be valuable for the adaptive management program. Scott Buecker responded that DEQ could help get the message across to councils and boards as opposed to forcing engineers to do this. Kristy Fortman responded that DEQ has started a list of meetings to attend.

DEQ asked if there are creative ways to get the word out across the state about the new program, and also if communication methods should vary, and what types should be used. Susie Turner suggested presenting at the state rural waters school. Rika Lashley commented in the chat box "DEQ has the operator website, where things can get posted. Working with MRWS would be important for reaching small communities." Rika also wrote "Not sure that direct emails would be useful but MLCT has email lists that could be used to reach communities." Kelly Lynch wrote in the chat box "The League is happy to help with pushing information out to all the incorporated municipalities within specific watersheds as each AMP is being developed for a region."

Samantha Tappenbeck (Flathead CD) commented that conservation districts are a great way to connect with potential nonpoint source contributors. We have meetings once a month that are open to the public, which is a place to brainstorm projects and creative ways to address these issues at the local scale. Samantha further stated that what we're discussing through the Nutrient Work Group is extremely technical and creative ways to get the word out are needed when connecting with stakeholders. She suggested some kind of video or something like that that breaks it down to the most basic form: what nutrients are and why they're important. She also stated that the annual conservation district meeting in the fall could be a good way to get information out.

DEQ asked: We are halfway through this process and are getting into specifics on program implementation. DEQ realizes there are still unknowns about implementation; however, how are you feeling about the process so far? This question spurred a discussion on rule versus guidance (see next section below).

DEQ then asked what would make you feel more engaged in the NWG or TSC? Samantha Tappenbeck responded that she would feel more engaged if we had action items between meetings that were more quantifiable. She is looking for direct feedback from the group that could then be compiled and summarized at the following meeting - it's tough to keep track of everyone's contributions.

DEQ asked three final questions, but did not receive responses:
Do you feel you understand the information presented or is it too complex?
How could you help contribute to the process and implementation? Do you already have ideas and plans you would like to share?

DISCUSSION ON RULE VS GUIDANCE AND TIMELINE FOR RULEMAKING

Kelly Lynch wrote in the chat "One of the items in our letter was the issue of timing on the rules, and identifying what is in the rule compared to follow-up guidance documents. I would like to hear from DEQ on that." Rainie noted verbally that DEQ is in the process of working on this internally, trying to identify what should be in rule versus guidance.

Kelly also wrote in the chat "And also I would like to know if DEQ has identified a specific date that we will move out of the NWG informal process and into the formal rulemaking process. I.e. what is our drop dead date with this group?" Mike Suplee responded verbally that rulemaking begins with the Water Pollution Control Advisory Council (WPCAC) in November. DEQ will have both the rule and guidance documents in final draft form by the time rulemaking begins. The first week of November will be the end of the informal process.

Amanda McInnis stated the statute needs to provide for the development of an Adaptive Management Program. We all are feeling rushed with this schedule, but understand it needs to comply with the statute. When we get to what's in the rule, it could be more preliminary in nature. Rainie responded that she didn't think this could be the case. If there are mandatory elements that need to be addressed in an administrative rule, then they need to mee the March deadline. Mike added that the guidance has to be largely done too in addition to the circular and rule. All three pieces (rule, circular, and guidance document) need to be largely finished by November.

Susie Turner said there seems to be a clear understanding from DEQ on what the rule has to say and what the guidance has to say, but I don't understand what this is. Mike responded that the rule and circular are essentially identical (they are requirement). Guidance documents are different options and approaches on how to undertake what the rules are telling you to do.

Rika Lashley asked if DEQ could provide cliff notes on what goes in rule and what goes in guidance (what is mandated to go in the rule?). Rainie responded that DEQ can address this at the next meeting.

Kelly Lynch wrote in the chat "SB 358 says the department must "adopt rules related to narrative nutrient standards" by March. It says those rules "shall provide for the development of an adaptive management program." I am not as concerned about the March deadline requiring all the details of an AMP being set out by that time. Just the framework for how that will look. Maybe we need to have a discussion about that." George Mathieus responded verbally that he didn't know how you create a successful program without knowing how you're going to implement it.

PUBLIC COMMENT

Public comment was taken during the meeting and is incorporated into the "Discussion" sections above. Additionally, it was asked if the Zoom chat box is part of the administrative record. Rainie DeVaney responded that there is not a formal, administrative record since these aren't' hearings, but the chat is saved after every meeting and DEQ provides a meeting summary that captures the chat comments.

Adam Sigler, MSU Extension, wrote in the chat "Comment: In addition to the currently existing stressors on our streams and rivers, climate change and increasing residential development are adding new stresses and I don't think any of us are excited about what that could mean for the future of our water

resources. Making well informed decisions about the current and trending conditions requires data. Nutrient concentration and response variable data are both very informative for understanding conditions and causes and I hope data collection remains central with implementation of the AMP process."

CLOSE OF MEETING

The next Nutrient Work Group meeting is scheduled for September 22 from 9 to 11 a.m. A listening session is also scheduled for September 23 from 1 to 3 p.m.

DEQ will discuss the meeting schedule and get back to the Nutrient Work Group on how DEQ will be moving forward with future meetings.

Moira Davin, public relations specialist for DEQ, then gave a Microsoft Teams tutorial.

SUMMARY OF ACTION ITEMS

	Action	Meeting Date	Who*	Status
1	Provide documents in advance of NWG meetings	6/23/21	DEQ	Ongoing
2	Get Microsoft Teams up and running for NWG and TSC members	6/23/21	DEQ	Complete
3	Address the question of nonpoint source participation in the AMP process	6/23/21	DEQ, NWG	Complete
4	Consensus opinion of farming and nonpoint source community on this process and what they think is possible or realistic	6/23/21	Nonpoint source representatives	Comment noted
5	Add timeframes to the Adaptive Management Program flowchart	6/23/21	DEQ and TSC	Ongoing
6	Create responsibility chart for adaptive management program	6/23/21	DEQ and TSC	Complete
7	Summarize the process for determining a wadeable stream vs large river	6/23/21	DEQ	Complete
8	Add groundwater to the adaptive management program framework	6/23/21	DEQ and TSC	Complete
9	Summarize SOPs for sampling nutrients	6/23/21	DEQ	Ongoing
10	Provide copy of EPA action letter on Utah's headwater streams	7/28/21	DEQ	Complete

* NWG = Nutrient Work Group, TSC = Technical Subcommittee

ATTACHMENT A: AUGUST 25, 2021 NUTRIENT WORK GROUP MEETING PRESENTATION SLIDES

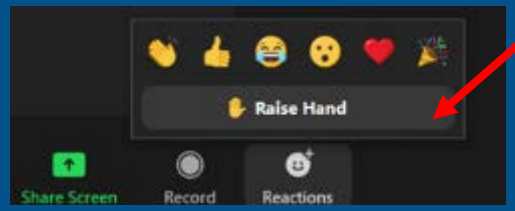
Nutrient Work Group Session Four

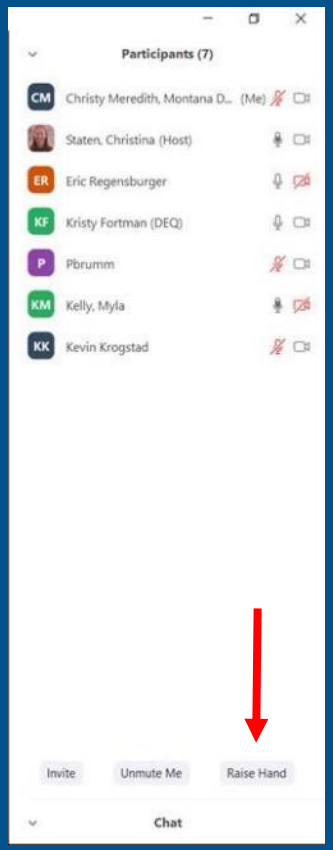
August 25, 2021

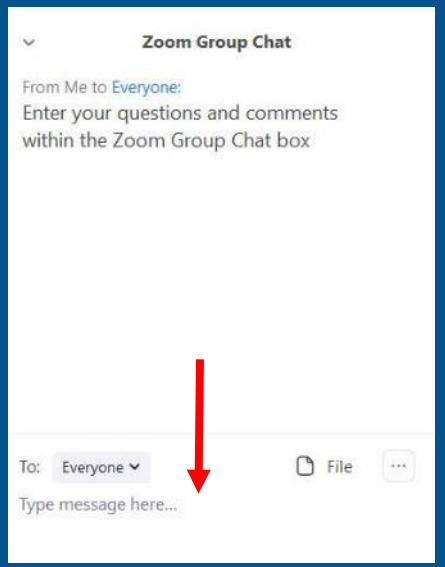
DEQ MONTANA

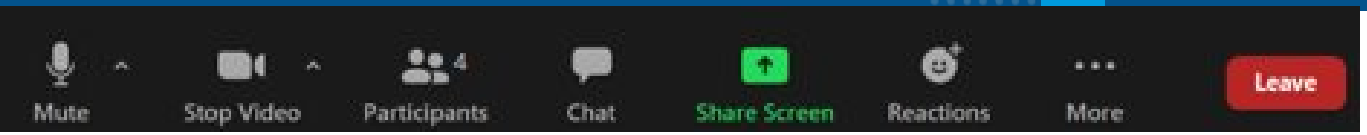
Welcome!

- Please keep your microphone muted until called on
- Only NWG Members may participate during discussions
- Please reserve public comment until the end
- *6 unmutes your phone
- State your name and affiliation before providing your comment
- Enter questions in the chat box or raise hand
- Turning off your video feed provides better bandwidth
- Please sign-in to the chat box with name and affiliation









DEQ MONTANA

Introductions

DEQ Staff

- Christopher Dorrington, Director
- George Mathieus, Deputy Director
- Kurt Moser, Legal Counsel
- Moira Davin, Public Relations
- Amy Steinmetz, Water Quality Division Administrator
- Jon Kenning, Water Protection Bureau Chief
- Rainie DeVaney, Discharge Permitting Section Supervisor
- Galen Steffens, Water Quality Planning Bureau Chief
- Myla Kelly, WQ Standards & Modeling Section Supervisor
- Kristy Fortman, Watershed Protection Section Supervisor
- Darrin Kron, WQ Monitoring & Assessment Section Supervisor
- Michael Suplee, Water Quality Science Specialist

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Introductions

Nutrient Work Group Members

Interest Group	Representative	Substitute
Point Source Discharger: Large Municipal Systems (>1 MGD)	Susie Turner	
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	Tammy Johnson	
Farming-Oriented Agriculture	John Youngberg	
Livestock-Oriented Agriculture	Jay Bodner	
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	Wade Fellin	
Federal Land Management Agencies	Andy Efta	
Federal Regulatory Agencies	Tina Laidlaw	
State Land Management Agencies	Jeff Schmalenberg	
Water Quality Districts / County Planning Departments	Pete Schade	
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	

Ground Rules

- Speak one at a time – refrain from interrupting others.
- Wait to be recognized by facilitator before speaking.
- Facilitator will call on people who have not yet spoken before calling on someone a second time for a given subject.
- Share the oxygen – ensure that all members who wish to have an opportunity to speak are afforded a chance to do so.
- Be respectful towards all participants.
- Listen to other points of view and try to understand other interests.
- Share information openly, promptly, and respectfully.
- If requested to do so, hold questions to the end of each presentation.
- Remain flexible and open-minded, and actively participate in meetings.

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Roles and Responsibilities

The Nutrient Work Group is an advisory group to DEQ.

Members agree to:

- Provide specific local expertise, including identifying emerging local issues;
- Review project reports and comment promptly;
- Attend as many meetings as possible and prepare appropriately;
- Complete all necessary assignments prior to each meeting;
- Relay information to and from their broader interest group counterparts after each meeting and gather information/feedback from their counterparts as practicable before each meeting;
- Articulate and reflect the interests that NWG members bring to the table;
- Maintain a focus on solutions that benefit the entire state;
- Present recommendations for the rulemaking throughout the planning process.

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Agenda

Meeting Goal: Finalize Response Variables & Thresholds, Discussion on Response Variables in MPDES Permits

- Technical Subcommittee Report:
  - Western & Eastern Montana Thresholds
  - Sample Type & Frequency
  - Data & Monitoring Resources Recap
- Introduction to Response Variables Use in MPDES Permits
- Feedback on Program Implementation & Rulemaking Process
- Outstanding Action Items
- Public Input
- If Time: Microsoft Teams Tutorial

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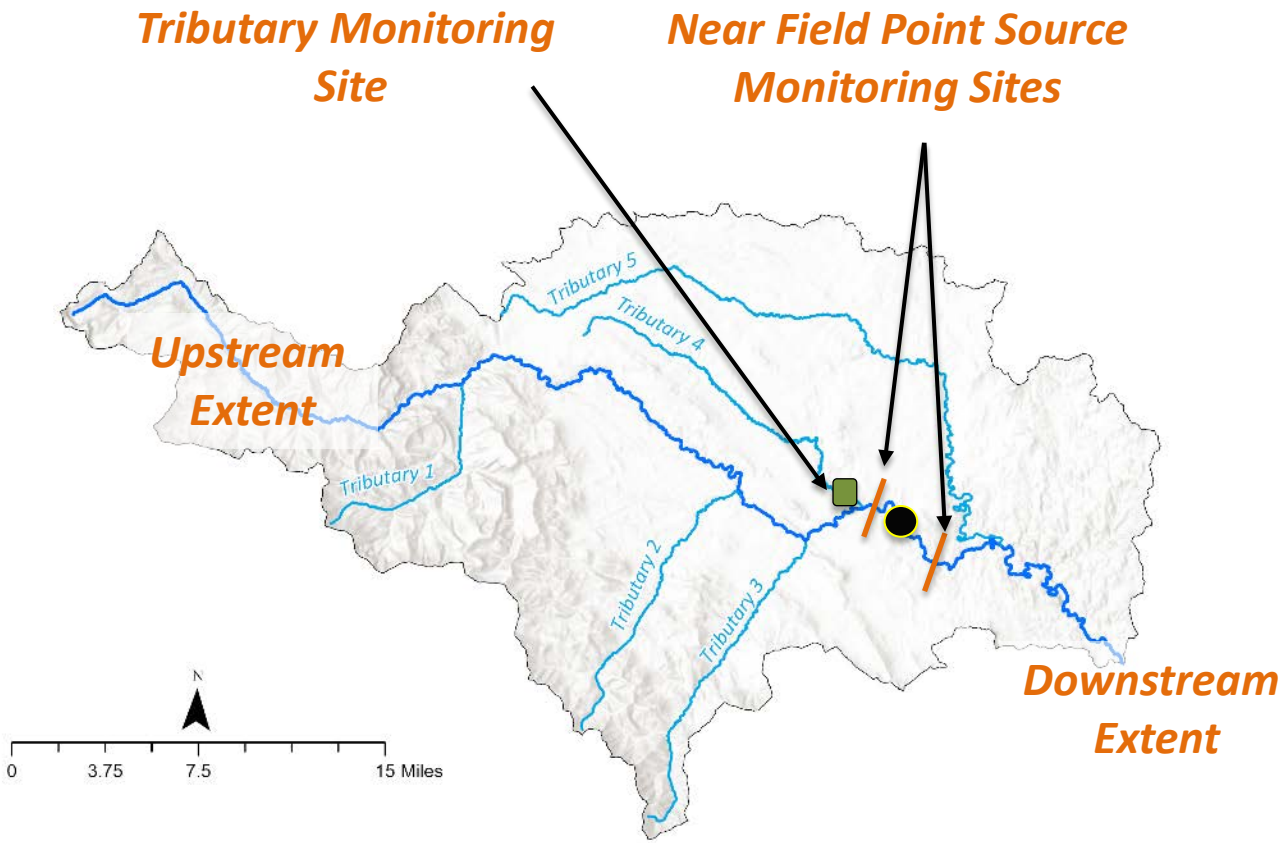
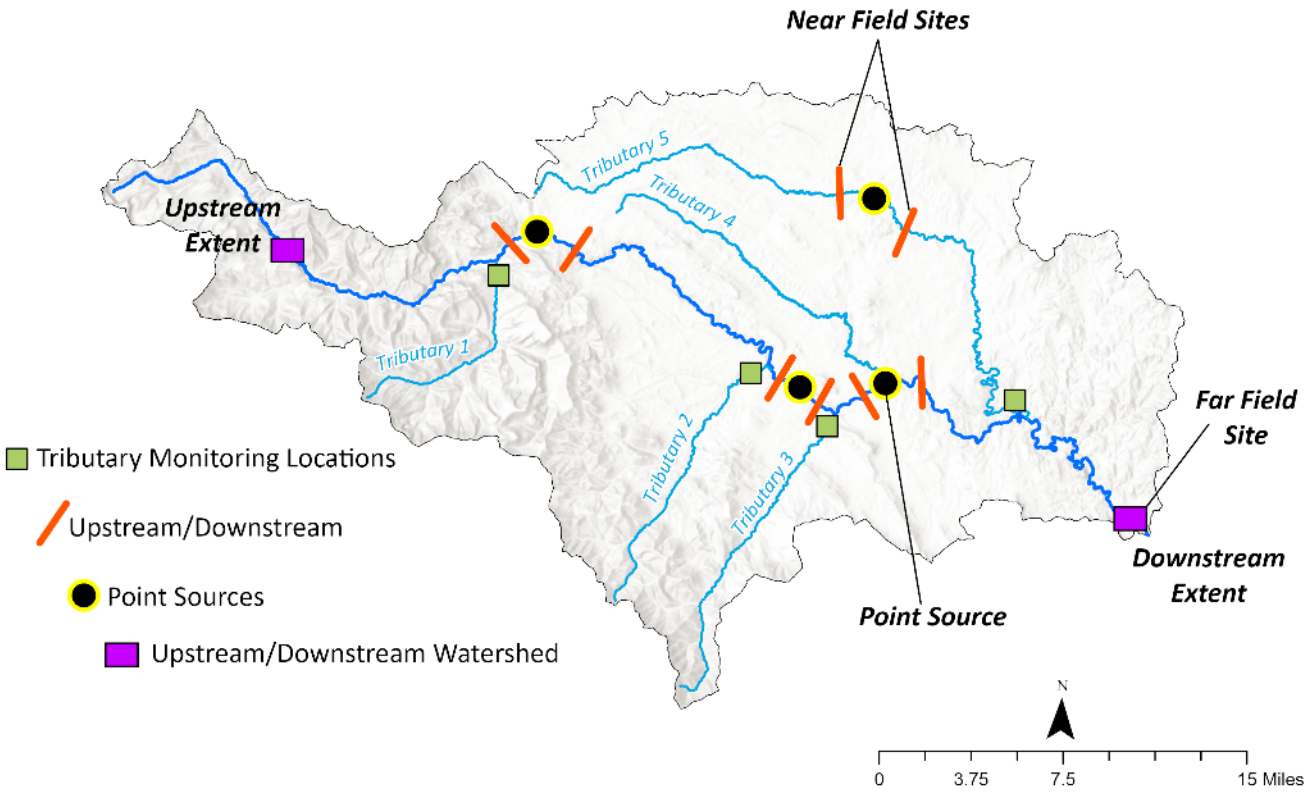
Nutrient Work Group

Technical Subcommittee Report

Example of a Simple AMP Watershed



Example AMP Watershed with Multiple MPDES Permittees



Note: This map demonstrates monitoring locations upstream and downstream of point sources. The locations shown are for illustrative purposes only. In addition to upstream and downstream, monitoring downstream of the confluence would be required to demonstrate cumulative effects.

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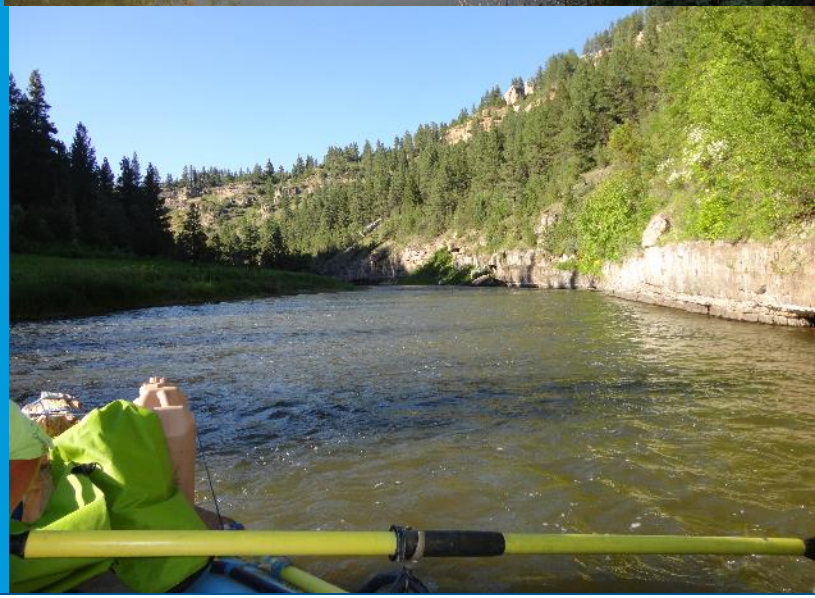
Medium Rivers and Wadeable Streams

In Western and Eastern Montana



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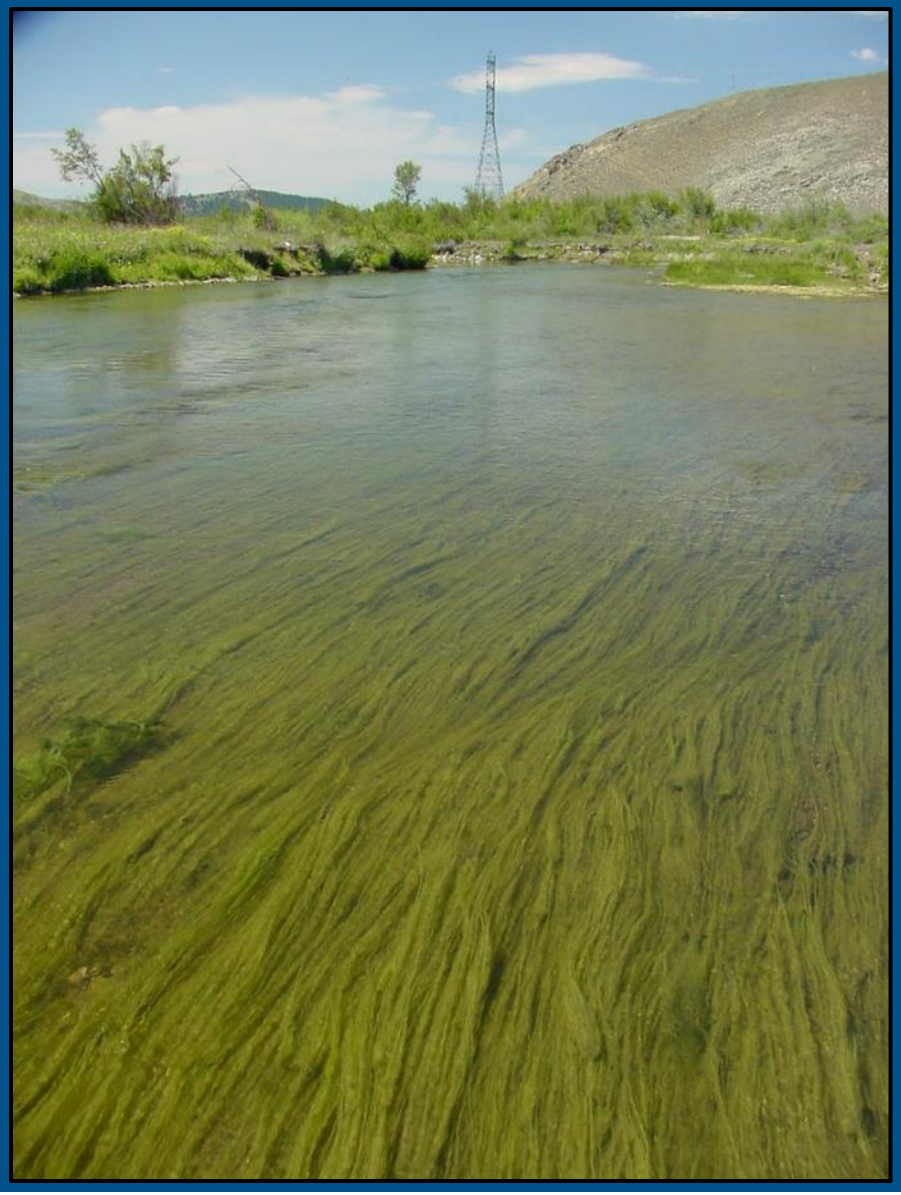

Nuisance algal growth, western Montana rivers and streams

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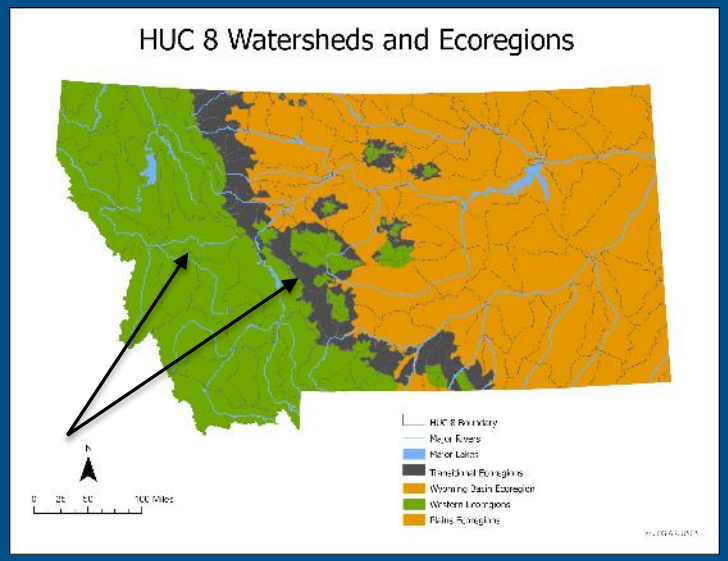
Western MT Medium Rivers and Wadeable Streams: DEQ's Recommended Response Variables & Thresholds



Data Collection Index Period:
July 1 to September 30, annually

- Average stream bottom (benthic) chlorophyll *a* over a sampling reach
  - Threshold: 125 mg Chl*a*/m^2
- Average stream bottom (benthic) ash free dry weight (AFDW) over a sampling reach
  - Threshold: 35 g/m^2
- Average % stream bottom cover by filamentous algae over a sampling reach
  - Threshold: 30%
- Macroinvertebrates, Hilsenhoff Biotic Index (HBI)
  - Threshold: relative us/ds comparison

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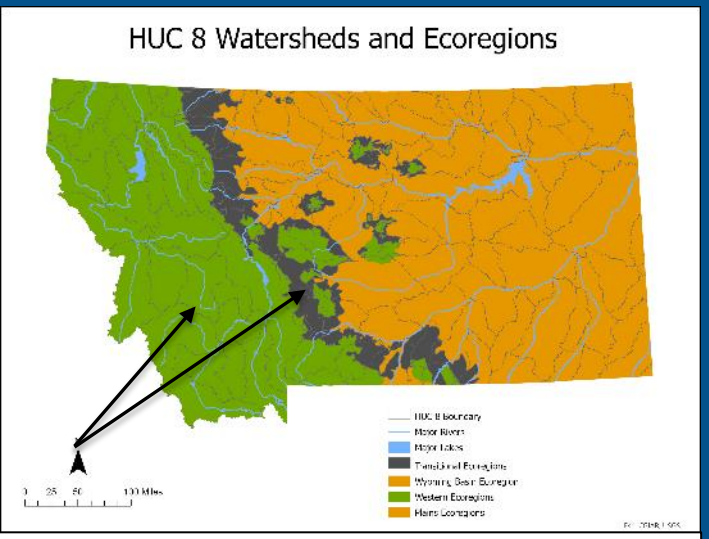
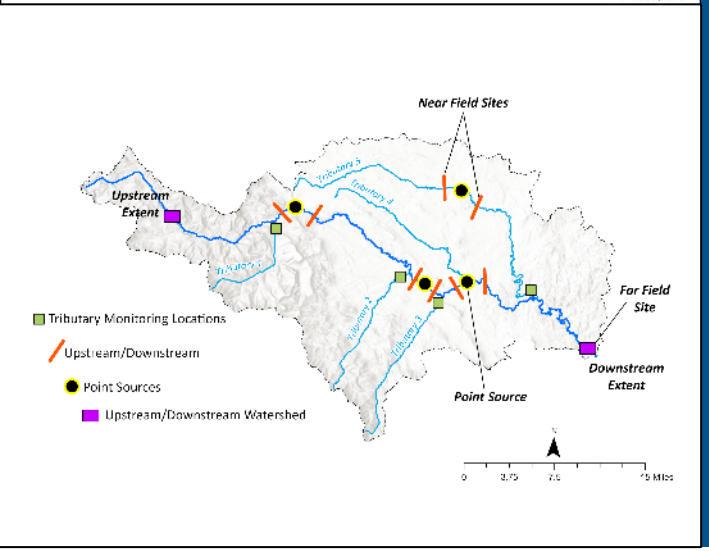
Western MT: Sampling Frequency





Near Field Sites

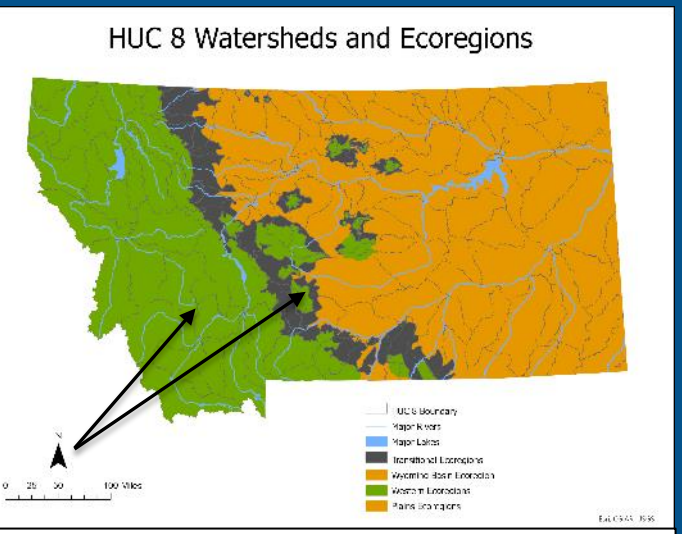
- Benthic Chla, AFDW, and TP, TN concentrations: *At least twice annually during the index period, with at least six weeks between each sampling event*
- Visual Assessment of % Bottom Cover*: At least monthly during the index period; two events must pair with the Chla/AFDW sampling.*
- Macroinvertebrates, to calculate HBI: *At least once annually during the index period, corresponding to one of the other sampling events*

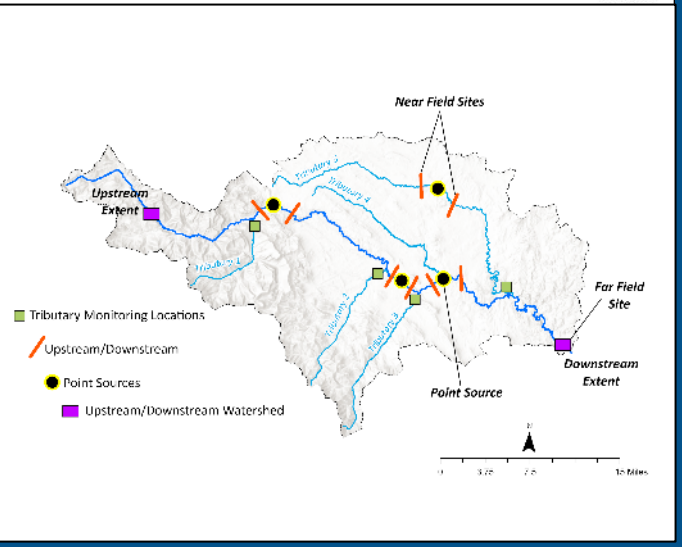
Far Field Sites

- D/S: Same response variables, nutrients, and frequency of collection as near field sites
- U/S: Variable, depending on objectives

DEQ MONTANA

Western MT: Sampling Frequency

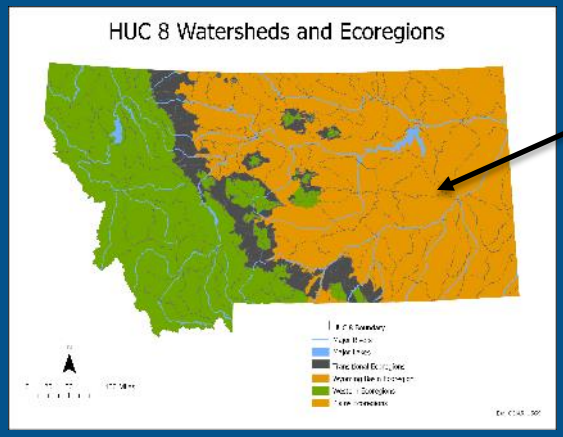


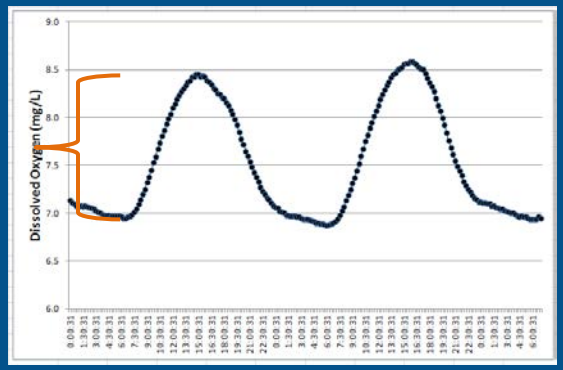


Tributaries

- TP, TN Concentrations: *At least twice annually during the index period, with at least six weeks between each sampling event.*

Eastern MT Medium Rivers and Wadeable Streams: DEQ's Recommended Response Variables & Thresholds





Data Collection Index Period:
July 1 to September 30, annually

- Dissolved Oxygen Delta (DO Δ) as a weekly average
  - Threshold: 5.3 mg DO/L

- Biochemical Oxygen Demand (BOD_5)
  - Threshold: Relative us/ds comparison

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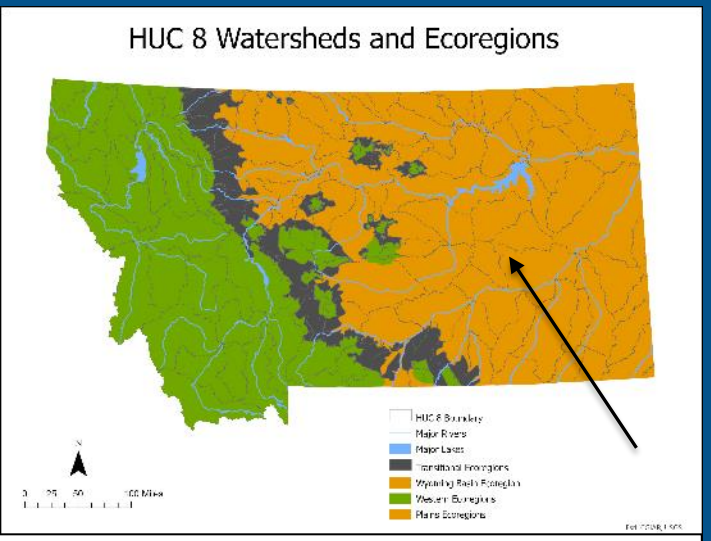
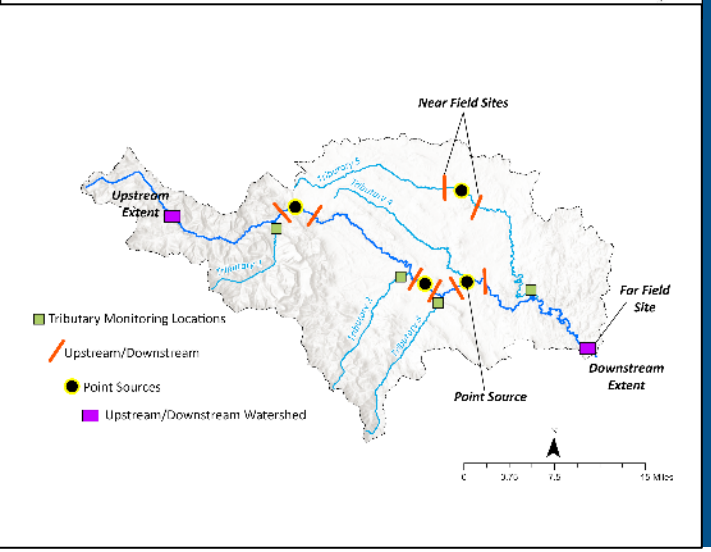
Eastern MT: Sampling Frequency





Near Field Sites

- Dissolved Oxygen, DO Delta, Temperature: *Instruments must be deployed annually for a minimum of 30 continuous days with at least 21 days collected in August.*
- TP, TN Concentrations: *At least twice annually during the index period, with at least 30 days between each sampling event.*
- BOD_5: *At least once annually during September or October (Note: October is after the index period).*

Far Field Sites

- D/S: Same response variables, nutrients, and frequency of collection as near field sites
- U/S: Variable, depending upon objectives

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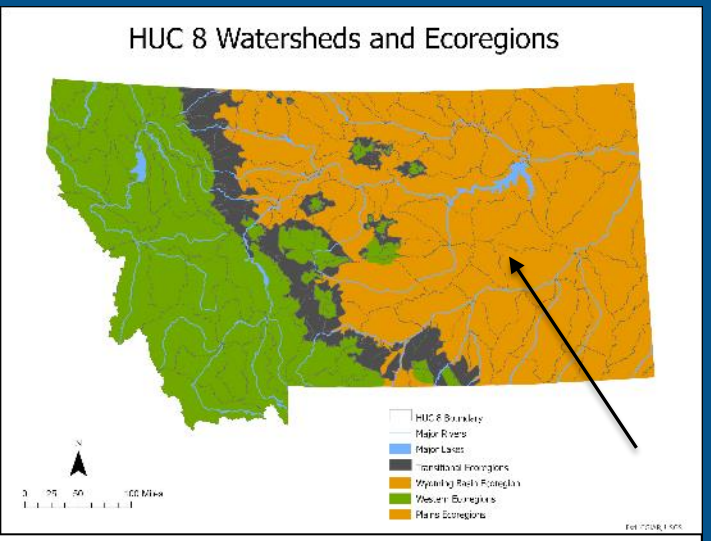
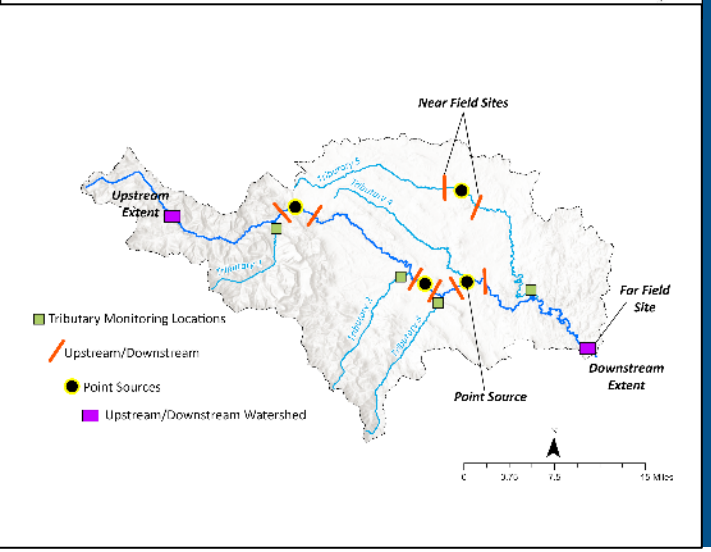
Eastern MT: Sampling Frequency

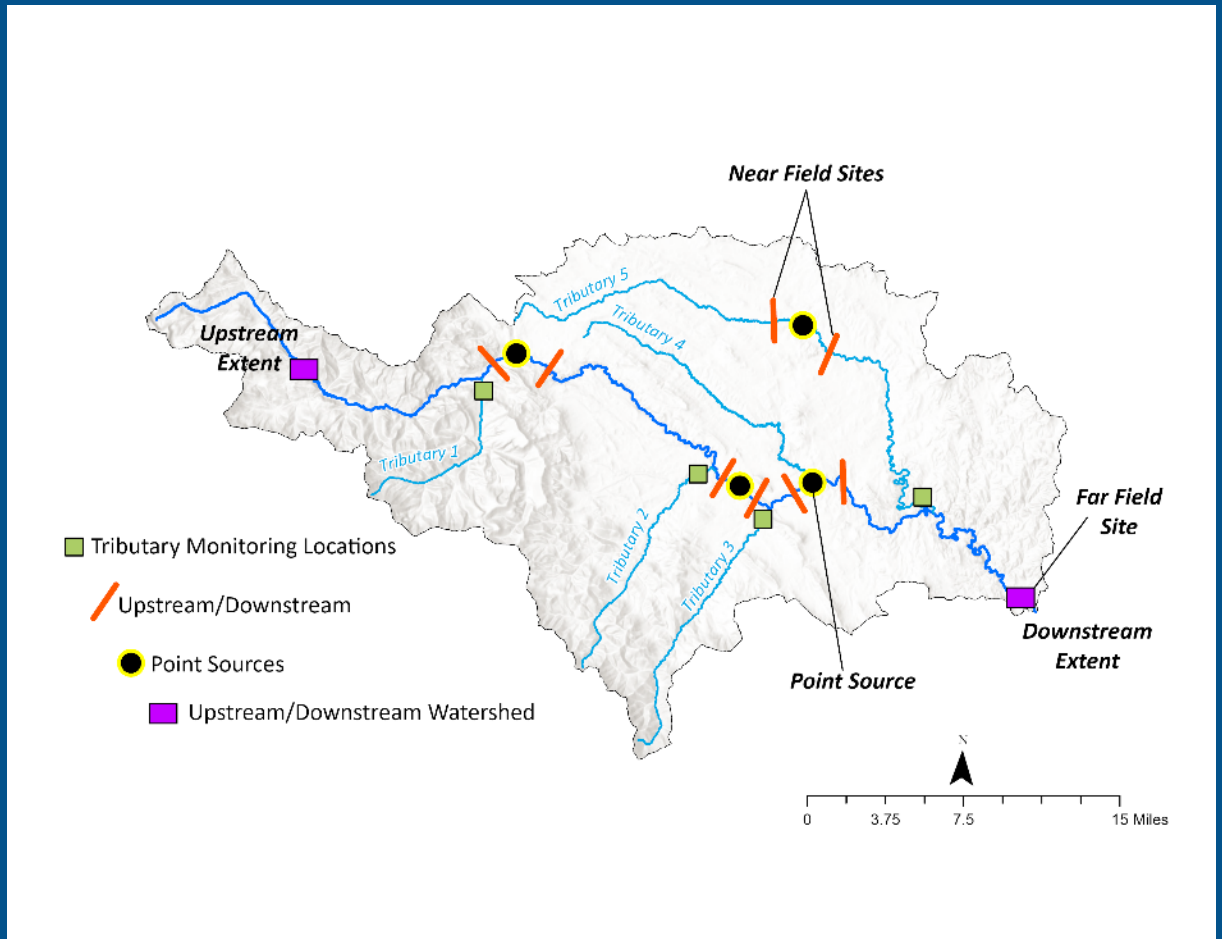




Tributaries

- TP, TN Concentrations: *At least twice annually during the index period, with at least 30 days between each sampling event.*

Relative Change: Up- and Downstream of Point Source (Near Field Sites)



Note: This map demonstrates monitoring locations upstream and downstream of point sources. The locations shown are for illustrative purposes only. In addition to upstream and downstream, monitoring downstream of the confluence would be required to demonstrate cumulative effects.

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Relative Change Data Provides Insights on Point Source Effects

Informs decisions about where to target nutrient reductions

Three Scenarios, for Illustration

Scenario 1: Little relative difference, variable (sometimes algae is lower below the facility, sometimes higher). On average, upstream and downstream sites meet threshold of 125 mg Chla/m^2.

Benthic Chlorophyll *a* (mg/m^2)

Sampling Event	Upstream	Downstream	Difference
July 15, 2022	60	129	69
August 30, 2022	55	54	-1
July 15, 2023	90	91	1
August 30, 2023	95	121	26
July 15, 2024	30	75	45
August 30, 2024	35	20	-15
July 15, 2025	49	49	0
August 30, 2025	70	60	-10
July 15, 2026	10	50	40
August 30, 2026	20	20	0
5-Year Average:	**51.4**	**66.9**	**15.5**

Scenario 2: Large effect from the point source. Algae is high below the facility and routinely exceeds the 125 mg Chla/m^2 threshold. Upstream, the river consistently meets the threshold. The problem can be linked to the point source.

Benthic Chlorophyll *a* (mg/m^2)

Sampling Event	Upstream	Downstream	Difference
July 15, 2022	60	115	55
August 30, 2022	55	300	245
July 15, 2023	30	250	220
August 30, 2023	35	115	80
July 15, 2024	30	125	95
August 30, 2024	35	140	105
July 15, 2025	49	250	201
August 30, 2025	25	275	250
July 15, 2026	10	155	145
August 30, 2026	20	155	135
5-Year Average:	**34.9**	**188**	**153.1**

Scenario 3: Algae exceeds the 125 mg Chla/m^2 threshold upstream of the point source, and exceeds below, at about the same level. Addressing upstream nutrient sources will be very important.

Benthic Chlorophyll a (mg/m^2)

Sampling Event	Upstream	Downstream	Difference
July 15, 2022	250	255	5
August 30, 2022	175	185	10
July 15, 2023	200	199	-1
August 30, 2023	300	295	-5
July 15, 2024	150	150	0
August 30, 2024	135	135	0
July 15, 2025	159	165	6
August 30, 2025	175	170	-5
July 15, 2026	200	210	10
August 30, 2026	250	225	-25
5-Year Average:	**199.4**	**198.9**	**-0.5**

DEQ is still working out the details of how all the data will be considered and assessed collectively

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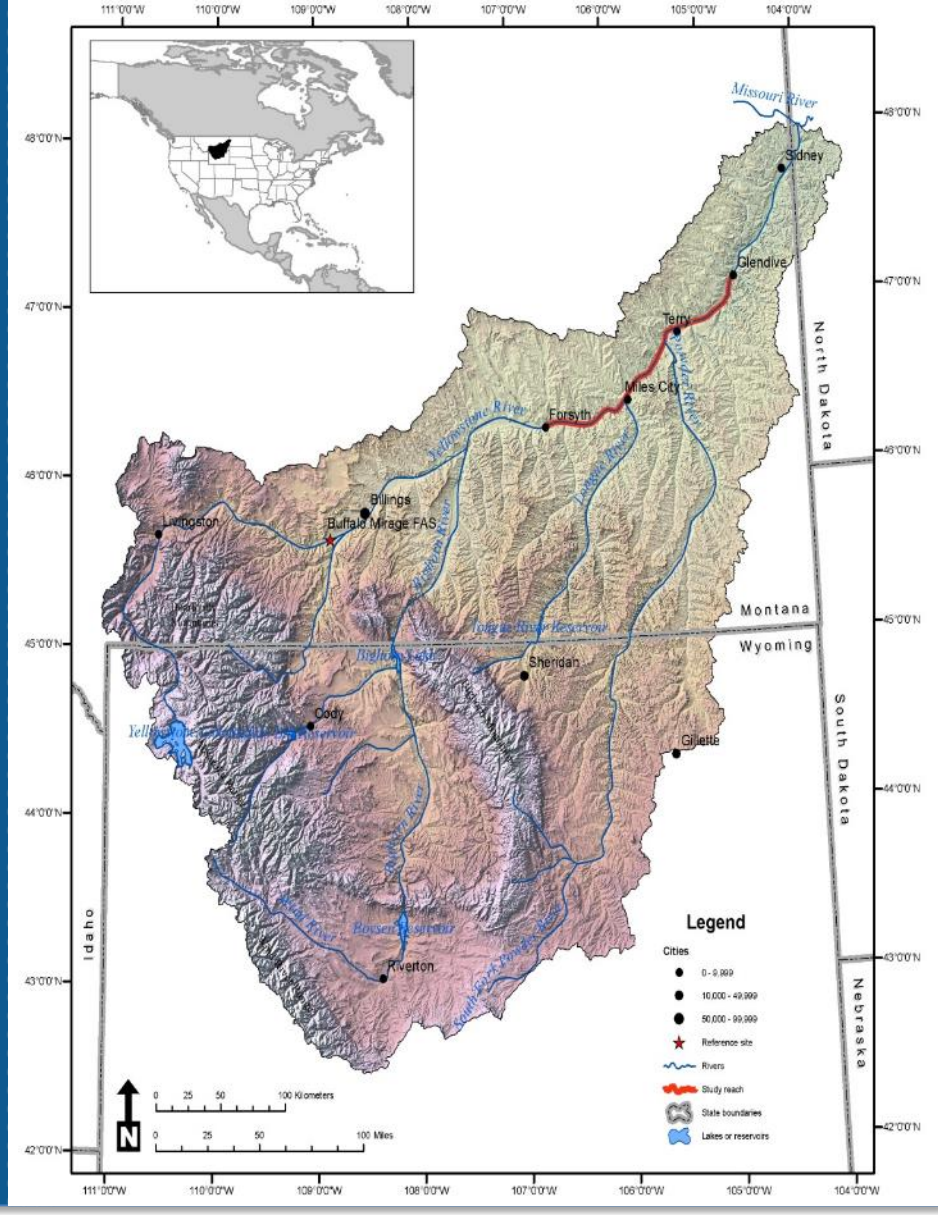
Large Rivers

Yellowstone River

Response Variables Related to Nutrients that can be Modeled in Large Rivers

- Dissolved oxygen concentrations (DO)
- Benthic algal biomass (chlorophyll *a*, AFDW) in near-shore areas
- pH
- Phytoplankton concentrations (relating to DO, turbidity)
- Total organic carbon (drinking water)
- Total dissolved gas (as linked via DO supersaturation)



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Nutrient Modeling Toolbox (NMT) and Model Selection Decision Tool (MSDT)

- NMT consists of 30 publicly available models to assist in developing site-specific nutrient goals. One page fact sheet on each model.

- MSDT guides users through several questions and program lists the recommended models as each question is answered.

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Large Rivers

- Water quality models are DEQ's recommended method, especially when multiple point sources present
  - DEQ will provide guidance
- Data collection will differ somewhat from medium rivers and wadeable streams
  - DEQ will provide guidance
- Simulation of different management activities (point and nonpoint) on nutrients can inform the effect on the most sensitive response variable in the watershed

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Nutrient Work Group Discussion and Feedback

Data & Monitoring Resources Overview

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DEQ Data and Monitoring Resources

DEQ collects ambient water quality data
- Conducts internal projects
- Support monitoring partnerships and volunteer monitoring
- Data types include nutrients and response variables

Data is useable
- Meets stringent data quality requirements
- Stored in databases in same location and format

Data is available
- Stored in DEQ's EQuIS database
- Publicly-accessible via National Water Quality Portal https://www.waterqualitydata.us/

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DEQ Data and Monitoring Resources

Assessment information is available

- DEQ's Clean Water Act Information Center https://www.cwaic.mt.gov/
- EPA's How's My Waterway https://www.epa.gov/waterdata/hows-my-waterway

Other information and reports

- DEQ Water Quality Library https://svc.mt.gov/deq/wqlibrarysearch/

Other resources may be available

- Standard Operating Procedures
- Training
- Equipment Support

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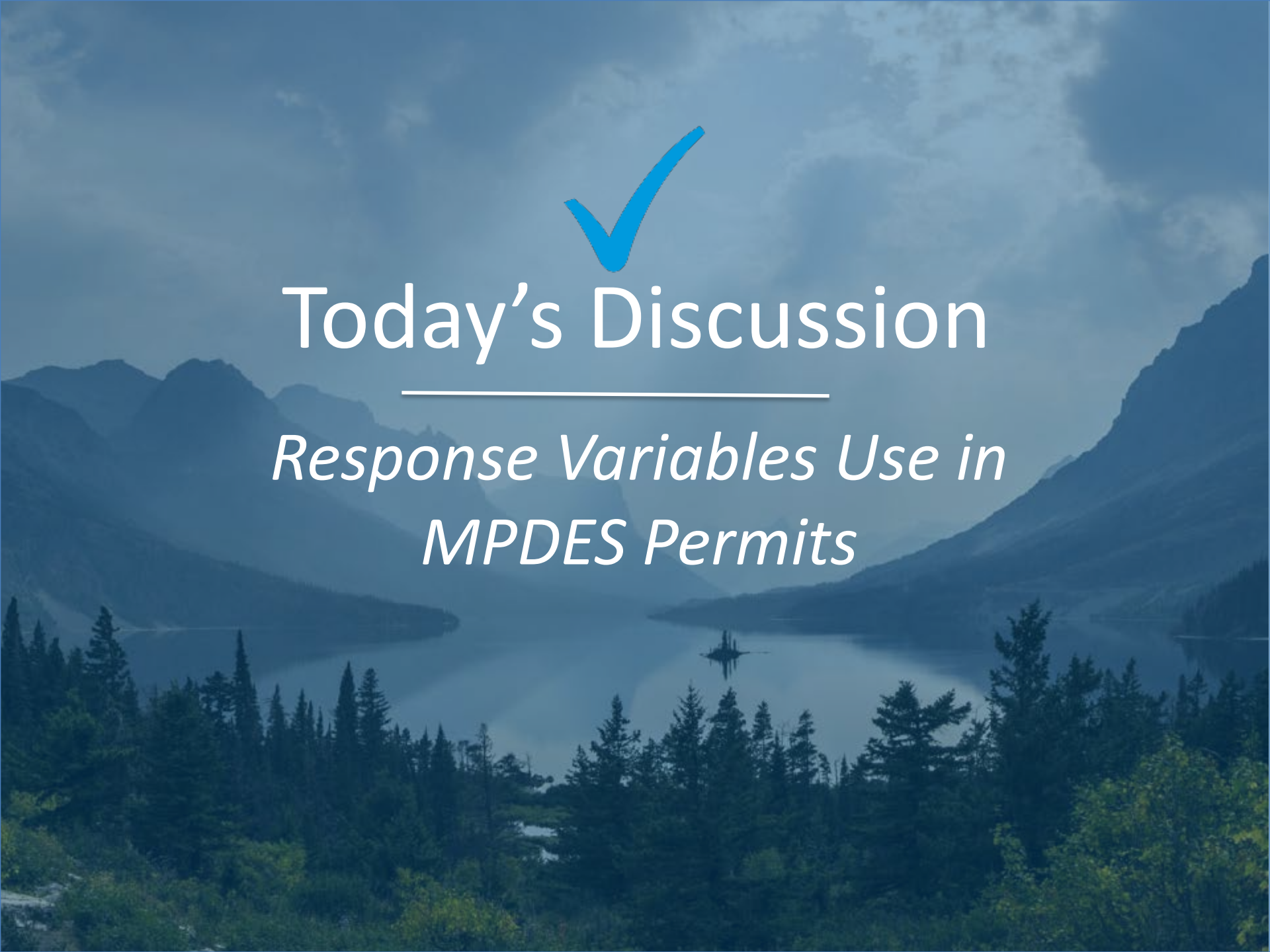
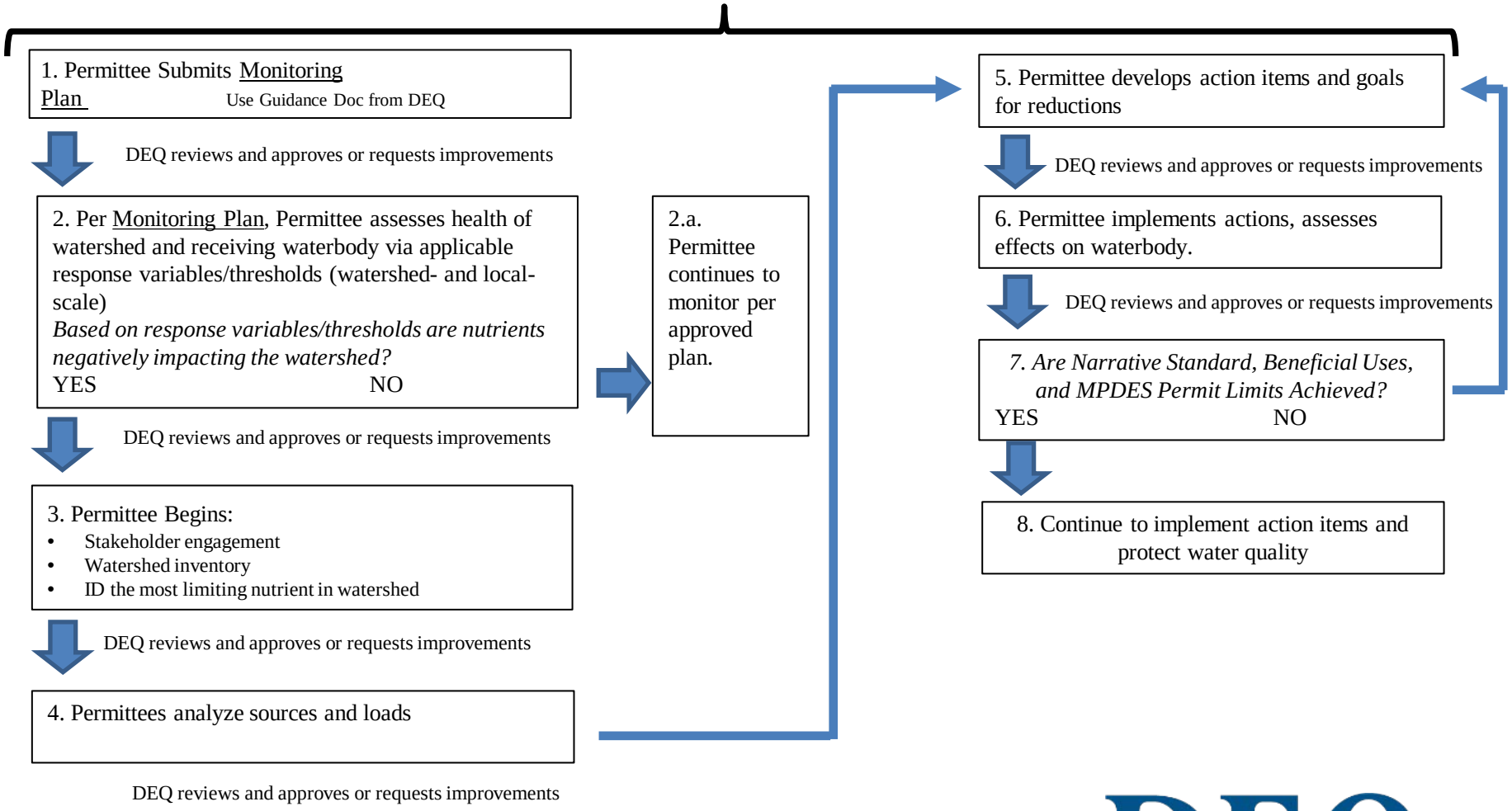
Discussion / Questions



Today's Discussion

Response Variables Use in MPDES Permits

Adaptive Management Program



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MPDES Decision Making Components

- Narrative and numeric water quality standards
- Reasonable Potential Analysis to cause or contribute to an exceedance of a water quality standard
  - Quantitative or qualitative analysis
- Effluent Limits; narrative or numeric

MPDES Decision Making Components

- Narrative and numeric water quality standards
- Reasonable Potential Analysis to cause or contribute to an exceedance of a water quality standard
  - Quantitative or qualitative analysis
  - Use response variable data for RPA decisions
- Effluent Limits; narrative or numeric
  - Relative change or threshold effluent limits based on response variable near field data

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Example Permit Conditions Through Time

DEQ Approval of Monitoring Plan

First Phase
Monitoring:
• Response Variables • TN and TP
• Major Tributaries
• Upstream/Downstream Extent
Effluent Limits:
• Retain existing TN/TP loads
• May add relative change or threshold response variable(s)
Special Conditions:
• Watershed Inventory
• Annual Reporting
• Optimization Efforts

Second Phase
Monitoring:
• Response Variables • TN and TP
• Major Tributaries
• Upstream/Downstream Extent
Effluent Limits:
• Retain existing TN/TP loads
• May add relative change or threshold response variable(s)
Special Conditions:
• Update Watershed Inventory
• Engage Stakeholders
• Quantify other loads
• ID limiting nutrient
• Annual Reporting
• Optimization Efforts

Third Phase
Monitoring:
• Response Variables • TN and TP
• Major Tributaries
• Upstream/Downstream Extent
Effluent Limits:
• Retain existing TN/TP loads
• May add relative change or threshold response variable(s)
• May convert response variable data to new TP/TN limit
Special Conditions:
• Update Watershed Inventory
• Engage Stakeholders
• Quantify other loads
• ID limit nutrient
• Develop actions, implement, and assess reductions and health of watershed
• Annual Reporting
• Optimization Efforts

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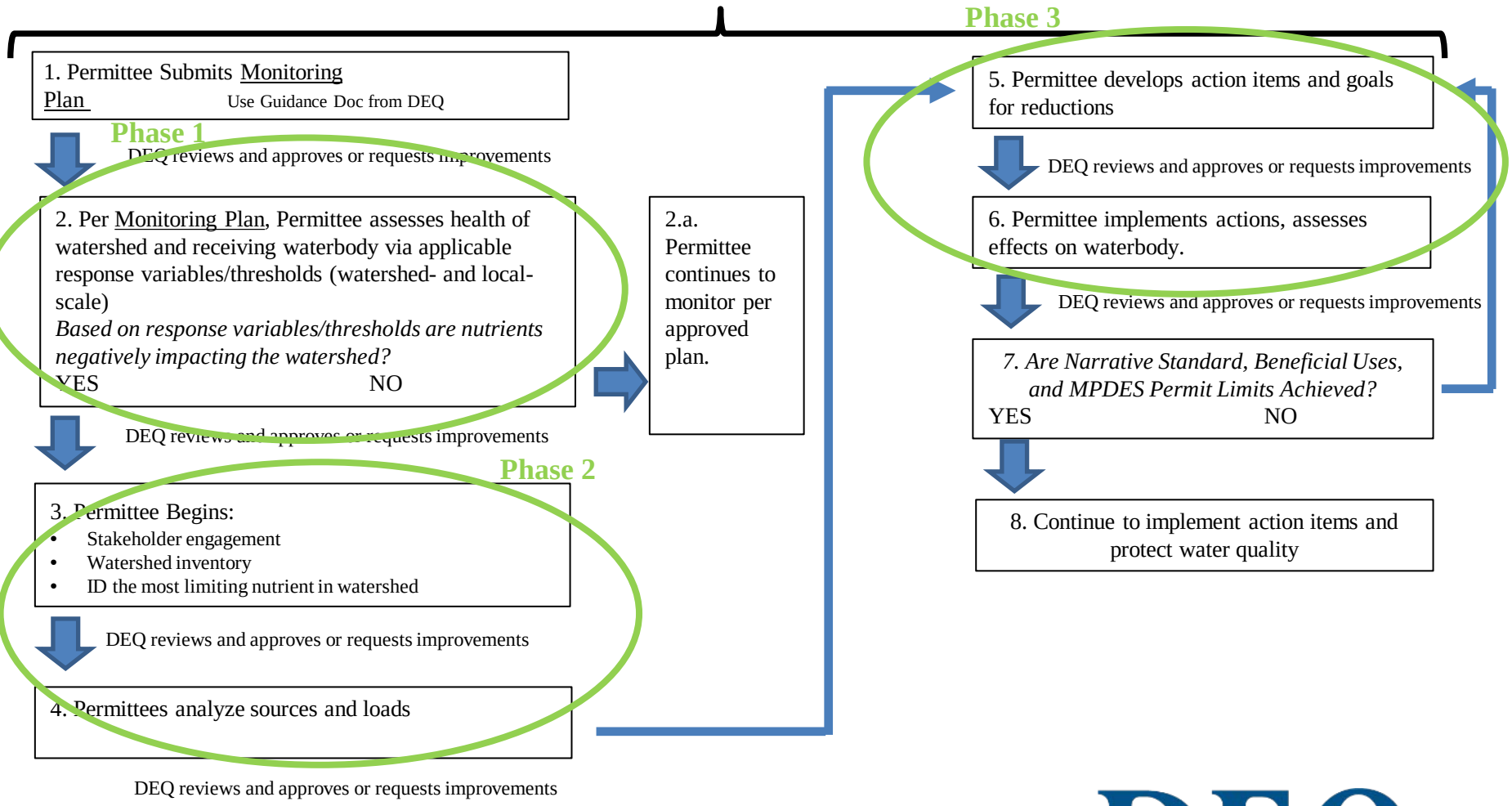
Adaptive Management Program



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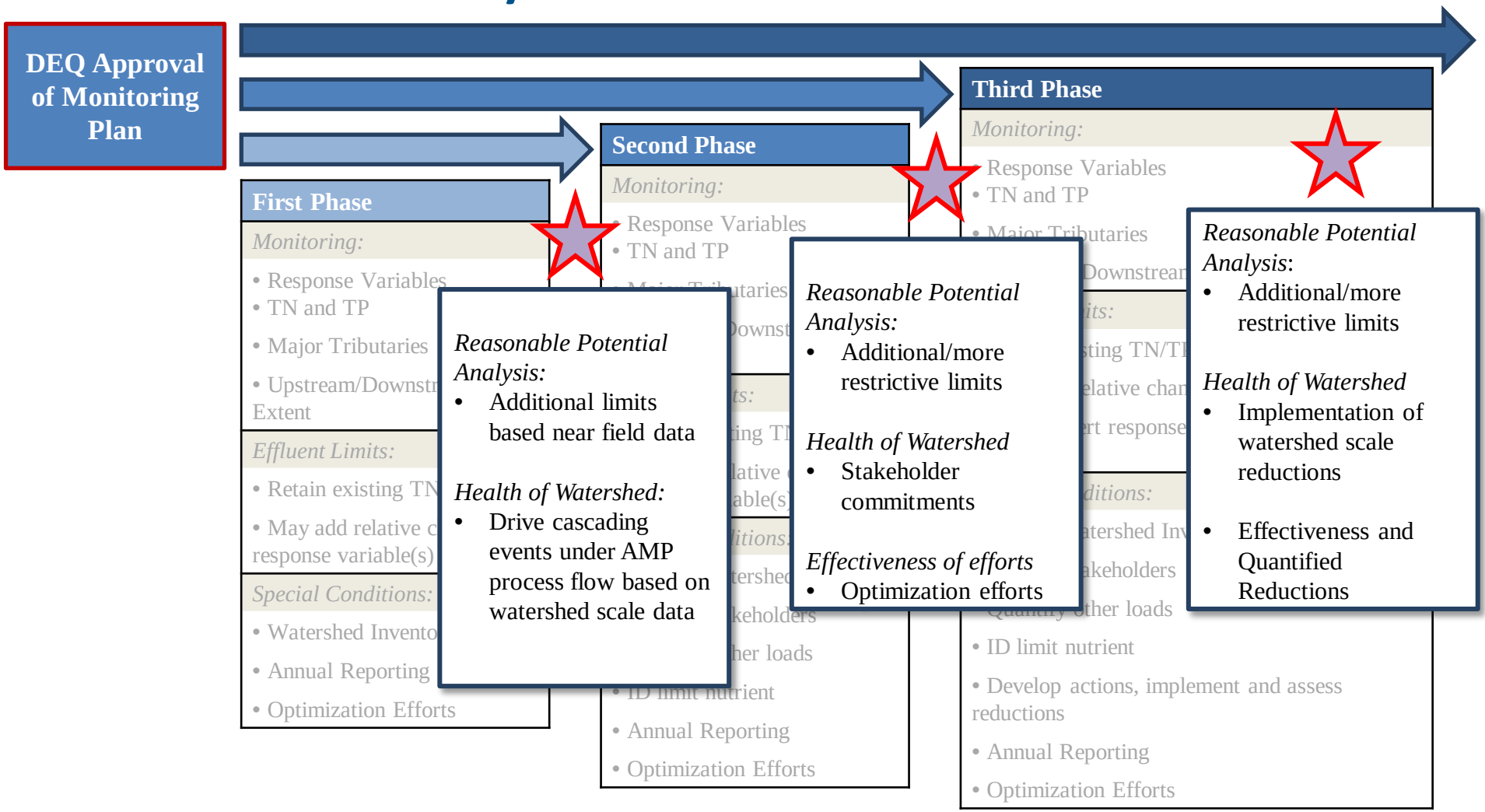
Key Decision Points



Additional MPDES Considerations

- Individual MPDES permit conditions will be tailored case-by-case to fit specific conditions
- MPDES permit include Nutrient Reopener Provision
  - Allows DEQ add new or more stringent conditions, when necessary
- DEQ may accelerate sequence of steps
  - TMDL requirements
  - Downward trend in water quality

Watershed Conditions Scenarios

Scenario 1) One MPDES point source within watershed and streams within watershed unimpaired/unimpacted from nutrients.

Scenario 2) One MPDES point source within watershed and streams within watershed impaired or impacted from nutrients.

Scenario 3) Multiple MPDES point sources within watershed and streams within watershed unimpaired/unimpacted from nutrients.

Scenario 4) Multiple MPDES point sources within watershed and downstream segment within watershed impaired or impacted from nutrients.

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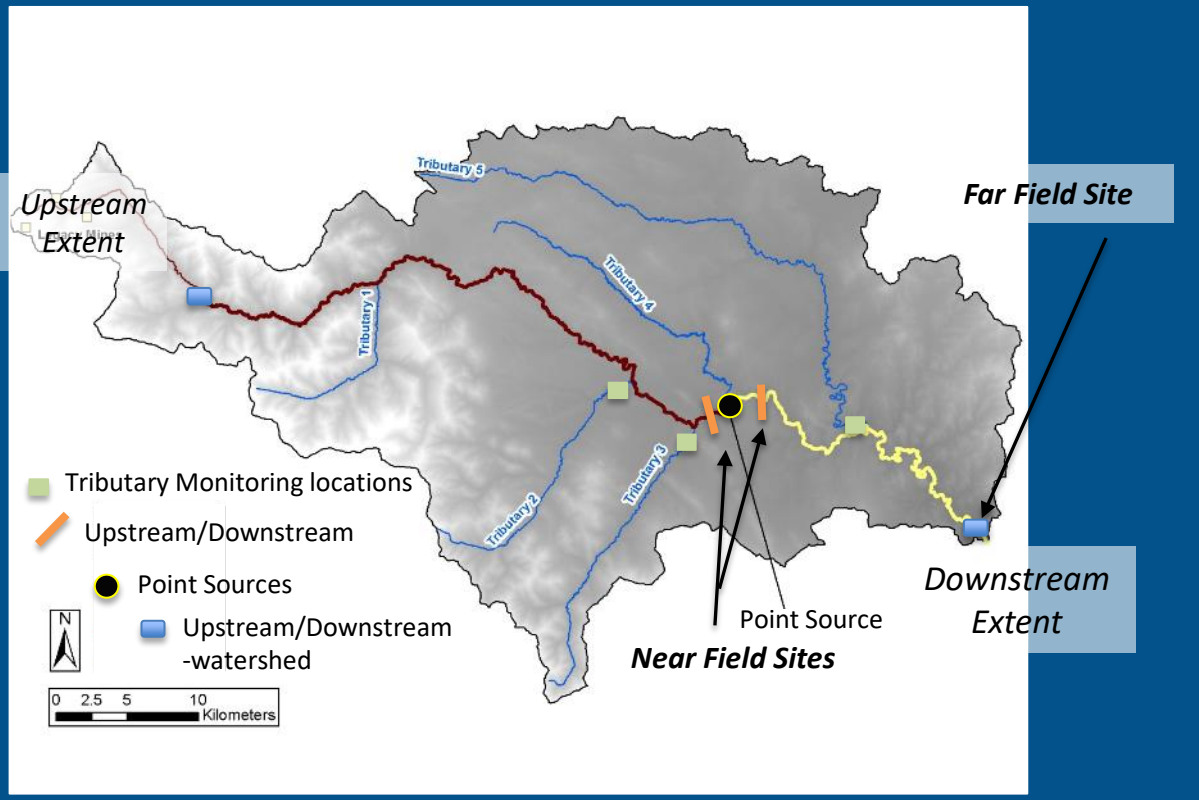
Scenario 1: One MPDES Permittee and Nutrient Healthy Watershed



Scenario 1) One MPDES point source within watershed and streams within watershed unimpaired for nutrients

First Phase; Example Permit Conditions

Effluent Limits:

- Retain existing TN/TP-if applicable
- Potential for adding response variable relative change or threshold effluent limits
- Potential require nutrient Optimization efforts

Monitoring:

Initial watershed scale monitoring plan include minimum elements:

- Upstream and downstream watershed extent boundaries
- Major tributaries
- Watershed inventory

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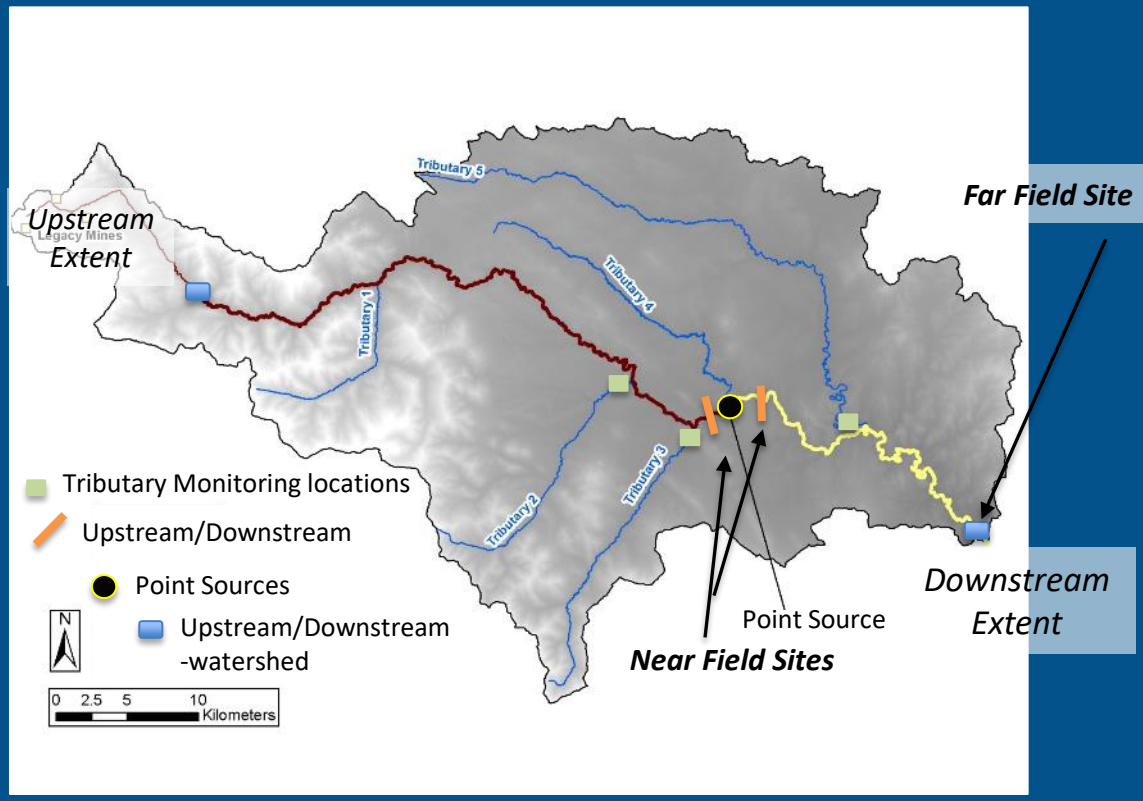
Scenario 2: One MPDES Permittee and Nutrient Impacted Watershed



Scenario 2) One MPDES point source within watershed and streams within watershed impaired/impacted from nutrients

First Phase; Example Permit Conditions

Effluent Limits:

- Retain existing TN/TP-if applicable
- Add relative change or threshold response variable effluent limits

- Require nutrient optimization efforts

Monitoring:

Initial watershed scale monitoring plan include minimum elements:

- Upstream and downstream watershed extent boundaries
- Major tributaries
- Watershed inventory

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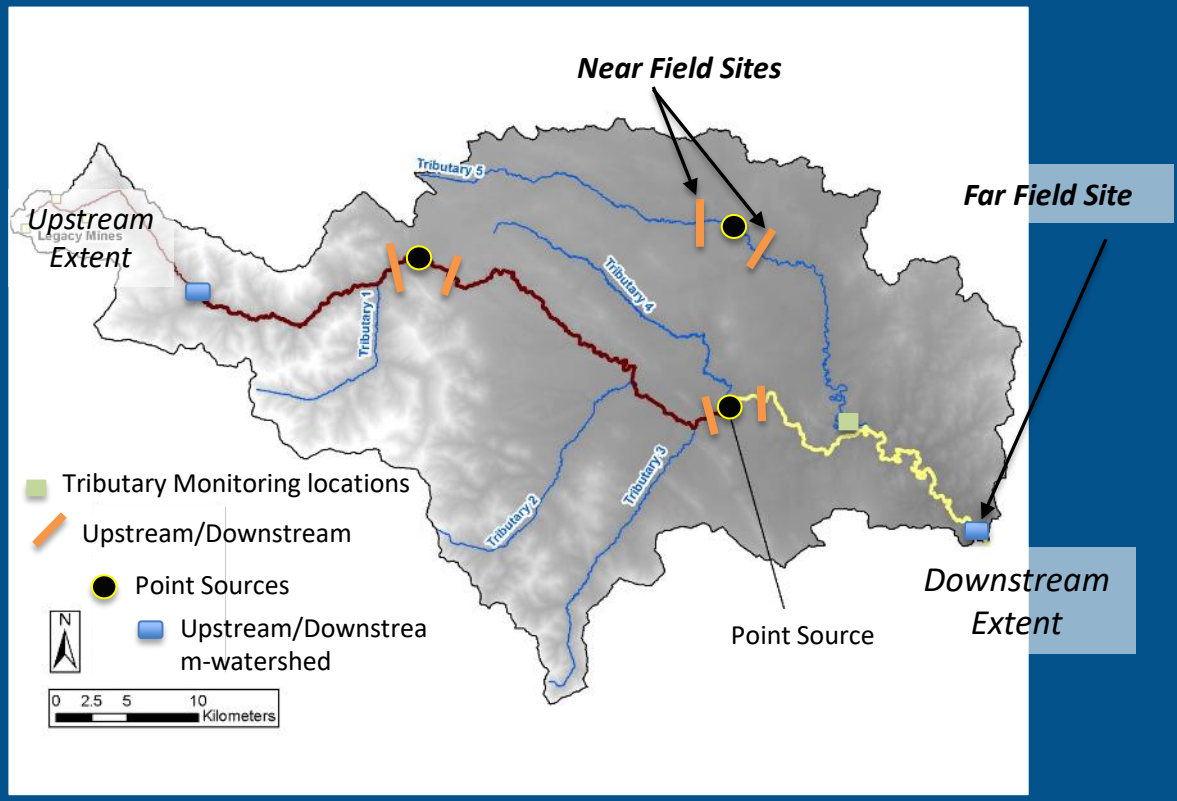
Scenario 3: Multiple MPDES Permittees and Nutrient Healthy Watershed



Scenario 3: Multiple MPDES point sources within watershed and streams within watershed impaired/impacted from nutrients

First Phase; Example Permit Conditions

Effluent Limits:

- Retain existing TN/TP-if applicable
- Potential for adding relative change or threshold response variable effluent limits-Permittee specific analysis based on near field response variable data
- Require nutrient optimization efforts

Monitoring:

Initial watershed scale monitoring plan include minimum elements:

- Upstream and downstream watershed extent boundaries
- Major tributaries
- Watershed inventory

*Permittees will be required through time to complete entire AMP process.

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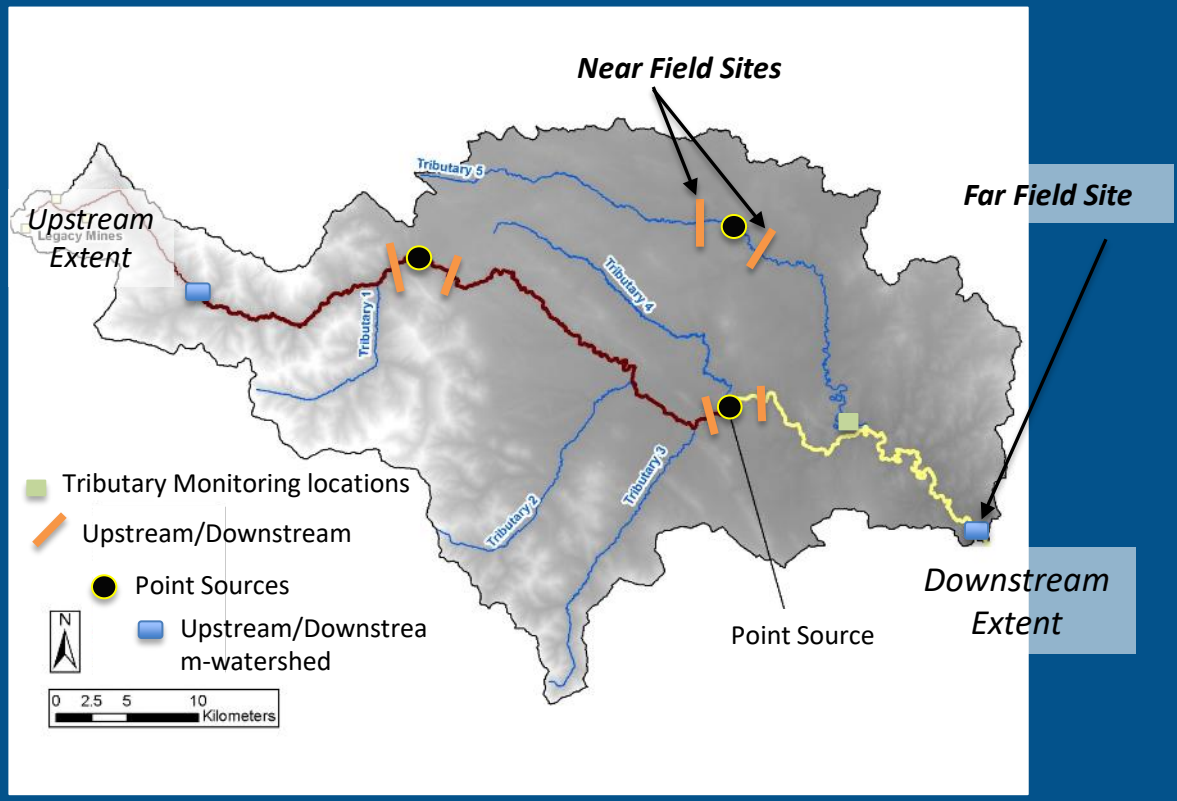
Scenario 4: Multiple MPDES Permittees and Nutrient Impacted Watershed



Scenario 4: Multiple MPDES point sources within watershed and streams within watershed impaired/impacted from nutrients

First Phase; Example Permit Conditions

Effluent Limits:

- Retain existing TN/TP-if applicable
- Add relative change or threshold response variable effluent limits-Permittee specific analysis based on near field response variable data
- Require nutrient optimization efforts

Monitoring:

Initial watershed scale monitoring plan include minimum elements:

- Upstream and downstream watershed extent boundaries
- Major tributaries
- Watershed inventory

*Permittees will be required through time to complete entire AMP process.

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Example Response Variable Monitoring Table: Near Field Sites

Table 2. Instream Nutrient Response Variable Monitoring Requirements – Near Field

Parameter	Units	Sample Type	Minimum Frequency	Reporting Requirement	RRV (1)
Upstream Benthic Algal Chlorophyll-a (2)	mg/m^2	See SOP	Twice/Season (3)	Seasonal Average and Daily Maximum (4)	0.1
Downstream Benthic Algal Chlorophyll-a (2)	mg/m^2	See SOP	Twice/Season (3)	Seasonal Average and Daily Maximum (4)	0.1
Upstream Benthic Algal Ash Free Dry Weight (5)	g/m^2	See SOP	Twice/Season (3)	Seasonal Average and Daily Maximum (4)	0.1
Downstream Benthic Algal Ash Free Dry Weight (5)	g/m^2	See SOP	Twice/Season (3)	Seasonal Average and Daily Maximum (4)	0.1
Upstream Macroinvertebrates (6)	HBI (6)	See SOP	Once/Season (7)	Single Sample	--
Downstream Macroinvertebrates (6)	HBI (6)	See SOP	Once/Season	Single Sample	--
Upstream Filamentous Algae Percent Bottom Cover (5)	%	Visual (See SOP)	1/Month (8)	Single Sample	1 (?)
Downstream Filamentous Algae Percent Bottom Cover (5)	%	Visual (See SOP)	1/Month (8)	Single Sample	1 (?)
Upstream Dissolved Oxygen Delta	mg/L	Auto Sampler	Continuous (10)	Weekly Average	0.5
Downstream Dissolved Oxygen Delta	mg/L	Auto Sampler	Continuous (10)	Weekly Average	0.5
Total Nitrogen, as N (9)	mg/L	Grab	1/Month (8)	Single Sample	0.07
Total Phosphorus, as P (9)	mg/L	Grab	1/Month (8)	Single Sample	0.003

(1) Required Reporting Value
(2) Samples must be collected and analyzed using DEQ Standard Operation Procedure (SOP) WQPBWQM-011
(3) Season is July through September. Sampling events must be at least 6 weeks apart.
(4) Highest value of the two sampling events. If more than two sampling events, report maximum.
(5) DEQ Assessment Methods (2016).
(6) Hilsenhoff Biotic Index. DEQ Standard Operation Procedure WQBWQM-009
(7) Must be sampled during one of the benthic algal sampling events.
(8) July through September only. Two of the sampling events must pair with the benthic algal events. Report monthly.
(9) Persulfate digestion method.
(10) Minimum 30 continuous days. At least 21 days in August.

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Discussion / Questions

Action Items

Nutrient Work Group Action Items

	Action	Who*	Status
1	Provide documents in advance of NWG meetings	DEQ	On-going
2	Get Microsoft Teams up and running for NWG and TSC members	DEQ	Complete
3	Address the question of nonpoint source participation in the AMP process	DEQ, NWG	Complete
4	Consensus opinion of farming and nonpoint source community on this process and what they think is possible or realistic	Nonpoint source representatives	Comment Noted
5	Add timeframes to the Adaptive Management Program flowchart	DEQ and TSC	On-going
6	Indicate responsibilities for adaptive management program in flow chart	DEQ and TSC	Complete
7	Summarize the process for determining a wadeable stream vs large river	DEQ	Complete
8	Add groundwater to the adaptive management program framework	DEQ and TSC	Complete
9	Summarize and provide training on SOPs for sampling nutrients	DEQ	On-going
10	Provide copy of EPA action letter on Utah's headwater streams	DEQ	Complete
*** NWG = Nutrient Work Group, TSC = Technical Subcommittee**			

Technical Subcommittee Action Items

In-Progress Action Items			
#	Action	Who	Status
1	Provide feedback from the TSC about the time component in the flow chart	TSC	In progress
2	Update the flowchart and supporting materials based on TSC feedback	Rainie DeVaney, Mike Suplee	In progress
3	Receive feedback from TSC on time component of each flowchart step.	TSC	In-progress
4	Define what phosphorus prioritization means	DEQ and TSC	Pending
5	Define roles and responsibilities of DEQ and permittees for AMP process	DEQ	In-progress
6	Identify and define what is needed to determine how far upstream and downstream monitoring should occur for a point source	TSC	In-progress
7	Put together case study of what DEQ thinks is a reasonable minimum of data collection for large rivers	DEQ	In-Progress

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Technical Subcommittee Action Items

Complete Action Items			
#	Action	Who	Status
1	Distribute the flowchart and supporting materials to the TSC in a format to provide comments/track changes	Rainie DeVaney, Mike Suplee	Complete
2	Consider other measures that may trigger action (Box 7 of flowchart)	TSC	Complete
3	Clarify in the supporting documents that the narrative standards are those referenced in the Administrative Rules of the Montana of the State of Montana.	Rainie DeVaney, Mike Suplee	Complete
4	Define the overall work for the AMP by the June 23 Nutrient Work Group meeting	TSC	Complete
5	Provide information to the TSC on how to get on the agenda for a future meeting	Rainie DeVaney, Mike Suplee	Complete
6	Schedule two TSC meetings between each Nutrient Work Group	Rainie Devaney, Mike Suplee	Complete
7	Set up Teams TSC collaboration site. Send invite email. Post comments received from TSC members and draft DEQ documents	Moira Davin, Christina Staten	Complete
8	Update AMP definition based on TSC feedback. Share out to TSC.	Rainie DeVaney, Mike Suplee	Complete
9	Decide whether medium sized rivers should be broken out	TSC	Complete
10	Add the draft approach for determining watersheds to Teams for feedback from TSC	Mike Suplee	Complete
11	Reorganize technical subcommittee Teams folders so they are more intuitive	DEQ	Complete
12	Receive written comments from League of Cities and Towns	Amanda McInnis	Complete
13	Medium rivers definition	Mike Suplee	Complete
14	Create bibliography of nutrient-related literature	DEQ	Complete

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Nutrient Work Group Feedback

What type of training would be most helpful to you when the Adaptive Management Program is rolled out?

- Field training
- Online videos
- Online webinars
- In-person meetings:
  - Locations?
  - Which months work best?

Are there additional training topics that would be helpful to execute the Adaptive Management Program?

Are there partnerships that would be valuable for the Adaptive Management Program?

Are there creative ways to get the word out across the state about the new program? Should communication methods vary? What types should be used?

We are halfway through this process and are getting into specifics on program implementation. DEQ realizes there are still unknowns about implementation; however, how are you feeling about the process so far?

What would make you feel more engaged in the NWG or TSC?

Do you feel you understand the information presented or is it too complex?

How could you help contribute to the process and implementation? Do you already have ideas and plans you would like to share?

Next Meetings

Next Meeting

- Wednesday, September 22: 9 – 11 a.m.
- Next meeting topics:
  - Wrap-up from today's meeting
  - Outstanding questions
  - AMP – TMDL relationship
- Technical Subcommittee meeting
  - Tuesday, September 7: 1:30 – 3:30 pm

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Future Meetings

Listening Session:

September 23: 1-3 p.m.

Website question submittal button
https://deq.mt.gov/water/Councils

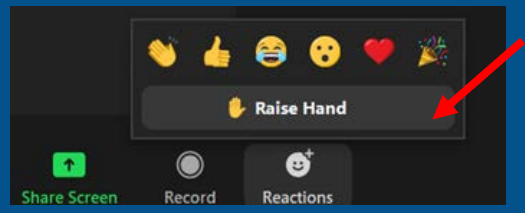
Nutrient Work Group Meetings

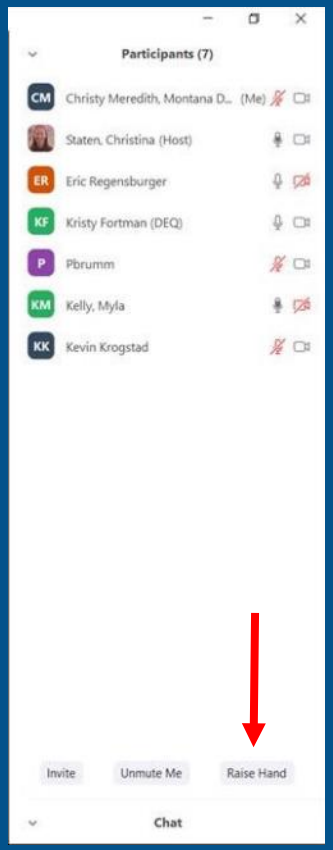
- October 27: 9-11 a.m.
- November Meeting?
  - Rule change updates
  - Outstanding items
  - Guidance & SOP Updates

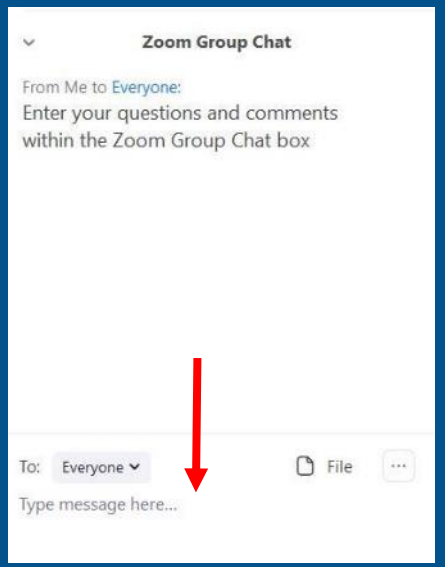
Public Comment

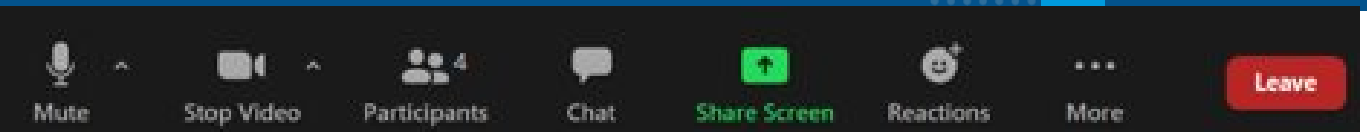
Questions/ Comments

- Raise hand or type questions into the chat
- Please keep your microphone muted until called on
- If calling by phone, press*6 to unmute
- State your name and affiliation before providing your comment









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As Time Allows:
MS TeamsTutorial

Thanks for Joining Us

Contact:
Galen Steffens
Galen.Steffens2@mt.gov

To submit comments or questions

Submit Comments or Questions

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

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