NUTRIENT WORK GROUP MEETING SUMMARY
FEBRUARY 23, 2022

9:00 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 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
Kelly Lynch Montana League of Cities and Towns	Municipalities
Tammy Johnson Montana Mining Association	Mining
Rachel Cone (sub. for John Youngberg) Montana Farm Bureau	Farming-Oriented Agriculture
Jay Bodner Montana Stockgrowers Association	Livestock-Oriented Agriculture
Kristin Gardner Gallatin River Task Force	Conservation Organization: Local
Guy Alsentzer (sub. for Sarah Zuzulock) Upper Missouri Waterkeeper	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
Jeff Schmalenberg MT Dept. of Natural Resources and Conservation	State Land Management Agencies
Andy Efta U.S. Forest Service, Northern Region	Federal Land Management Agencies
Erik Makus (sub. for Tina Laidlaw) U.S. Environmental Protection Agency	Federal Regulatory 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
Scott Buecker AE2S	Wastewater Engineering Firms

NOT IN ATTENDANCE: NUTRIENT WORK GROUP MEMBERS

Representative & Affiliation	Representing
Vacant	County Water Quality Districts or Planning Departments

ATTENDANCE: OTHER PARTICIPANTS

Aaron Losing, City of Kalispell
Amanda McInnis, Jacobs
Amelia Flanery, DEQ, Surface Water Discharge Permitting
Amy Deitchler, Great West Engineering
Amy Steinmetz, DEQ, Water Quality Division Administrator
Andrew Gorder, Clark Fork Coalition
Bill Andrene, City of Butte
Brian Heaton, City of Bozeman
Christina Staten, DEQ, Watershed Management Section
Coralynn Revis, HDR
Darrin Kron, DEQ, Monitoring and Assessment Section Supervisor
Dave Galt, Montana Petroleum Association
David Clark, HDR
Ed Coleman, City of Helena
Eric Regensburger, DEQ, Water Quality Standards and Modeling Section
Eric Trum, DEQ, Watershed Protection Section Supervisor
Galen Steffens, DEQ, Water Quality Planning Bureau Chief
Griffin Nielsen, City of Bozeman
Haley Sir, DEQ, Surface Water Discharge Permitting
Hannah New, DEQ, Surface Water Discharge Permitting
Heather Henry, DEQ, Surface Water Discharge Permitting
Jane Madison, DEQ, Water Quality Standards and Modeling Section
Jason Fladland, City of Great Falls
Jason Mohr, Legislative Environmental Policy Office
Jeff Dunn, WGM Group
Jeff May, DEQ, Surface Water Discharge Permitting
Jeremy Perlinski
Joanna McLaughlin, DEQ, Surface Water Discharge Permitting
Joe Lierow, ExxonMobil Billings Refinery
John Esp, Montana State Senator
Jon Kenning, DEQ, Water Protection Bureau Chief
Josh Viall, DEQ, Compliance and Technical Assistance Section

Katie Hendrickson, City of Billings
Katie Makarowski, DEQ, QA Officer
Kristi Kline
Kurt Moser, DEQ, Legal Counsel
Laura Alvey, DEQ, Superfund Program
Leea Anderson, City of Helena
Logan McInnis, City of Missoula
Mark Ockey, DEQ, Watershed Protection Section
Matt Wolfe, Sibanye Stillwater
Maya Rao, DEQ, Surface Water Discharge Permitting
Michael Kasch, HDR
Michael Suplee, DEQ, Water Quality Standards and Modeling Section
Moira Davin, DEQ, Public Information Officer
Myla Kelly, DEQ, Water Quality Standards and Modeling Section Supervisor
Nick Danielson, DEQ, New Media Specialist
Paul Skubinna, City of Great Falls
Peggy Trenk, Treasure State Resources Association
Peter Scott
Rainie DeVaney, DEQ, Surface Water Discharge Permitting Section Supervisor
Rickey Schultz, HDR
Robert Ray, Helena citizen
Ryan Koehnlein, DEQ, Monitoring and Assessment Section
Ryan Sudbury, City of Missoula
Ryan Urbanec
Scott Mason, Hydrometrics
Shane LaCasse, CHS
Tai Koester, Northern Plains Resource Council
Tara Rice, Parsons, Behle, & Latimer
Tim Burton, Montana League of Cities and Towns
Vicki Marquis, Holland and Hart
Vicki Watson, University of Montana Watershed Clinic

MEETING PURPOSE / OBJECTIVES

- Discussion of items 2d through 3 of discussion proposal document

MEETING HIGHLIGHTS / DECISIONS MADE

- Discussion was had through topic 3 of the discussion document
- Topics 4 and 5 were introduced by DEQ, but no comments were made

MEETING INITIATION

Moira Davin, DEQ public information officer and meeting facilitator, welcomed everyone to the meeting just after 9 a.m. and announced that the meeting had been changed to a Zoom webinar due to security issues. Nutrient Work Group members, including technical representatives, were then promoted to panelists. Moira went over meeting logistics (slide 2 of **Attachment A**), the meeting agenda (slide 3 of **Attachment A**), and took a roll call of Nutrient Work Group members present either via Zoom or in

Room 111 of the DEQ Metcalf Building in Helena (slide 4 of **Attachment A**). Moira noted that there is a vacancy for Water Quality Districts / County Planning Departments, as Pete Schade has left his position with the Lewis and Clark Water Quality Protection District. DEQ is working to fill this vacancy. Moira also reviewed slides 5 and 6 of **Attachment A** as a reminder on group discussion and that DEQ is the final decision maker.

FOLLOW-UPS FROM LAST MEETING AND THEMES OF CHECK-IN MEETINGS

Moira Davin stated that DEQ is having internal discussions about the timeline and will revisit this at a future meeting.

Moira also stated that the check-in meetings with Nutrient Work Group members have been very helpful and went over the common themes shown on slide 7 of **Attachment A**. She noted that we all have experience and expertise in different areas and encouraged Nutrient Work Group members to speak up if it's their area of expertise so we can all learn from each other. Moira also pointed out that the majority of members expressed appreciation for DEQ's expertise and explanations and that DEQ appreciated hearing this feedback. She also stated that Michael Suplee was one of the main scientists that helped develop the original science behind the numeric nutrient standards and is helping to develop the science to interpret the narrative standards.

DISCUSSION DOCUMENT: 2A -3

Slide 9 of **Attachment A** was brought up showing items 2a through 3 of the discussion document. Moira Davin noted that 2a through 2c were discussed at the last meeting.

Revisit of 2a through 2c

Moira Davin stated that DEQ received comments on section 2 from the NGOs yesterday and asked them if they had any comments to share on items 2a through 2c, even though these topics were discussed at the last meeting.

Guy Alsenzter, environmental advocacy organization representative, stated that he contributed to those comments, along with Trout Unlimited. He stated that comments on section a are focused on clarity: who's going to do what and how it's going to happen. Guy also stated that BMPs that are functionally replacing offsets need to be shown and verified, and he suggests a BMP manual: a universe of the different types of strategies that are applicable to nonpoint sources. The only national example is the Chesapeake Bay example. A fundamental element of that approach is a thoroughly verified BMP manual. However, overall, his main concerns are accountability, transparency, and enforceability. Who is doing the work and who holds the compliance burden?

Kelly Lynch, municipalities representative, stated that she is starting to read through their comments and really appreciates them.

2d: Review and Prioritize Beneficial Uses

Michael Suplee, DEQ water quality scientist, gave a summary of the comments received on this topic. The bill proponents commented that an AMP stakeholder group determines which beneficial uses are most sensitive to nutrients and develops a range of response variable threshold levels they deem will

protect the use. Conservation organizations disagree. They state that an AMP's purpose is not to be a new mechanism for performing, essentially, a use attainability analysis (UAA) for waters.

Michael then gave the department's position on this topic. DEQ does not intend that the Adaptive Management Program include systematic verification of prior technical and legal determinations (i.e., defined waterbody beneficial uses as found in ARM 16.30.607 through 614). Permittees (and others) may pursue a use attainability analysis to change or downgrade a use, if appropriate, per 75-5-302, MCA and ARM 17.30.602(39). However, we want to point out that UAAs are data intensive and hard to do and must undergo EPA review and approval. If DEQ misunderstands the intent of 2d, we would like to understand what was meant.

Kelly Lynch stated that we're not trying to supplant the UAA process. We are just saying the first step would be to have a discussion and look at the data to see if the UAA process is something that the watershed should follow and be going through.

David Brooks, statewide conservation organization representative, said he appreciates hearing that from Kelly. He had concerns about this supplanting a UAA process and didn't want to see that happen. Even going through the UAA would raise red flags as the purpose is to protect water quality, not downgrade it.

Guy Alsentzer stated he appreciated the clarity on DEQ's intents. His sticking point is in subsection d, stating that's not actually what is required based on his understanding of the AMP and Senate Bill 358. Inherent in 358 is not going through and talking about attainability; we're talking about identifying nutrient pollution and reducing those sources. He's concerned about anything that puts forward the idea of having to do an attainability analysis before the doing the primary task of determining where the nutrient pollution is presenting itself and how to tackle it.

Amanda McInnis, technical representative for municipalities, stated she wanted to explain a little more. If the original review of uses finds that the uses cannot be attained, a UAA could be triggered. It seems wise that any adaptive management plan would start with an assessment of the beneficial uses of a watershed. The idea that you would remove that conversation from the process entirely seems like we're missing a valuable link behind the intention of the program: the best pathway to support the uses.

David Brooks stated he wanted to push back a little on that and appreciates Amanda articulating her thoughts. David further stated that we do not see the process being about reassessing the beneficial uses – those are established. This is about how to meet them through the AMP. it's not about reassessing the beneficial uses, it's about how to meet them in a different way than before.

Guy Alsentzer stated that the Clean Water Act and its requirements about what uses are deemed legally protective are statutorily on the books. The state of Montana cannot impose a new approach that superimposes this. We should be moving forward under the assumption that the uses are in fact protective. The use of the word "appropriateness" is essentially building a UAA into the AMP program and environmental groups are not interested in this.

Amanda McInnis stated this is not a UAA, but a site-specific review of the beneficial uses by the people who know the watershed best. This seems like a reasonable place to start.

Kelly Lynch stated there's no there's no intention to replace the UAA process - that can be triggered and followed by anyone at any time. The idea is if there's a real issue in a waterbody about whether there's a use trying to be protected that isn't an actual use of that waterbody, then why wouldn't we want to talk about the appropriateness of that use and stop the AMP process if the feeling at that point is that we should do a UAA.

Guy Alsentzer stated that to him prioritize means the most sensitive uses that deserve the most protection. Regarding "applicability and appropriateness," the AMP's purpose is not to talk about the applicability of beneficial uses; it's to talk about whether it's being met. The Clean Water Act already told us what is attainable under Section 301(a). He would love to have EPA chime-in, as this is a very black and white matter. An AMP cannot lawfully go forward and assess applicability and attainability. This process should not consider this. We should review and prioritize whether beneficial uses of waterways are in fact being attained, but the AMP should not be geared toward assessing the appropriateness of those beneficial uses.

Amanda McInnis stated that maybe we need different language here. It sounds like you disagree that when we're making watershed-specific decisions that should be blind to the beneficial uses of the watershed.

Guy Alsentzer replied "not at all." There should be a 100% understanding of the beneficial uses of the waterway. We should also look at the monitoring data to determine whether those uses are being attained. This is separate from their legal designation of whether they are an existing use or a presumed attainable use.

Amanda McInnis stated we need to figure out a way to keep beneficial uses as part of this conversation. This is less prescriptive than people are presuming it to be. Maybe "applicability" is the issue – maybe we need a softer word.

Erik Makus, substitute representative for federal regulatory agencies, asked a question of DEQ: at the beginning of the 2d conversation, DEQ stated it is not going to revisit the beneficial use analysis for each watershed, but how does that connect with the language in 2d?

Amy Steinmetz, DEQ Water Quality Division Administrator, stated our intent in saying we won't revisit all the beneficial uses is that DEQ has gone through the process of classifying all of our state waters and assigning beneficial uses. It exists under the Clean Water Act and under Montana law – that beneficial uses are based on existing or attainable uses, as of the 1970s under state law. To just look at currently attainable uses goes against the intent of the Montana Water Quality Act and the protection of uses. If a local watershed group had evidence that uses may not have been attainable in 1971, we want to know about that and possibly pursue a UAA, but it's not based on current attainability; it's based on attainability in 1971.

Darrin Kron, supervisor of DEQ's monitoring and assessment section, stated he works in the section that assesses whether uses are supported or not and based on a couple thousand assessments over the years, we run across questions about whether there's inappropriate uses on a waterbody way less than 1% of the time. Just to provide some perspective; it's a possibility, but it's low.

David Brooks stated he appreciates that explanation from DEQ and it was very helpful. He doesn't think that anyone should go into the AMP process blind to beneficial uses. His heartburn is that reassessing

beneficial uses should not be part of the AMP – beneficial uses are long and well established. Should use an AMP for how to achieve them through the AMP, not reassessing the beneficial uses.

Kelly Lynch stated it is clear that we're all saying the same thing. We are not proposing to create something that supplants the UAA process. The first question to answer is: reiterate what the ben uses are. Then there is an exit ramp to go into UAA process if there is disagreement over the beneficial uses. Just an acknowledgement that it happens, but it's super rare.

David Brooks stated that the UAA process exists; it doesn't need to be written into the AMP. He has heartburn that we would write any of that into the AMP which is supposed to be about attaining the beneficial uses.

Guy Alsentzer stated his suggestion would be to rewrite subsection 2d as plain language and to remove the portion about assessing the applicability/appropriateness/attainability.

2e: Create Process to Compile and Define Relevant, Credible, Current Data

Michael Suplee summarized comments received on this topic. The bill proponents commented that responsibility for defining the current condition of the watershed would be established in an AMP Charter Document. They also commented that data must be sufficient and credible; it must meet a series of quality control measures to be used. Conservation organizations commented that defining current conditions must be a DEQ responsibility alone per the Clean Water Act and the Montana Water Quality Act's assessment requirements based on sound science, not a stakeholder group decision. Assessment of data quality is a DEQ duty and must remain with DEQ, not regulated entities or private sector.

Michael then stated the department's position on this topic. Per 75-5-702, MCA, DEQ is responsible at the waterbody scale for water quality assessment and listing decisions, including determining when data is sufficient and credible. DEQ has standard operating procedures (SOPs) for collecting credible data and can provide regional training to AMP and volunteer monitoring programs; DEQ is willing to work with watershed groups and use data they may collect.

Darrin Kron added that some of our assessments have been completed in the distant past and we're willing to work with anyone that has readily available data to update our assessments based on newer information.

Rika Lashley, small point source dischargers representative, stated that DEQ doesn't get any extra money to do any sampling and would have to rely on others to sample and would train others to do that – is this a matter of those doing the AMP to do the sampling and DEQ reviews it? She clarified that she's not disagreeing with anything, it's just a matter of how this will work.

Darrin Kron responded that he agrees with everything Rika said.

2f: Establish Workplan, Including Sampling Locations, Frequency, Etc.

Michael Suplee summarized comments received on this topic, stating that this topic was previously covered by the bill proponents and addressed in Chartering. Michael stated that the department's position is that a workplan/sampling plan pertaining to modeling will be touched on after model selection.

No comments were given on this topic.

DEQ Topic: Establish a Watershed-Scale Workplan which Includes Consideration of Lakes/Reservoirs and Downstream Effects

Michael Suplee explained this was a topic that DEQ added and stated the department's position: In an AMP watershed monitoring plan, permittees must identify if there is a lake or reservoir in their AMP watershed. Downstream effects, particularly for the non-target nutrient (normally nitrogen), should be given consideration in an AMP. Permittees who discharge nutrients directly to a lake or reservoir will likely be required to have year-round monitoring or limits for nutrients.

David Clark, technical representative for large point source dischargers, asked if Michael could give an example of the spatial extent of what he's referencing when stating "downstream effects"? Michael Suplee responded that it's case by case and asked rhetorically when it's reasonable to assume that an upstream POTW has an effect on a downstream reservoir. Michael further stated that monitoring, assessment, standards, and TMDL folks can usually get a sense of whether a discharger is likely having an impact or not at some distance downstream.

David Clark then asked when in the process would you envision that determination being made? Michael responded that because it's part of the monitoring plan, it would want to be identified fairly early on.

David Brooks asked if Michael could summarize why this special consideration is being given to downstream lakes and reservoirs? Why do lakes need different, year-round protections?

Michael Suplee responded that one of the things we know is that excess nutrient problems in flowing waters manifest during the summer months. During the winter, there's really not any nutrient problems manifesting, generally, and then spring runoff acts as a reset mechanism. On the other hand, lakes and reservoirs get their loading year-round. Stuff coming in in the spring or summer, is manifested in the summer or when lakes turnover and stratify. Lentic waterbodies like lakes need year-round protection.

David Brooks then asked if there might ever be sections of major rivers that fit these same criteria of the fact that it's not flowing water and doesn't have flushing flows?

Michael Suplee responded that none come to mind, but he wouldn't say that it's impossible. Michael further stated that if there are sections of large river that meet those criteria, it would probably be impounded, which falls into the reservoir category. He thinks, generally, we're not going to see that kind of thing: necessity for year-round limitations on a river.

David Brooks clarified that he's thinking of areas where there are major diversions in a river.

Michael Suplee stated he's not really sure that's part of our geography here. Harmful algal blooms (HABs) are a sign of a nutrient problem in the mid-west and we get them here too. Very large, slow-moving rivers in the Midwest with lochs on them is where you're getting lake-reservoir type manifestations of HAB problems, but we generally haven't seen that in Montana.

2g: Carry Out Sampling, Analyze Data, and Quantify Source Loads

Michael Suplee summarized comments received on this topic. The bill proponents commented that nutrient data that is available at the outset of the AMP process will be superseded by new, additional watershed monitoring. New information will inform updated and ongoing assessment of watershed conditions and targeting of data collection. Conservation organizations commented that they are concerned that the bill proponent's draft circular language could result in the discarding of important baseline data representing earlier conditions when a watershed was in good condition.

Michael then stated the department's position on the topic: early baseline data can be incredibly useful and needs to be retained and used, as appropriate, but data that is an artifact of an outdated TMDL should be updated to represent current conditions.

David Brooks wanted to clarify that their concern is that writing-in UAAs or downgrading beneficial uses, we don't want the slate to be cleaned of historic data such that current data of degraded quality of water is used to reestablish beneficial uses. Historical data has value of what beneficial uses have been and ought to continue to be.

Kelly Lynch stated she wanted to make it clear that goal is to make sure that when a point source discharger has made some very significant improvements to their systems, we want to make sure we're operating on the data and facts that reflect the improvements that have already been made. Trying to get at: if improvements have been made, can the data please reflect that?

Darrin Kron stated that he wants to let people know how DEQ tackles this issue. Generally, we use the last ten years worth of data to represent current conditions. We will sometimes justify not using all ten years if there's been degradation or improvements in water quality that we know about. We dig into why the conditions changed and use data only after that for comparing to the standards.

David Clark stated that these are good comments on the value of historical data and understanding the baseline. The intent here really was in planning the next management steps to use the most current data and not rely on data from the past when major management efforts have changed what's been going on in the watershed. We do agree we need the baseline data.

3: Create Conceptual Watershed Model

Michael Suplee explained that section 3 was originally one topic; however, the bill proponents divided it into three parts when they submitted comments.

3a: Conduct Initial Watershed Assessment

Michael Suplee summarized the bill proponent's comments on this topic: DEQ or other recognized entity shall compile an inventory of literature sources and data for which to assess the nutrient condition of the watershed. Resources include: DEQ Integrated Report; DEQ water quality monitoring records/assessments and water quality district data; a TMDL, if applicable; and stream flow. Basically, an outline of an initial process to gather data and what those sources might look like.

David Brooks stated that while current relevancy of data and documents is important, we want to make sure we're not superseding historical data. Could we flesh out bullet points? Please be as complete as possible on the different sources that might be used.

Darrin Kron stated that the DEQ beneficial use assessment and TMDL section have a list of where we go to look for data and we can share this.

3b: Create Conceptual Watershed Model

Michael Suplee summarized the bill proponent's comments on this topic: per rule, a conceptual watershed model must be developed for AMP watersheds that exceed the protective range within specified spatial and temporal boundaries. The model can be used to explore looking at different ways of addressing a problem before selecting a solution and guide data collection/analysis.

Michael Suplee stated that the stakeholders put together a series of presentations on work they had been doing and presented that to the Nutrient Work Group in September 2021. These presentations included slide 10 of **Attachment A**. Michael then stated the department's position on this topic: DEQ does not agree that conceptual models should be required in all AMP cases; they can be helpful in some cases. Conceptual models visualize presumed causal sources and their interactions in affecting a biological assemblage (for example, macroinvertebrate populations). They can be used as a structured "process of elimination" (i.e., this nutrient source is important, this one is not). Conceptual models often contain components for which DEQ already has established water quality standards (e.g., DO, pH). They have little predictive power (that requires mechanistic modeling). Conceptual models are usually site specific, that is, built to describe influences on a biological assemblage at a particular site or stream reach, because at another location the influencing characteristics change. EPA has detailed guidance on conceptual models. Michael Suplee concluded by stating he would like to hear the bill proponents' comments on why these models must be developed for each AMP.

David Brooks asked what "exceeds the protective range" means. Is this a single exceedance? We've talked about this before as word that could mean different things and could use a better definition.

Amanda McInnis stated that in general, she thinks we should be thinking in terms of over the nutrient season and seasonal averages. Her inclination is to define exceedance as a single season average. She agrees that should be written down and better defined.

David Brooks recommends that we look to other examples where it's been well established to account for things like acuteness of exceedance versus over-time averages.

Amanda McInnis stated that nutrients act different than toxics do because they exhibit acute toxicity so there must be short-term limits written in those situations. Many states use seasonal averages to regulate nutrients. The beneficial uses aren't impaired with a short-term increase in nutrient load; it's really the chronic longer-term exposure to nutrients that can address or impair the beneficial uses. We're talking about using longer averaging periods and think that can be protective of the beneficial uses.

Darrin Kron wanted to add that we're trying to control response variables (DO, pH shifts, algae growth) and some of those things can be more acute (like low DO), but are getting into response variables that are more tricky to deal with on exceedance rates. However, we are wanting to prevent a recurrence of algae blooms that can affect recreational uses. In general, Darrin agrees with what Amanda is saying, but needs to think about how to proceed with setting conditions that allow exceedance rates that are higher.

David Brooks stated he appreciates Darrin pointing out that there are water quality impacts that do have acute impacts (e.g., temperature, DO, flow) that especially affect the angling community. Acute nutrient release could also affect long-term conditions in lakes, reservoirs, or stretches of river where nutrients stay longer. This is worth a more nuanced definition.

Guy Alsentzer stated that he would add that generally speaking, we would seek the most conservative approach, including acute, not just chronic factors. Protecting the most sensitive use is the approach that should be reflected in definitions.

Kelly Lynch stated that to be clear, they're talking about the triggering point for when a conceptual model would be created under an AMP. It isn't a matter of regulation – that's done in our permits.

3c: Mechanistic Water Quality Models

Michael Suplee summarized comments from the bill proponents that stakeholders may develop mechanistic water quality models, and they are often used in large rivers. Michael stated that the language from the bill proponents is largely in line with what DEQ included in the October guidance.

Michael Suplee then went over slide 11 of **Attachment A**, stating that mechanistic models are mathematical representations of reality and take known mathematical relationships like water velocity and break it out into a process in the model that processes things through a flowing water system. Researchers started developing them in the 1970s and have been refining them ever since. They provide quite precise flow and temperature patterns, if you have good data. The level of noise tends to increase with biological data (e.g., algal growth). All those components, nutrients, DO, etc. can be input into models.

In reviewing slide 12 of **Attachment A**, Michael Suplee stated that this is an example of what mechanistic models can be used for. This was a model that DEQ built for the lower Yellowstone River. For each data collection point, you can see the DO average, daily high, and daily low DO. The objective of the model is to simulate the DO patterns as accurately as possible. Basically, you collect data so the model accurately reflects your system. Then you validate the model. The real advantage of mechanistic over conceptual models is that you can manipulate the inputs so you can determine what the changes will be on the water quality parameters you're actually concerned with – they have the ability to be predictive of future actions that could occur.

Louis Engels, large point source dischargers representative, asked how mechanistic models incorporate nonpoint sources.

Michael Suplee responded that it is incorporated in the sense that they're built into the actual water quality data that was used to build the model. It's more difficult with these models to simulate changes to nonpoint sources, but it is very straightforward to simulate changes at point sources (e.g., they reduce phosphorus load by a set amount). With nonpoint source, if you can identify the anticipated load reductions (some BMP is going to occur), then it can be simulated.

David Brooks asked if Michael could clarify that the squares shown on the graph are actual data stations. Michael responded: yes. David then asked if the red dashed lines are the modeled minimum and maximum? Michael responded: yes, and the black line is the average. David asked how the model can come up with the modeled max dip in the modeled max daily between the second and third data points. How can it dip like that? Michael responded that in all likelihood, it has to do with the actual physics of

the river (depth and width). If the river can offgas and reaerate with atmospheric oxygen back to the baseline (the blude line), it will cause oxygen to move closer to saturation. This is probably a section of the river where stronger resaturation occurs.

Darrin Kron asked if there are any watershed-wide models that are useful to look at sources using GIS data.

Michael Suplee responded that Darrin is referring to models like SWAT that can predict the amount of nutrients and sediment that can get to the waterbody based on land use practices. You can input BMPs and see what the reductions would be. These mechanistic models then can be used to show what will happen in a waterbody as a result. It is not uncommon to tie these two types of models (for example, SWAT and QAUL2K) together.

3d: Develop Monitoring Approach (Sampling and Analysis Plan)
Michael Suplee stated that the purpose of creating the initial conceptual and mechanistic models is to discover what is known and understood about the water nutrient and algal dynamics, and what is unknown. This leads to identification of data gaps and an adaptive approach to collecting additional information. A consistent sampling period of 3 to 5 years should be selected, unless flows during that period do not meet objectives or provide representative data.

No comments were made on this topic.

4: Assessment of Treatment Options, Resulting Load Reductions, and Associated Cost

Kelly Lynch stated that the bill proponents do not want to discuss sections 4 and 5. They are instead working on a proposal for interim decision making on nutrients until AMPs are completed. We wanted to bring this to the group for discussion as everyone seems to agree that simply administratively continuing permits is not the solution. Would like to discuss this at the next meeting.

Moira Davin stated that in terms of going through 4 and 5, DEQ knows we don't have comments from everyone yet, but we want to introduce the ideas.

Amanda McInnis stated that they're not ready to talk about 4 and 5. The content is substantial and need to have a proposal before the group before we can have a meaningful conversation about it.

Tammy Johnson, mining representative, stated they've started working on those sections and they're pretty complicated. Not ready to discuss 4 and 5 until we've completed our work.

David Brooks stated he's not had time to comment on these sections in writing and is not prepared to comment on them. He is happy to sit through DEQ's introduction of these topics, however.

Kelly Lynch stated she is fine with that too, but wants to ensure this doesn't supplant their ability to provide written comments on 4 and 5, and on this interim decision-making, and have ongoing discussion at future meetings.

Michael Suplee introduced topic/section 4 by stating that some of the rule and circular from October 2021 touched on this. The idea is that each point source must provide information about current and

potential treatment options for their load reductions and associated costs. A comment in October from the League and industry was a modification of theirs to the AMP definition: AMP means identifying and assigning treatment options to all dischargers in the watershed, considering the relative cost of their feasibility, and the expected water quality improvement, in determining whether to enforce such options or create voluntary incentives and programs for administration by DEQ. Michael concluded by saying that the general idea is that before instituting a requirement on a POTW or a facility is to take a hard look at what that's going to cost and how much gain will be achieved from it.

5: Identify and Prioritize Actions for Nutrient Reduction in the Watershed

Michael Suplee stated that there are a lot of subcomponents to this topic, as it was laid out in the crosswalk.

5a: Collaboration to ID Actions to Reduce Watershed Nutrients. DEQ to Allow Permit Compliance Flexibilities for Experimentation with New Technologies

Michael Suplee stated that all the October documents touched on this to some degree. One main comment received on this from industry and engineers was: the permittee has no authority to impose the monitoring plan or the implementation plan on anyone else, including other point and nonpoint sources.

Tammy Johnson stated she wanted to make sure she's understanding the crosswalk. She asked if DEQ was using the comments received on the October rule package as a means of communicating what various people said about it or as a means to modify the rule package.

Michael Suplee responded that DEQ is going to get new comments from the group moving forward, and what we have are things that pertained to these sections that we wanted to capture. The goal was to capture what was already said to be used however it will be useful. Once we have additional comments from the stakeholders, we'll be able to bring those new comments into the discussion.

Tammy Johnson stated she thinks she understands and said DEQ will receive more substantive comments on 4 and 5.

Michael Suplee added that the original purpose when we put the crosswalk together was to capture what had already been touched upon in existing documents in October that matched with the League's outline of topics. He also stated that it can all be modified based on ongoing feedback.

5b: Identify Funding Sources

Michael Suplee stated that various parts of the rule package touched on this to some degree. One comment that we captured was: the new rule requires demonstration of "the ability to fund and implement the plan" yet the permittee has no authority to implement anything beyond its discharge.

No comments were made.

5c: Prioritize Actions Based on Cost, Feasibility, and Degree of Expected Reduction

Michael Suplee stated that DEQ couldn't identify any previous documents before that addressed this; it's essentially a new topic. The one comment that was identified as linked to this was regarding the definition of adaptive management program from League and industry (stated above under 4).

No comments were made.

5d: Develop Schedule to Implement and Evaluate Success of Actions

Michael Suplee stated this was covered in parts of almost all the documents DEQ already put out including the framework rule. One comment was received from the League stating that the document contains no discussion of implementation expectations, schedules, or roles, so this is clearly something that needs to be fleshed out further.

No comments were made.

5e: Final Plan Submission to DEQ; How Plan is Implemented in MPDES Permit or TMDL

Michael Suplee stated this was addressed in most of the document DEQ already put out. One major comment received was that the AMP should be separate from MPDES permitting limits but used to inform permit limits similar to a TMDL.

No comments were made.

PUBLIC COMMENT

Time was taken at the end of the meeting for public comment. Vicki Watson, with the University of Montana Watershed Clinic, stated her comment is about whether or not the nutrient issue should be addressed in acute or chronic types of time periods. A very short term increase in nutrient levels is not a problem; it's more so the long term average of concentrations. The bad impacts that too much algae growth can produce can have acute impacts (like low DO). Would also point out if high nutrient levels occur briefly but fairly frequently, algae can stock up on nutrients and use them to grow on during lower nutrient conditions. Have to look at it that way – very short term but frequent excursion of nutrient conditions can contribute to problems.

CLOSE OF MEETING

The next meeting is scheduled for March 9 at 9 a.m. Moira Davin thanked everyone for taking extra time for today's meeting.

The meeting was ended at 11:20 a.m.

ATTACHMENT A: FEBRUARY 23, 2022 NUTRIENT WORK GROUP MEETING PRESENTATION SLIDES

Nutrient Work Group

February 23, 2022

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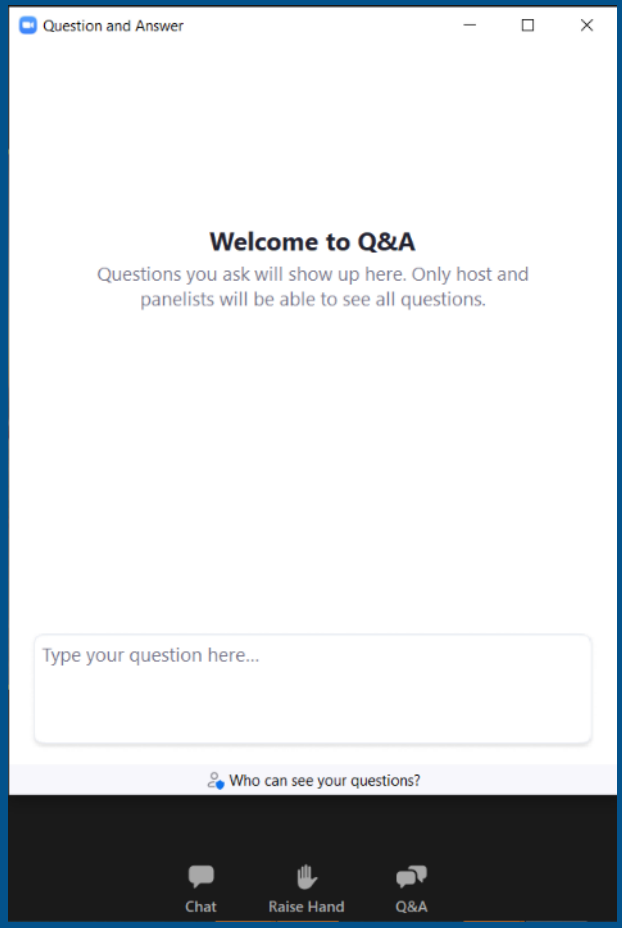
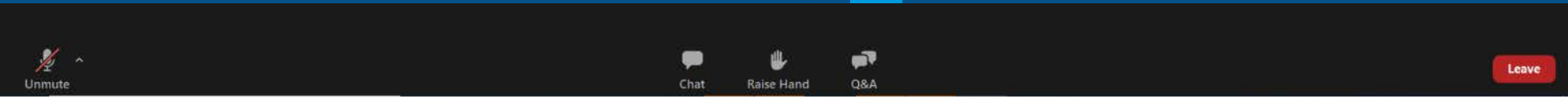
Welcome!

- This meeting has been converted to 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





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Agenda

Meeting Goal: Discussion of items 2d through 3 of discussion proposal document

Preliminaries

- Nutrient Work Group Roll Call
- Recap of February 9 Meeting

Discussion Document

- Items 2d-3 of Discussion Document
  - Proposed Solutions
  - Nutrient Work Group Dealbreakers
- Additional topics as time allows

Public Comment & Close of Meeting

- Public Comment

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Introductions

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	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	Vacant	
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	

Group Discussion

- We want to hear from all of you, this is your opportunity to speak into the process
- You are welcome to send us solution-oriented suggestions and we will share them with the team
- We will listen and review all input
- DEQ will take all of the information and make a decision based on science and law.
- DEQ will communicate the decision and reasoning to the group and we will move forward to the next decision point.

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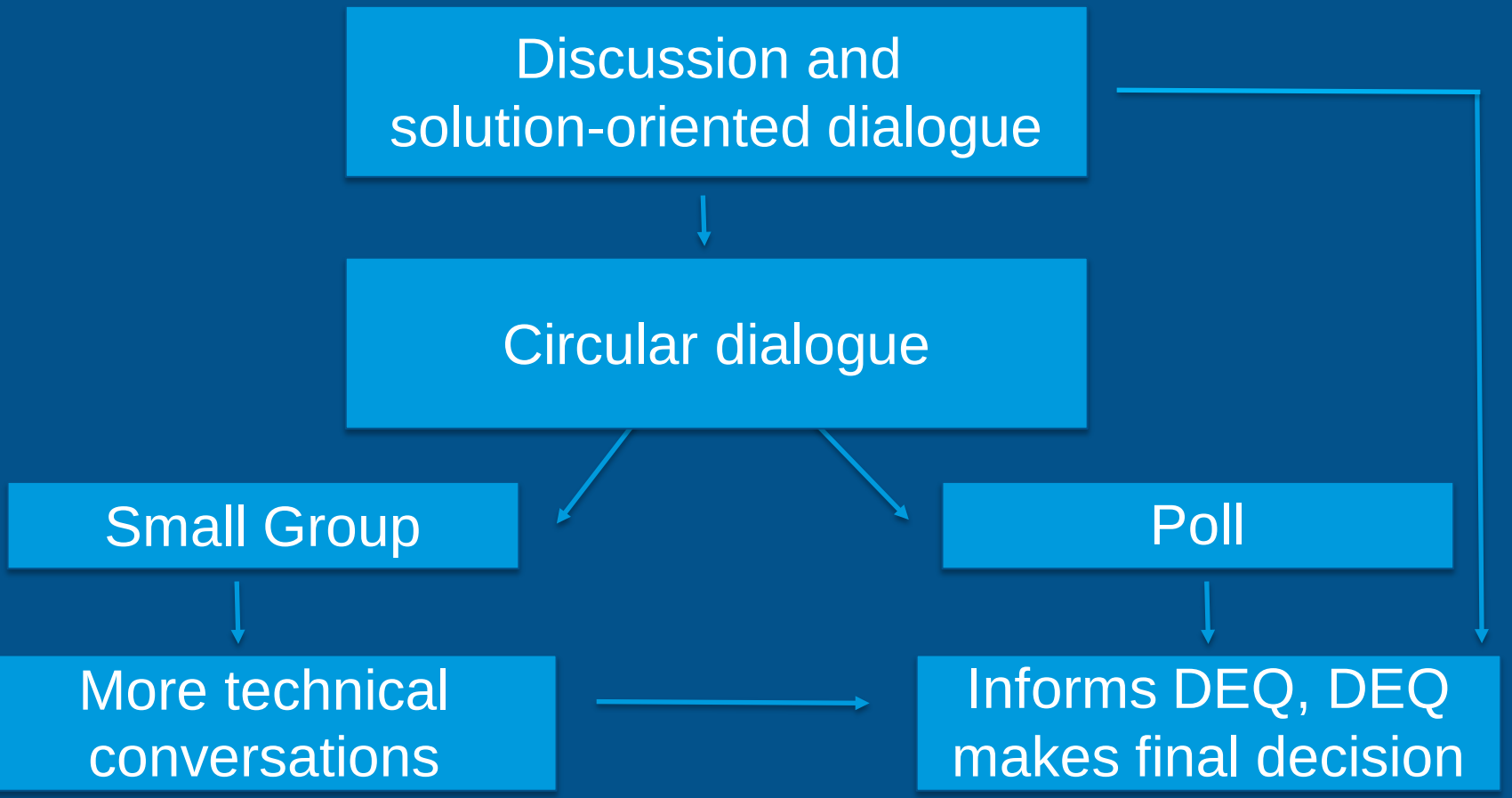
Decision-Making Tree

DEQ is the Final Decision Maker



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Recap

- Timeline
- Themes from check-in meetings
  - Appreciate the dialogue and transparency
  - Varying levels of understanding and concerns
  - Appreciate DEQ expertise and explanations
  - Hear from DEQ on non-starters, capacity and funding
  - Seeking to understand
  - Majority feels this is moving in the right direction
- Discussed 2a – 2c

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DISCUSSION DOCUMENT

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2A-3

Crosswalk Between League's Proposed Discussion Outline and (1) the Framework Rule and (2) the 10/18/2021 Department Documents (Rule, Circular DEQ-15, Guidance).

Subjects in blue were added to the League's proposal and are subjects that DEQ needs to include and address.

		Associated Section of Existing Documents				
League Topic	**Short Description**	**Framework Rule**	**10/18 Rule**	**Circular DEQ-15**	**Guidance**	**Associated Comment(s) on 10-18-2021 Drafts**
2) Development of an Adaptive Management Plan for an Individual Watershed						
2a	Identify permittee and stakeholder partners	not addressed	New Rule X (3)(a)(v) and (4)(a)(ii)	Section 8.2	Section 8.2	**Section** (3)(a)(v) "stakeholder engagement plan" should only be required if the permittee has to develop an AMP implementation plan. (LPD)
2b	Notification that an AMP is being developed	not addressed	New Rule X (3)(a)(v)	not addressed	not addressed	**Section** (3)(a)(v) "stakeholder engagement plan" should only be required if the permittee has to develop an AMP implementation plan. (LPD)
2c	Define who will lead the AMP process	not addressed	New Rule X (2)(a) and (b) and (4)(a)	Multiple Sections (permittee leads)	Multiple Sections (permittee leads)	**The** rule should be re-written to acknowledge voluntary permittee participation and to clarify that if AMP monitoring will become part of the MPDES permit, how and by what authority that will occur. (Industry)
2d	Review and prioritize beneficial uses of waterbody	Permittees may pursue a Use Attainability Analysis (UAA), if appropriate, per 75-5-302, MCA and ARM 17.30.602(39).				**Assessment** and beneficial uses should be confirmed before doing anything else as part of the AMP process. (Industry, League)
2e	Create a process to define relevant credible current data; compile data and assess it for currency and relevance	not addressed	not addressed	Not addressed directly; 8.1 touches on the subject.	not addressed	**A** process for assessing and/or validating previous assessments should be a starting point in the rule. (Industry, League)
2f	Establish a workplan including sampling locations, frequency, etc.	New Rule I (1)(a)(ii)	New Rule X (2) and (3) and (4)	Sections 4.0 and 8.0 (provides details)	Sections 3.6.1, 4.0, 8.0 (details)	**The** drafts provide no guidance for the development of an Adaptive Management Plan (League). **AMPs** developed on a watershed basis in Montana should serve as Category 5 Alternative Restoration Plan or TMDL for those watersheds (League). **Most** permittees are not, and should not be forced to become technical experts at the watershed level. Further, many permittees are not equipped scientifically and/or financially to take on such a task. (Industry).
***DEQ**: Watersheds including a lake or reservoir, and downstream effects*	Establish a watershed-scale workplan which includes consideration of a lake/reservoir being present; and downstream effects	not addressed	New Rule X (3)(a)(viii)	Section 4.4; Section 8.5	Section 4.4	**Please** explain the Department's proposed method and evaluation criteria for approving or denying a watershed monitoring plan, a request for an extension, and the schedule for this process. (LPD)
2g	Carry out sampling, anayze data in watershed, quantify each source's load	New Rule I (1)(a)(ii)(A) and (B)	New Rule X (2)(f), (3)(c)	Section 3.0; Section 4.0; Section 5.0, Section 6.0	Sections 3.6.3 through 3.6.8; Section 4.0; Section 5.0; Section 6.0	**Most** permittees are not, and should not be forced to become technical experts at the watershed level. Further, many permittees are not equipped scientifically and/or financially to take on such a task (Industry).
3) Create Conceptual Watershed Model	Conceptual watershed model which must be created using current relevant credible data	not addressed	not addressed	Section 3.3	Section 3.7	The document does not explain how permits would be developed, does not discuss watershed level modeling in any way, does not give any detail on conceptual water quality models... (League).
***DEQ**: Develop a Mechanistic Water Quality Model*	Mechanistic models for large complex watersheds with multiple dischargers	not addressed	not addressed	Section 3.0	Section 3.0	**A** model should not be required for all permittees on all large rivers (Industry). **Please** indicate what models can simulate algae as Department threshold parameters to sufficient accuracy to be accepted by the Department as a predictor of threshold compliance values (LPD).

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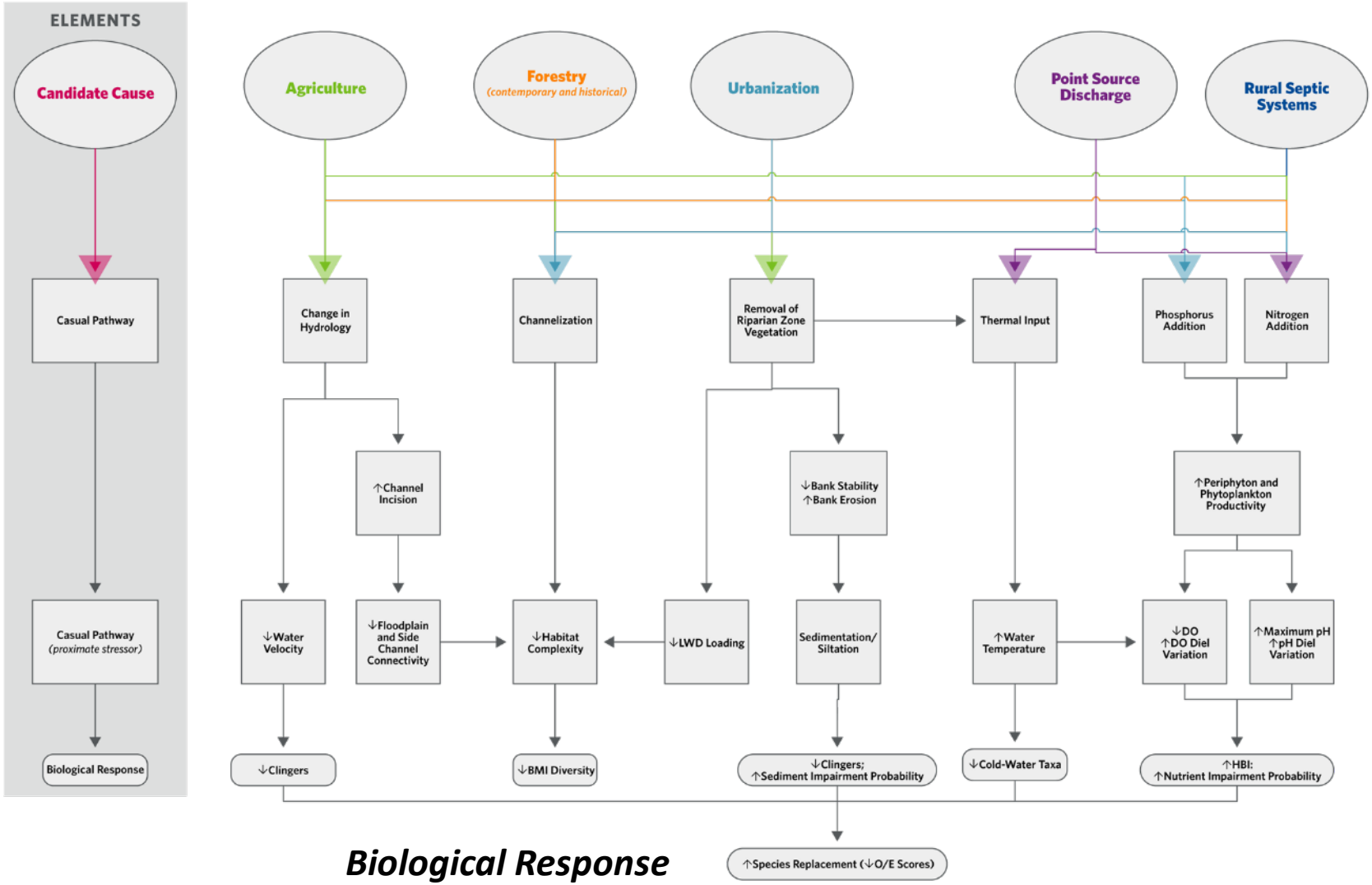
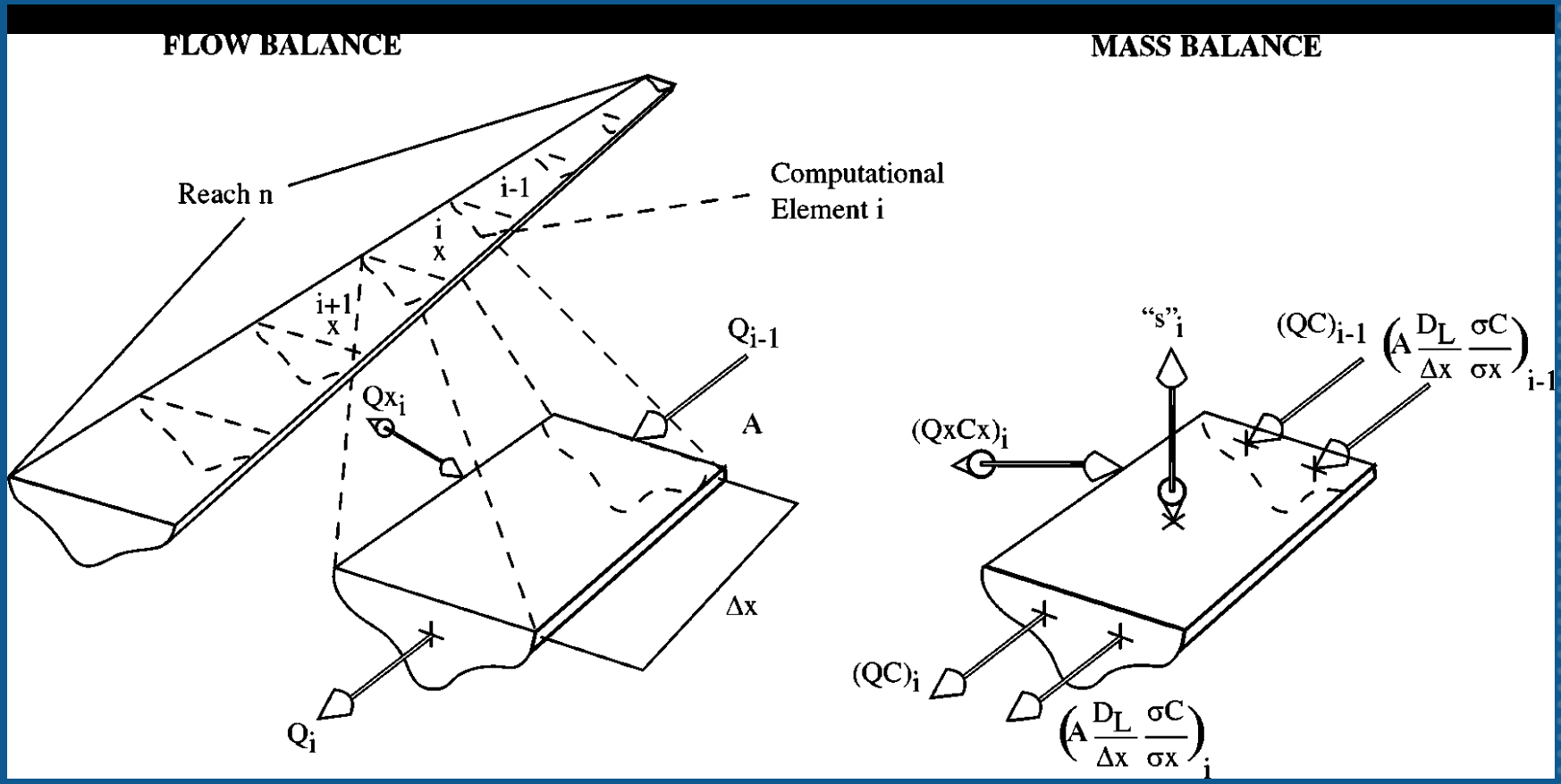
Conceptual Model



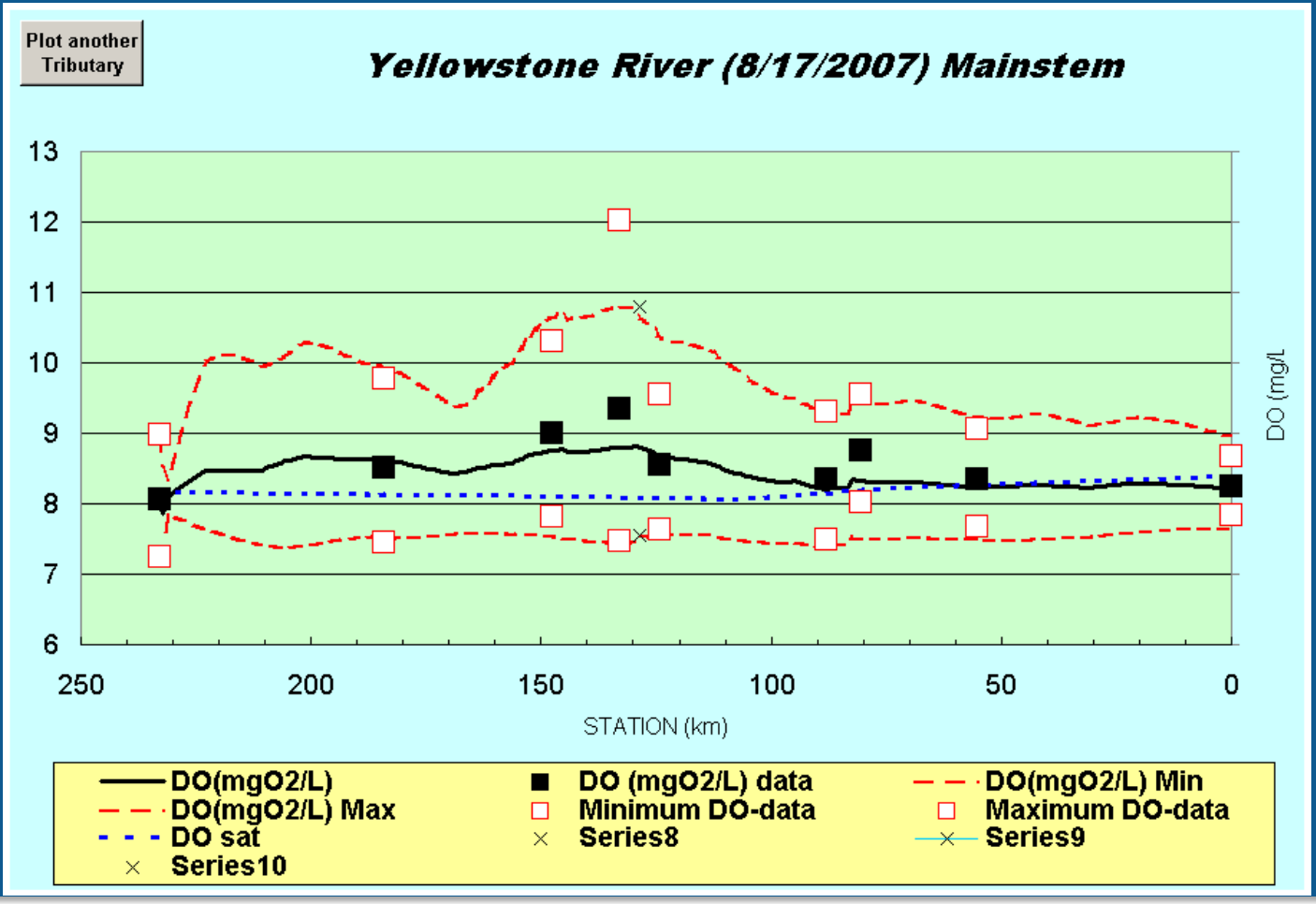
Biological Response

Mechanistic Model: QUAL2K



Mechanistic Model

Example of Modeled Dissolved Oxygen (Yellowstone River, Forsyth to Glendive)



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Ten Minute Break

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4-5

Crosswalk Between League's Proposed Discussion Outline and (1) the Framework Rule and (2) the 10/18/2021 Department Documents (Rule, Circular DEQ-15, Guidance).

Subjects in blue were added to the League's proposal and are subjects that DEQ needs to include and address.

		Associated Section of Existing Documents				
League Topic	**Short Description**	**Framework Rule**	**10/18 Rule**	**Circular DEQ-15**	**Guidance**	**Associated Comment(s) on 10-18-2021 Drafts**
4) Assessment of Treatment Options, Resulting Load Reductions, and Associated Cost	Each point source must provide information regarding current & potential treatment options, their potential load reductions, costs associated with different options, and feasibility	not addressed	New Rule X (4)(a)(i) and (iii) only address this indirectly.	Section 8.3.1	Sections 3.6.7 and 8.3.1.	**Adaptive** Management Program means (c) identifying and assigning treatment options to all discharger in the watershed, considering the relative cost of their feasibility, and the expected water quality improvement, in determining whether to enforce such options or create voluntary incentives and programs for administration by DEQ (League, Industry).
5) Identify and Prioritize Actions for Nutrient Reduction in the Watershed						
5a	Collaboration between permittees, stakeholders, & DEQ to identify actions/tools to reduce watershed nutrients. DEQ to allow permit compliance flexibilities for experimentation with new technologies.	New Rule I (1)(a)(ii)(B) and maybe New Rule I (1)(d)	New Rule X (4)(a)(ii)	Section 8.2, Section 8.3.2	not addressed	**The** permittee has no authority to impose the monitoring plan or the implementation plan on anyone else, including other point and nonpoint sources. (Industry, Eng)
5b	Identify funding sources	not addressed	New Rule X (4)(a)(iv)	Section 8.4	Section 8.4 (placeholder section)	**New** Rule X(4)(a)(iv) requires demonstration of "the ability to fund and implement the plan," yet the permittee has no authority to implement anything beyond its discharge.
5c	Prioritize actions based on cost, feasibility, and degree of expected nutrient reduction	not addressed	not addressed	not addressed	not addressed	**Adaptive** Management Program means (c) identifying and assigning treatment options to all discharger in the watershed, considering the relative cost of their feasibility, and the expected water quality improvement, in determining whether to enforce such options or create voluntary incentives and programs for administration by DEQ (League, Industry).
5d	Develop a schedule to implement actions and evaluate success of actions taken	Not addressed directly; New Rule I (1)(a)(ii)(B) is generally related	New Rule X (4)(a)(iii) and (v)	Section 4.5; Section 8.5	Section 4.5; Section 8.5; Appendix B	**The** document ...contains no discussion of implementation expectations, schedules, or roles. (League).
5e	Final plan submission to DEQ for review and approval; **how** plan is implemented in MPDES permit or TMDL	New Rule I (1)(b)	New Rule X (1) and (4)(b)	Section 1.0 Flowchart	not addressed	**The** AMP should be separate from the MPDES permitting process, but used to inform permit limits when appropriate, much like a TMDL. Keeping the AMP separate from the MPDES permitting process provides a path for watershed-specific science to be developed that can inform MPDES permits as appropriate, whil recognizing and respecting the legal limits of the MPDES permitting program. Foisting watershed-scale requirements onto the permittee exceeds the authority of MPDES program (Industry). **The** absence of a similar table for permitting and the lack of information that describes how the state will consider the pollutants (i.e., TN and TP) for any reasonable potential analysis fails to provide an adequate level of assurance that MDEQ will identify protective levels of both TN and TP for implementation in NPDES permitting decisions.

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PUBLIC COMMENT

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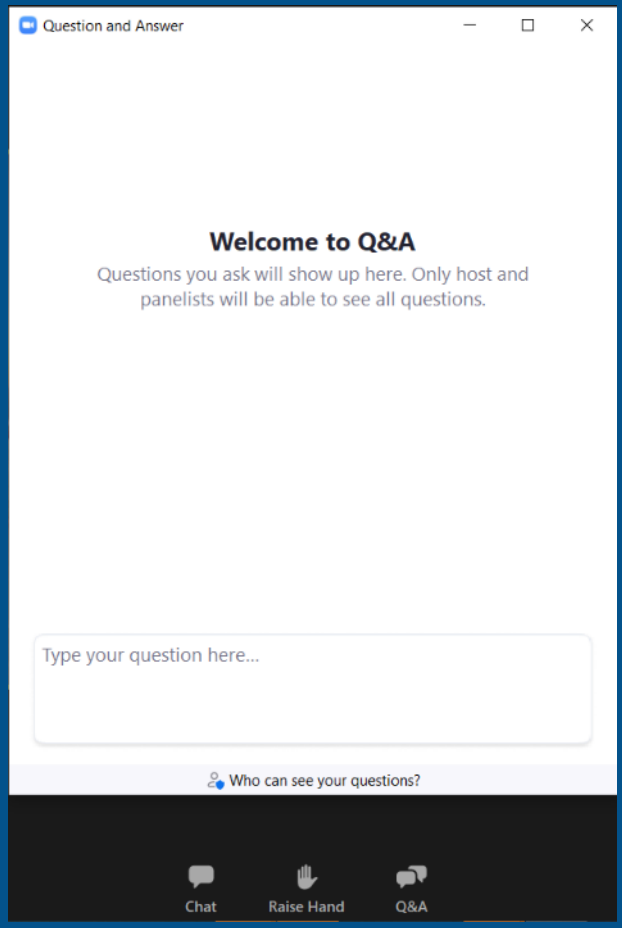
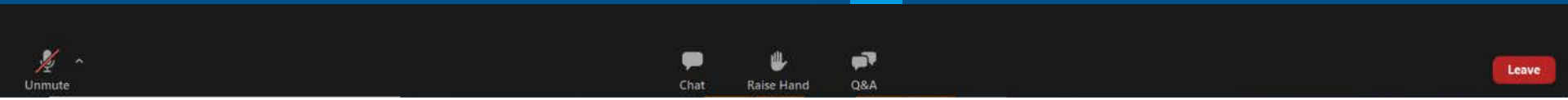
Questions/ Comments

- 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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Next Meeting

- Next Meeting:
  March 9, 2022 at 9 a.m.

Thanks for Joining Us

Contact:
Christina Staten
CStaten@mt.gov

To submit comments or questions

Submit Comments or Questions

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

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