DEQ Nutrient Work Group
SB367 Sub-Committee Meeting Summary
September 1, 2011

Welcome and Introductions

Gerald Mueller welcomed the meeting participants who then introduced themselves. The list of participants is included below in Appendix 1.

Agenda

- Update on State-EPA Discussions
- Process for Obtaining a Variance
- Level of Rigor Required for the Optimization Study
- Public Sector Individual Variance Process
- Update on the Statewide Demonstration of Substantial and Widespread Economic Impacts
- Variance Update Process for End-of-Pipe Treatment Levels
- Other Topics
- Next Steps

Update on State-EPA Discussions

Dr. Mike Suplee provided the update. Since DEQ Director Richard Opper testified before Congress in June, EPA has been more cooperative with DEQ concerning the general variance approach in SB367 which was passed by the 2011 legislature. SB367 authorized three types of variances from the base numeric nutrient standards: a general, statewide variance; individual variances; and alternative variances for permittees demonstrating that meeting the nutrient discharge limitations for the other two variance types would result in an insignificant reduction in instream nutrient loading. DEQ has made progress in providing EPA a demonstration showing that the public sector statewide would experience substantial and widespread economic impacts from complying with the base numeric nutrient standards. A similar demonstration for the private sector is more complicated and work is continuing on it. EPA does not accept the third variance type based on insignificant instream nutrient loading because, in the agency's view, it would not comply with the Clean Water Act.

Question - Would the process for a general variance be reduced to a performance request?
Answer - Yes, that is the objective.

Question - Could a variance request be made separately for phosphorus and nitrogen, i.e. a permittee could request a general variance for one and an individual variance for the other?
Answer - Yes.

Comment - Regardless of EPA's position, the alternative variance is provided in state law via SB367.
Response - Given EPA's position, DEQ may not move forward on the alternative variance, and we may advise permittee's not to pursue one. As an alternative, a permittee might try to demonstrate no reasonable potential for exceeding a water quality standard or Water Quality Based Effluent Limit (WQBEL).

Comment - When assessing the reasonable potential, permit writers apply conservative assumptions that may not be appropriate for a nutrient variance.
Response by Jenny Chambers - Permit writers tend to be conservative when they lack data to make the assessment. Permittees can provide more data.
Response - Permitting requirements are data rich; the burden of supplying the data is on the permit applicant.

Question - Do you have guidance regarding the "more data"?
Answer by Jenny Chambers - Permit writing requires a case-by-case consideration.

Question - Regarding the alternative variance, what is the definition of insignificant reduction in instream loading? Could it be a 1% or 10% change?
Answer by Jenny Chambers - We would look to the reasonable potential on a case-by-case basis.

Question - Has the state done a legal analysis in support of the alternative variance in SB367?
Answer - The state has not done a legal analysis that I am aware of.

Comment by Tina Laidlaw - EPA does not support the alternative variance because it does not connect to any of the Clean Water Act factors in section 131(10)(g).

Question - How would EPA's disagreement with the alternative variance be expressed?
Answer by Tina Laidlaw - EPA would take no action until the DEQ adopts a rule package. EPA indicated our concerns with this type of variance in its March 2011 letter to Richard Opper.

Question - Will DEQ develop a rule package to implement SB367?
Answer - Yes; we are working on it now.

Question - Are you starting with a blank sheet?
Answer - No, we are beginning with the statute and topics covered in the agenda for this meeting.

Process for Obtaining a Variance

Dr. Suplee and Jenny Chambers discussed the process that would be used to obtain a variance. The basic concept is that after adoption of the base numeric standards for total phosphorus and total nitrogen, DEQ would evaluate water quality data and information from the permittee in the permit renewal application after the permit expires to determine whether standard compliance would be prohibitive because of cost so that a general or individual variance would be appropriate. If the permittee request a mixing zone that would also be evaluated.

Question - Who would conduct the reasonable potential analysis?
Answer - The DEQ permit writer.

Question - What monitoring will be required?
Answer - Permittees are required to monitor for total phosphorus and total nitrogen for five years. DEQ will assess the monitoring data provided in the permit application completeness review.

Question - Will the permittee be required to provide information about what its treatment plant can do?
Answer - Not for a general variance. However, a condition of granting the general variance the permittee will be requiring completion of an optimization study.

Question - What information will be required for the general variance?
Answer - End of pipe effluent discharge levels.

Question - What will be required beyond the SB367 requirements?
Answer - To receive a variance, a permittee will have to show that the base numeric nutrient standards can not be met.

Question - What describes "can not be met"?
Answer - DEQ has not discussed this yet.

Level of Rigor Required for the Optimization Study

Dr. Suplee noted that Section 3 (9)(a) of SB367 reads:

> Permittees receiving an individual, general, or alternative nutrient standards variance shall evaluate current facility operations to optimize nutrient reduction with existing infrastructure and shall analyze cost-effective methods of reducing nutrient loading, including but not limited to nutrient trading without substantial investment in new infrastructure.

He asked the meeting participants for advice about the level of rigor required for the optimization study. Highlights of the discussion follow.

Comment - A key consideration is the "substantial investment" limit.

Comment - One way to define the substantial investment limit would be investments that would cause a rate increase by the public utility.

Question - One way to approach this would be to do the optimization study and the alternatives analysis to develop a plan that would achieve compliance with the numeric nutrient standards over a 20-year period in a manner acceptable to DEQ and the permittee. Would the analysis have to be done every five years when the permit must be renewed?
Answer - Requiring the analysis to be done every five years would be broader than the statutory framework. My first cut answer is that the optimization study need only be done once based on the existing plant infrastructure.

Question - Would the optimization study require consideration of changing plant controls or adding chemical?
Answer - The study would be based on the plant the permittee has today, but a 20-year target will be set that complies with the numeric nutrient standards. The variance levels may change in ensuing permit renewals if economics and/or technology changes.

Comment - Existing infrastructure should mean within the concrete structure of the existing plant.

Question - Can the permittee stay within the current treatment technology?
Answer - Yes; SB367 refers to the existing infrastructure.

Comment - Deference must be given to the permittee. The rule package cannot require specific action by the permittee.

Question - Do you have guidance for the optimization study?
Answer - We might look to the EPA Comprehensive Performance Evaluation which includes a review of plant management, design, and operation.

Comment - The optimization study might consider tweaks to plan operation in the context of the long-term plan. Adding chemicals may not achieve the long-term plan.
Response - The variance is designed to provide breathing room in the short-term to allow for achieving the long-term plan for standard compliance.

Question - Could DEQ provide an incentive to implement the optimization study such as moving a permittee to the top of a funding list?
Answer - I am not sure that we have the legal tools to provide an incentive.

Comment - Optimization should have a bright line. Optimization should be limited to simple operation and maintenance changes at the discretion of the municipality. Construction should not be considered.

Comment - The language of Section 3 (9)(a) refers to nutrient trading which implies a watershed approach. The cost to complete a watershed analysis as a part of the alternative analysis may be a concern for smaller permittees.
Response - The optimization study required following a variance is separate from the alternative analysis that is conducted for the long-term plan. The optimization study appears to require a cursory look at nutrient trading.

Question - Is the optimization study required before the issuance of a general variance?
Answer - No, it is conducted after a general variance is received.

Comment - Implementation of the optimization study should be left to the discretion of permittee. DEQ should also consider whether policy guidance or rules should be issued regarding the study.
Response - DEQ has the authority to require the study following issuance of a variance but not to require its implementation.

Question - Would the optimization study be a public document?
Answer - Yes it would be public unless it is submitted in the context of a court approved protective order.

Question - Should the study be conducted by a professional engineer or a third party?
Answer - Who and how the study is conducted is up to the permittee. DEQ does not have the authority to prescribe who conducts it or how it is conducted. The study must, however, be submitted by the permittee.

Committee Action - Those present at the meeting agreed that the optimization study should:

- ***Address only changes to plant operation and maintenance and not structural changes;***
- ***Not result in rate increases; and***
- ***Include a look at possible nutrient trading.***

Public Sector Individual Variance Process

Dr. Suplee and Dr. Jeff Blend reviewed the process for the individual variance for the public sector. This process was developed by the Nutrient Criteria Affordability Advisory Group (NCAAG) which preceded the Nutrient Work Group (NWG). The process includes three steps: an initial screening based on a community's median household income (MHI), the application of five secondary socio-economic criteria, and then consideration of a widespread economic impact test. In the initial screening, a Municipal Preliminary Screener (MPS) is applied to calculate the ratio of the total pollution control cost per household to median household income (MHI). Those communities with a MPS score greater than 2% would be eligible for a variance. Those with projects with MPS results in the 1-2% range are subject to the secondary criteria. Those with an MPS score less than 1% would be ineligible for a variance. The secondary criteria involve a community's poverty rate, income distribution, unemployment rates, MHI, and a measure of a community's current burden of local taxes and fees. The NCAAG recommended that the total pollution control costs per household for a public entity to meet the numeric nutrient standards be capped at 1% of MHI. However, EPA did not accept the 1% cost cap, responding instead with the following figure:

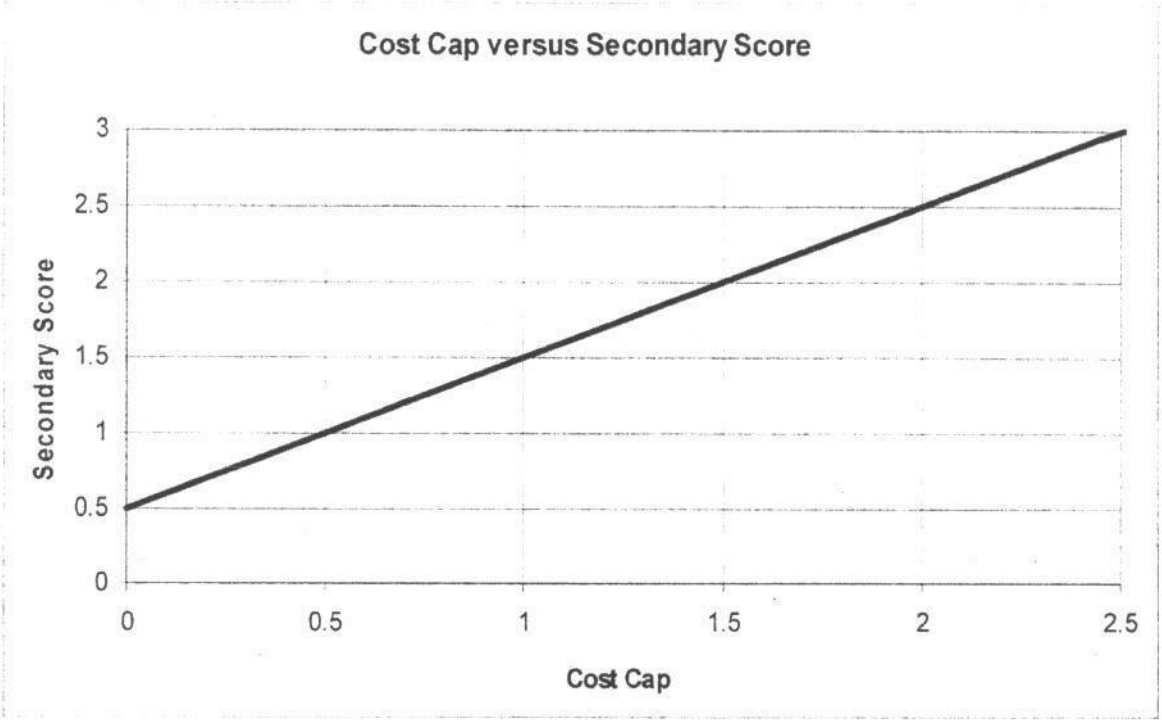

Figure 1. Graph for Deriving a Site-Specific Cost-Cap

Dr. Suplee asked if the process recommended by the NCAAG with the EPA cost cap would be acceptable for public entities.

Comment - The EPA cost cap is not acceptable.

Comment - Municipalities are frustrated by the EPA cost cap position.

Question - Has DEQ updated its analysis of the cost and benefits of the numeric nutrient standards?
Answer - No. Our analysis indicated that costs exceeded benefits. We are now looking at demonstrating that the costs statewide would represent significant and widespread economic impacts to support the SB367 general variance.

Question - Would communities below the EPA cost cap be expected to spend up to the limit on nutrient controls?
Answer - It depends. We are not asking communities to pay for technology changes. If a community is near the cap, then we would expect it to use existing technology. There would be flexibility around the cost cap if the next step in technology would take a town over the cost cap.

Question - How does the limits of technology in SB95 fit in?
Answer - SB367 has supplanted SB95, which was passed in 2009.

Question - What happened to the limits of technology under SB367?
Answer - Section 3 (2)(a) provides:

> The department in consultation with the NWG, shall develop guidelines for individual nutrient standards variances to ensure that the economic impacts from base numeric nutrient standards on public and private systems are equally and adequately addressed. In developing those guidelines, the department and the NWG shall consider economic impacts appropriate for application within Montana, acknowledging that advanced treatment technologies for removing nutrients will result in significant and widespread economic impacts.

Question - Could you cite examples of individual variances?
Answer - The individual variance will likely be relevant for private entities that cannot afford to pay for additional nutrient controls. DEQ's goal is to provide flexibility to work with individual private entities to match the public entity approach.

Committee Action - In response to a question by Dr. Suplee, the participants in this meeting agreed with the variance process for public entities, except for the EPA cost cap.

Update on the Statewide Demonstration of Substantial and Widespread Economic Impacts

Public Sector - Dr. Blend reported that DEQ is conducting two separate analyses to determine if publicly owned water treatment works (POTW) would suffer significant and widespread economic impacts from complying with the base numeric nutrient standards. First, DEQ is examining the cost of Level 5 treatment [per the interim Water Environment Research

Foundation (WERF) study] of total phosphorus and total nitrogen for a sample of 240 of the over 100 POTW affected plants in Montana. For all but two or three of the 24, compliance costs per household would exceed 2% of the MHI. The costs for the remaining three would be close to the 2% MHI level. The exceptions are larger towns with advanced treatment technology in place and with relatively low water treatment rates. Second, DEQ is applying the secondary criteria to the 24 plants. All 24 would hit the significant test level based on preliminary runs of the two 'Substantial' tests. DEQ is also making an argument for the widespread impact based on the state's low per capita income, the large increase in wastewater bills that would occur, and the large proportion of cases examined that show a significant impact.

Question - What is the Level 5 treatment?
Answer - Level 5 from the WERF Interim study is adding reverse osmosis to the end of the plant treatment process. Doing so is enormously expensive and is indicative of the technical difficulty involved with mechanical treatment to meet the base numeric nutrient standards.

Comment by Tina Laidlaw - EPA is comfortable with using reverse osmosis technology in the cost analysis, but it is not requiring its application.

Question - Does EPA expect a separate demonstration of significant and widespread economic impacts for each POTW?
Answer by Tina Laidlaw - If all plants in Montana show significant and widespread impacts, then all would receive a variance.

Question - Could DEQ present its public sector results at the next full NWG meeting?
Answer - Yes. We will focus on towns likely to be vulnerable and that may need individual variances.

Private Sector - Tina Laidlaw stated that EPA is aware of the difficulty in applying the significant and widespread test to private entities. EPA Headquarters has retained a contractor to analyze 70 private discharges by industry sectors. The contractor is compiling financial data for a subset of the private dischargers, ensuring adequate representation of various industrial sectors. Work will be completed for 11 of the dischargers in two weeks and the rest by the end of September, and we could present the consultant's work to the NWG in October.

Question - What economic data is the EPA contractor using?
Answer by Dr. Blend - The contractor is reviewing private entity revenue and profitability over a three year period. It is considering three tests: short-term liquidity, long-term liquidity, and ability to borrow. These tests are found in the 1995 EPA Guidance.

Question - Is the EPA contractor using national or Montana specific data?
Answer by Tina Laidlaw - The contractor is using parent company data, i.e., it is not Montana specific.

Comment - Large parent companies such as Exxon can afford compliance, but individual Montana plants may close.

Question - SB 367 includes a finding that complying with the base numeric nutrient standards would result in significant and widespread economic impacts. Why does EPA need to second guess the law?
Answer - EPA must ensure compliance with the Clean Water Act.

Question - Are there other states that have statewide variance processes?
Answer by Tina Laidlaw - I am not aware of any other statewide variances for nutrients. Variances are typically granted for individual facilities and the demonstration pertains to that individual plant. Colorado is taking a statewide approach for nutrients that uses technology-based effluent limits, but is not using a statewide variance. One state in Region 5 has a statewide variance for mercury.

Question - Is EPA working on a national variance for numeric nutrient standards?
Answer by Tina Laidlaw - I am not aware of any action on a national variance for nutrients.

Variance Update Process for End-of-Pipe Treatment Levels

Dr. Suplee stated that assuming the numeric nutrient standards and variance process are adopted into rules, that DEQ may face moving to more stringent end-of-pipe levels for variances in or after 2016. He then posed the following underlined questions to the meeting participants. Highlights of the discussion of each question follow.

Questions - The treatment levels are to be updated in accordance with "more cost-effective and efficient treatment technologies"; what does that mean to everyone? What would the process look like?

Question - If variance revision will occur five years from now, why address these questions now?
Answer - For the variance rules to be adopted, people will need to understand the process to determine if more stringent variance criteria should be imposed.

Comment - I can support more stringent criteria that would cost more to implement if water quality benefits would be clear.

Comment - Criteria should be reviewed on a watershed basis to ensure that a water quality benefit would occur in the watershed.
Response - The Clark Fork watershed is an example in which nutrient control actions have been beneficial. In 1989, communities in the basin banned phosphate. In 1998, major point source dischargers agreed to the Voluntary Nutrient Reduction Plan (VNRP). In 2004, Missoula upgraded its sewage treatment pant to meet the 1 milligram per liter of total phosphorus and 10 milligrams per liter of total nitrogen per the VNRP agreement. As a result of the actions in the basin, the watershed below Missoula is now meeting the base numeric nutrient standards as well as the algae standard.

Comment - The area above Missoula is not meeting the standards, so on a watershed basis ratcheting down the criteria would not be appropriate.

Question - How does SB367apply to permittees in the Clark Fork basin now?
Answer - SB367 applies now. Permittees in the basin can apply for variances.

Question - Could new dischargers apply for a variance?
Answer - New discharges would be subject to a non-degradation review. They could not apply for variances.

Comment - Ratcheting down effluent levels for POTWs is not appropriate so long as non-point sources remain uncontrolled. Focusing only on the water treatment plants may not result in significant water quality improvement.
Response - Controlling point sources is improving water quality in basins such as the Yellowstone. Non-point sources are being addressed through the TMDL program.

Comment - I do not see much change by 2016 for POTWs. A breakthrough in treatment cost and efficiency is not likely.

Comment - The review process should consider whether any TMDL or nonpoint source Best Management Practices (BMPs) implementation actions occurred.

Comment - The effluent criteria are now based on total phosphorus and total nitrogen. The 2016 review should consider speciation and bioavailability.
Response - We could consider speciation and bioavailability. We also will be able to consider soluble fractions in the standards per our models.

Comment - For small plants, new technology applications would increase costs by quantum steps.

Comment by Tina Laidlaw - The variance process including a 2016 review needs to target effluent limits that are economically feasible. EPA will consider whether the proposed limits are economically feasible in reviewing the variance rules.

Question - Will EPA conduct a separate ratcheting analysis?
Answer by Tina Laidlaw - Yes.

Comment - The substantial and widespread economic impact analysis should be updated.

Committee Action - The participants in this meeting agreed with the following "check boxes" categories or actions for the 2016 criteria review:
- ***Have treatment plant technology and cost improved?***
- ***Have TMDLs been adopted and implemented or non-point source BMPs been applied in the watershed?***
- ***The substantial and widespread economic impact analysis should be updated;***
- ***A review should be conducted to determine if nutrient standards should be revised due to speciation and bio-availability;***
- ***Have implementation steps for the existing criteria been taken?***

Question - Can the variance categories be updated independently?
Question by Gerald Mueller - Is there a reason not to support an independent update?

Comment - I see an equity issue with treating the three POTW flow categories separately.

Comment - The categories in SB367 were created for political reasons. Municipalities will continue to support them.

Comment - Planning for reverse osmosis or limits of technology plants is not practical.

Other Issues

Question - Is there anything that we could review prior to the next NWG meeting that captures the conversation between DEQ and EPA concerning the variances?
Answer by Dr. Suplee and Tina Laidlaw - No.

Question - What is the DEQ thinking about the schedule for rule making?
Answer by Dr. Suplee - We are behind by some months, but we have not decided to defer the schedule. We will revisit the schedule at the next NWG meeting on September 29.

Next Steps

Mr. Mueller stated that the summary of this meeting will be sent out to the NWG email list. The September 29, 2011 NWG agenda will include a report by Dr. Suplee about this sub-committee's deliberations and review of the substantial and widespread analysis for the general variance for the public sector.

Appendix 1
SB367 Sub-Committee Attendance List
September 1, 2011

Dick Hoehne	Town of Philipsburg
Don Allen	Western Environmental Trade Association (WETA)
Dave Aune	Great West Engineering
David Mumford	City of Billings Michael Perrodin BNSF Railway
John Rundquist	City of Helena Burton
Judel Buls	AE2S, Inc.
Susie Turner	City of Kalispell Public Works
Amanda McInnis	HDR
Dave Wann	HDR
Craig Caprara	HDR
Joe Kolman	Legislature Services Division
Dave Galt	Montana Petroleum Association
Doug Parker	Hydrometrics
Michael Perrodin	BNSF Railway
Jessie Luther	Browning, Kaleczyc, Berry, and Hoven
Bill Mercer	Holland & Hart
Tina Laidlaw	US Environmental Protection Agency
Debbie Shea	Montana Mining Association
Dave Clark	HDR
Mark Simonich	Helena Association of Realtors

DEQ

Jenny Chambers	Water Protection Bureau Chief
Paul Skubinna	Water Protection Bureau
Dr. Jeff Blend	Energy Planning & Technical Assistance, Economist
Dr. Mike Suplee	Water Quality Standards Section, Water Quality Specialist
Bob Bukantis	Water Quality Planning, Water Quality Standards Section Supervisor
Todd Teegarden	Technical and Financial Assistance (TFA) Bureau Chief
Paul LaVigne	Technical and Financial Assistance Bureau, Water Pollution Control Revolving Fund, Section Supervisor
Gerald Mueller	NWG Facilitator