

Barr Lake/Milton Reservoir Watershed Association
 BMW Board Meeting
 November 27th, 2018 9:30 am – 3:00 pm
 Barr Lake State Park Nature Center

Minutes

Board Attendance:

Dan Delaughter – SPWR Partners
 Curt Bauer - FRICO
 Michelle Seubert – CPW
 James Boswell – Thornton
 Laurie Rink – FRICO
 Sam McKinney – Intern
 Steve Lundt – Metro
 Donny Roush - Denver

Julie Tinetti – Centennial
 Chris Douglass - ECCV

Public Attendance:

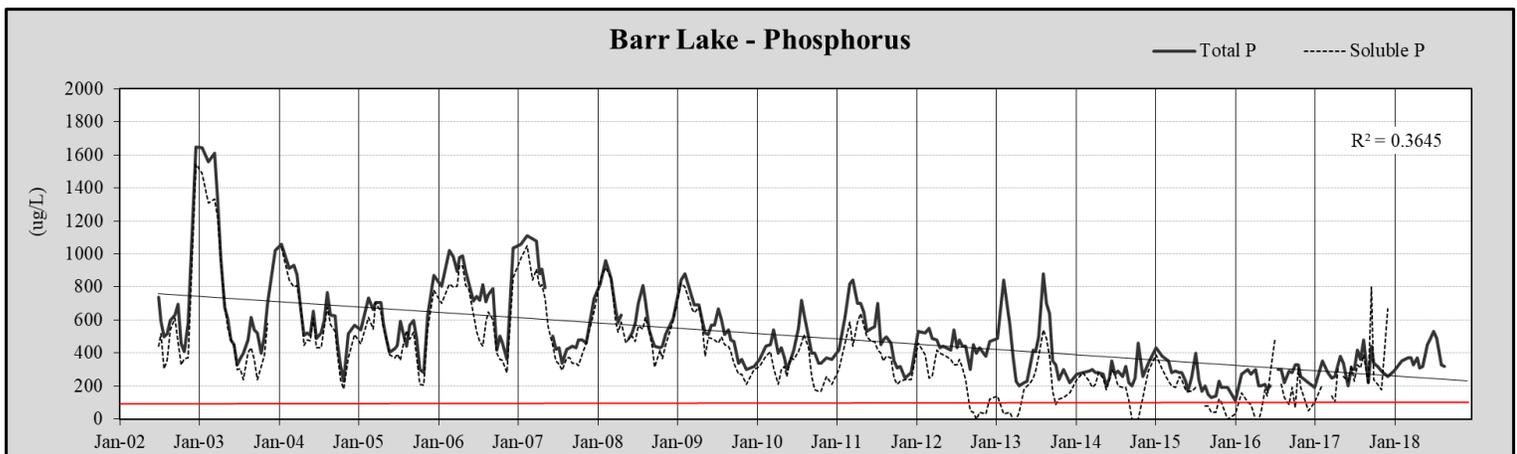
Christine Jochim – BHFS (phone)
 Ken Wagner (phone)
 Marcia Greenblat (phone)
 Amy Conklin – BMW Coordinator

Dan welcomed the group and everyone introduced themselves, while enjoying delicious breakfast foods.

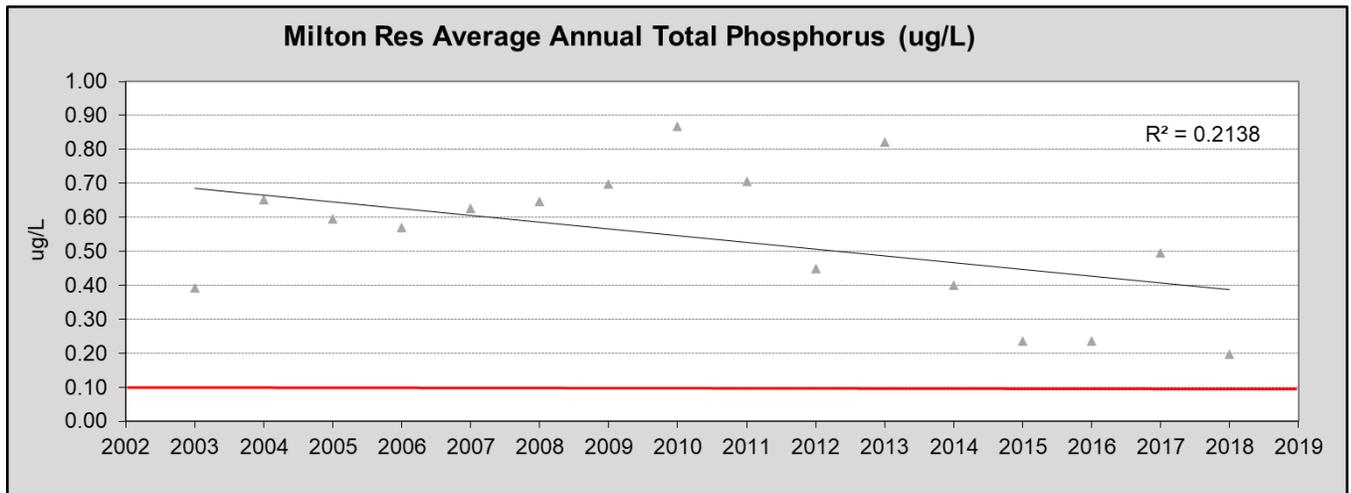
Budget Review - Chris presented a summary of all the organizations expenses and revenues, highlighting special assessment. The Board discussed that it may be necessary to increase dues moving forward. There may also be special assessments to fund the organization’s activities to implement the TMDL. Part of the funding goals are to build up reserves to help fund expensive future efforts. Part of the concern to members is what the value of BMW membership is. Amy and Chris are working on invoices currently. Denver Water is a new member we’re approaching. Invoices will be sent out in December with the first ever BMW calendar.

Samantha McKinney presented the first place winning trash collecting machine she and her team built for the Greenway Foundation competition. The design is getting built to full scale and installed in 2021. One obstacle is maintenance; removing trash regularly.

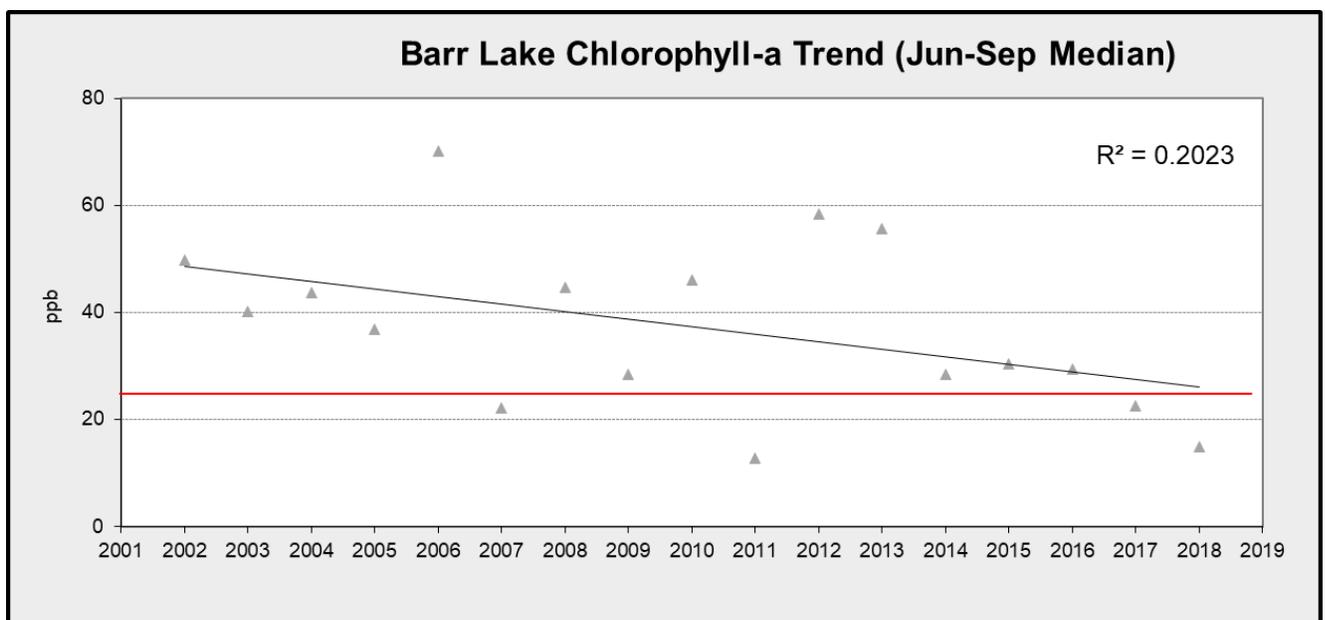
Modeling and OCCT Update – Ken Wagner presented the information he’s been working on as part of the BMW modeling update effort, **attached**. Ken has been reviewing the pie charts of where the P loading comes from into Barr and Milton. The TMDL states that Phosphorus (P)



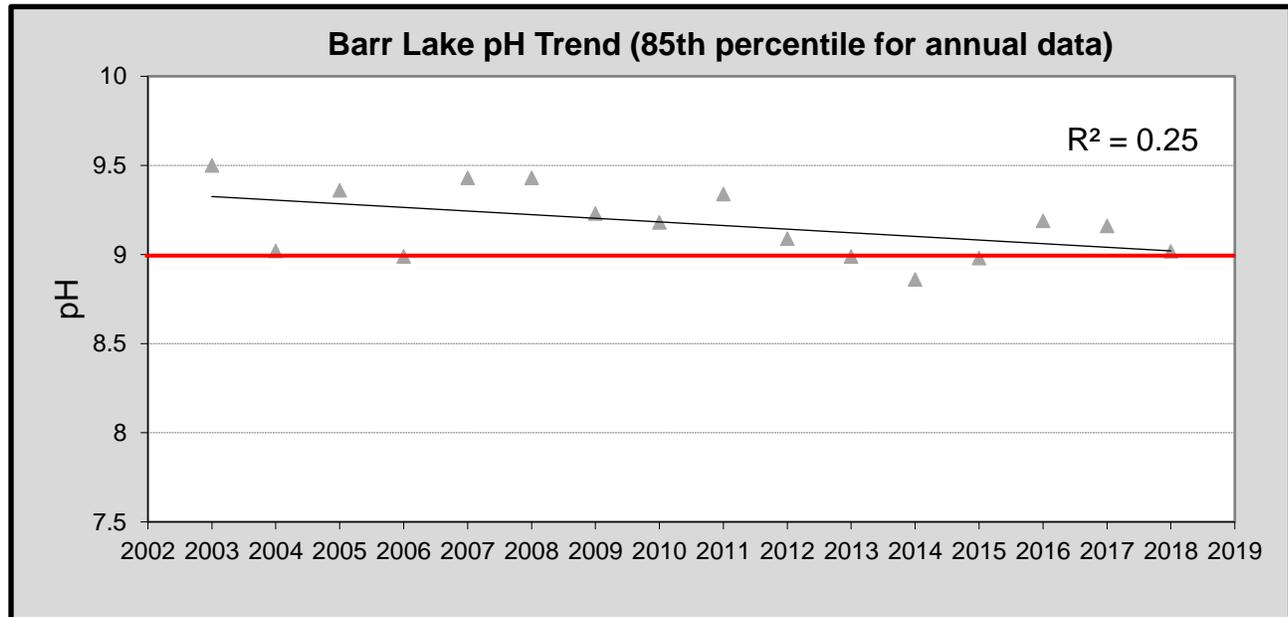
loading must be reduced from the current approximately 70,000 kg/yr to 6,000 kg/yr. He presented a graph of P loading over time that shows a trend of loading decreasing. There is some variability of loads due to storms. Part of the reduction is from Metro's Northern Treatment Plant going online. Loads to Milton are more variable. The red line on the graph is the target concentration for P. Load reductions are not yet enough to meet the targets, but progress is being made.



Ken next looked at Chlorophyll a (Chlor a) concentrations over time. In Barr Lake, the data show a steady improvement with the standard being met for the last few years. Chlor a data for Milton didn't show the same pattern. The types of algae in the lakes are changing, just like in Cherry Creek Reservoir where the green algae are becoming more dominant over the blue-green. The total Chlor a concentration hasn't been much reduced, but the types of algae are changing.



Ken analyzed pH data next. In Barr Lake, the pH target has almost been reached in the lakes. Progress is being made but slowly.



The Wastewater Treatment Plants (WWTPs) are still the dominant source of loading. Even though loads from WWTPs have been significantly reduced, more reductions are still needed. As the WWTPs decrease their loads, the smaller sources of loading will become increasingly important.

Metro is currently discharging at less than 1,000 ug/L of P. The P goal in the lake is 100 ug/L. Laurie cautioned that the Burlington pumps may come back online in the future and that should be included in the scope for future modeling and analyses. South Platte Water Renewal Partners are currently discharging at 3,000 ug/L and will bring P concentrations in their effluent below 1,000 ug/L by 2023 to comply with Regulation 85. Centennial will also be implementing increased P removal by 2021. When effluent P removal is complete, there should be large reductions in P loading to the reservoirs. Ken cautioned that lowering the Nitrogen (N) concentrations may favor the growth of blue-green algae but the impact shouldn't be great. The N:P ratio is still favorable for green algae.

Marcia Greenblat, Integral, reported that she is working on 2 modeling tests; an update to the watershed and in lake models using 2011-2017 data to make sure the models are performing as expected; and some modeling for Optimal Corrosion Control Treatment (OCCT) scenarios. She is finalizing her summary memo and it will be available soon. She is not yet looking at any management scenarios for BMW. The model compares well with the data. No recalibration was necessary; the model is performing as expected.

Integral is working with Denver Water to get the most accurate possible Lawn Irrigation Return Flow (LIRF) estimates. Modeling scenarios will then be run assuming Ortho Phosphate (PO₄) additions from between 0.5 to 4 mg/L. So far, the modeling has shown a relatively small loads from LIRFs so the lake response should not be large. However, the LIRF estimates still need

some refining and there has been no estimate of groundwater loading. Marcia may need to consider a mass balance of P in the watershed. One component is to identify where the additional P from OCCT will go. Some will be removed at the WWTPs, some will infiltrate into the groundwater and some will runoff. All of the calculations are ongoing.

The OCCT stakeholders are very interested in the modeling effort. It is important that they are well informed about what the model limitations are. Currently the BMW model doesn't include all the areas where DW sells water. It doesn't include a groundwater calculation and there are questions about how the P migrates through the soil. The OCCT modeling effort also doesn't include Milton Reservoir. If so much decision making is riding on the results of the modeling and a key component is the LIRF calculations, then the BMW Board concluded that hiring a third party to review the estimates is warranted. **Chris Douglass** volunteered to contact Kelly DiNatale to determine his availability for the LIRF flow estimate. **Dan** was encouraged to talk to the other OCCT Stakeholders about participating in the funding of the third party analysis. Chris was encouraged to try to get a scope of work from Kelly for Dan to take to the December 14th Stakeholder meeting. Chris will also ask Kelly about anyone he is familiar with who could work on an estimate of how the OCCT P might migrate through the soil and groundwater. Chris made a motion to approve Kelly DiNatale's Scope of Work when it's ready. Dan seconded. There was a unanimous Thumbs Up approval.

Marcia hopes to get her model update memo out by the end of the week. Steve, Ken and Marcia will get together to go over results of the analyses before the December 14th OCCT Stakeholder meeting. Steve will be presenting a high level overview of the BMW models to the OCCT Stakeholders on November 28th. He was encouraged to clearly describe the limitations of the BMW models, including that modeling is not being done on the impacts to Milton Reservoir and the S. Platte River as part of the BMW modeling effort. Steve is working on a map of DW's service area and all the water that would be impacted by OCCT.

Christine Jochim updated the Board on the OCCT litigation. Her interpretation of the ongoing stakeholder process is that the only thing that would trigger additional litigation or renewing litigation issues is if WQCD changes what they are doing. Litigation may resume if DW requests a modification and it is denied. Each of the litigants has a different perspective and has to perform their own reviews. Wastewater Treatment Plants have different concerns than watershed group or municipalities. It is hard to estimate costs at this point. It is important to remain nimble and ready to respond on short notice. BMW was encouraged to talk to Jeff Shoemaker with The Greenway Foundation about any concerns with watershed interests being represented in the Leadership meetings.

The Board discussed the likelihood of success in continuing to challenge the WQCD ruling when the Lead and Copper Rule is so specific. The WQCD may have a lot more flexibility in considering secondary impacts than they have recognized. There aren't clear guidelines in the regulations about how exactly the process should work. Because of the lack of clarity, there may be sound legal bases for moving forward with litigation.

The question was asked about the option being considered of using pH adjustment and Point of Use (POU) filtration in combination with lead line removal. In Madison, WI, POU filtration was

used while lead service lines were being removed to protect people who were waiting their turn to have their lines replaced. The experience in Madison was not a particularly good one and would be impractical for DW. The experience is a good reminder that public health is the driver for the issue of OCCT. What the experience in Madison does shed light on is the process of requesting a waiver from EPA. In their case, Madison proceeded with installing filters and removing lead service lines without a waiver from EPA. EPA chose not to interfere.

Installing POU filters poses challenges because it is difficult to get into people's houses to install them. In addition, the mechanism by which the filters remove lead is not understood. Their efficacy has been proven, just not understood. It is unlikely EPA would grant a waiver to pursue POU filter installation as part of OCCT. Even if they might, there is not enough time to work through the process to meet the March 2020 deadline. The WQCD is very skeptical that EPA would approve such an approach.

The BMW Board discussed if there is an additional P load they would be comfortable with. Since there is no margin of safety in the TMDL; there is no 'extra' P load to designate for DW or anyone else. It is critical to identify the parties who are responsible for additional loads whether its DW and OCCT or new dischargers to Segment 14. The rate payers are going to pay for P removal. The question is by what process will the additional funds be obtained.

DW has estimated there are 57,000 lead lines that need to be removed. If they were removed during the next 10 years, it would cost approximately \$12 million per year. Within six months, we should know how DW is planning to proceed. Christine believes DW wants to develop a solution that works for everyone. A lot will depend on what the science reflects. The WQCD should be considering secondary impacts when selecting optimal treatment. So far the science is showing that a PO₄ concentration of 2 mg/L will be effective but maybe not 1 mg/L.

Metro is confident that they can meet the standards in Regulation 85. They also want to focus and lead line removal and find an OCCT that doesn't use phosphorus. However, it is very likely that PO₄, at some concentration, will be in the final OCCT decision. BMW should continue to be engaged and assist with the stakeholder process and also be practical. If OCCT is going to lead to a new source of P, what is the best way to handle that reality? One approach could be to open the TMDL. Another approach could be to try to address loading from outside sources in the Implementation Plan (IP). The levels in the TMDL are unlikely to change. What should BMW's approach be if loads to the lakes start increasing, after years of decline? **Amy** was instructed to continue to keep the topic on future Board agendas.

Lunch/Party for Laurie and Board photo -
The Board took a break to: enjoy a delicious lunch; celebrate Laurie Rink's



service with a cake and stories; visit the construction site of the new fishing dock; and take a Board photo.

White Paper Next Steps w/ CDPHE & EPA – A long time ago, in a galaxy far, far away (eleven years ago), Steve Lundt attended a presentation given by Jim Saunders with the WQCD to the Chatfield Basin Water Quality Authority. The presentation was on a Concentration Translator (translator) for P into Chlor a; a way to calculate the Chlor a concentration given a P concentration and vice versa. Steve took Jim Saunder’s analysis and applied it to Barr and Milton data. What he found is that the targets for Barr Lake are what we would expect. To reach a Chlor a value of 25 ug/L, TP can be 134 ug/L. To reach a Chlor of 20 ug/L, TP can be 107 ug/L. There is some discussion, and maybe negotiation, that needs to occur about exceedance frequency, median values versus average, and maximum values, but the Chlor a and TP values are very close to what’s in the TMDL and what we would expect. The same is not true for Milton.

In Milton reservoir, Steve found that to attain a 25 ug/L Chlor value, TP could be 282 ug/L. To attain a 20 ug/L value, TP could be 226 ug/L. **Steve** was asked to do a similar analysis for pH. These results were interesting and agreed that they could be of use to the Association in the future if site specific standards for the lakes are considered. The current target for TP for Milton in the TMDL is 100 ug/L. The proposed Chlor a values in Regulation 31 should be attainable but the TP values may be worth participating in the Regulation 31 hearing process.

Steve’s presentation spurred conversation on one of the recurring regulatory questions -- whether the targets in the TMDL trump whatever standards result from Regulation 31 or not. Further, with the adoption of chl a standards in 2022, could Barr and Milton land on the 303d list for impaired waterbodies for chl a or does the TMDL provide a layer of protection since it includes chl a goals? The Board concluded that the best way to proceed is to try to engage the WQCD in answering these questions. It was suggested that **Dan** talk to Aimee Konowal about coming to the March BMW Board meeting where we could discuss these questions and others with her. We could prepare a summary for her, and other WQCD staff, to review in advance. It was acknowledged that WQCD staff will be consumed with the OCCT process until it is resolved. It is hoped that by March 2019, Aimee and some of the other staff may have time to engage with BMW. Since the regulations are not clear, one key question is to ask how a request for site specific standards might proceed.

Quick review of BMW Policies and By -laws, specifically the Document Retention and Destruction Policy and tax return – The Board approved all changes to the Document Retention and Destruction Policy and approved submitting the 2018 tax return with a unanimous Thumbs Up vote.

Communicating BMW Data Brainstorm – In lieu of time constraints, it was concluded that this item could be put on calendar for future Board discussion.

2019 Meeting Calendar Discussion – The BMW Board discussed how to approach the workload for 2019. OCCT will remain as a standing agenda item until March and will be incorporated into the External Inputs component of the White Papers. There will be ongoing Committee Reports

and updates on stormwater monitoring every month. Topics for each of the months are summarized below:

- January 22, 2019– Video tape **James and Chris**
 - Report on OCCT modeling
 - Report from third party expert
- February 26, 2019 – Stakeholder meeting. Video tape **Roy Wardell and Derek Sowell. Meet at SPWRP, video tape Dan.**
 - School of Mines presentation on stormwater monitoring near Berkeley Lake in northwest Denver.
 - Jon Novick to present his stormwater data.
- March 26, 2019 – video tape **Sarah Reeves**
 - Invite WQCD staff, Aimee Konowal and Joni Nuttle, among others. Discuss concentration translator. Provide summary in advance.
- April 23, 2019 – video tape a **South Adams County Representative**
 - Invite DW to present their loading calculations and mitigation plan
 - Invite Meg Parish, CDPHE, to help in presenting TP mitigation plan
- May 28, 2019 – **meet at ECCV**, video tape **Chris Douglass and United Water Representative (Kelly or Drew)**
 - Presentation on ECCV about the DW aquifer
- June 25, 2019 – **meet at Barr Lake**, take tour around the lake, stopping along the way for;
 - Water quality presentations
 - Presentations on where in canal treatment might be installed
 - Other improvements at the lake (yay! Michelle)
 - See eagles.
- July 23, 2019 – Metro presentation on their P recovery process
- August 27, 2019 – **meet at Daniels Fund**
 - Centennial presentation on improvements to comply with Regulation 85
 - Preparation for Annual meeting and BBQ
- September 24, 2019 – **meet at Barr Lake, try to engage more stakeholders**
- October 22, 2019 – Prepare for Annual Retreat and use as place holder for things that don't follow the schedule.

The meeting was adjourned at 3:00 pm