Barr Lake/Milton Reservoir Watershed Association
BMW Board Meeting
August 27th, 2019 9:00 am – Noon
Metro Wastewater

Minutes

Board Attendance:
Curt Bauers – FRICO
Steve Lundt – Metro
Donny Roush – Denver PW
James Boswell – Thornton
Dominic Baca – BMW Intern
Ashley Rust – United (phone)
Julie Tinetti – Centennial
Katie Koplitz – Metro
Jon Novick – DDPHE
Allison Bohlman – SPWRP (phone)
Lauren Barclay – BMW Intern (phone)
Sarah Reeves – SPCURE
Brad Cox – DPW
Michelle Seubert - CPW

Public Attendance:
Amy Conklin – BMW Coordinator

Steve welcomed the group and everyone introduced themselves, while enjoying delicious burritos.

BMW providing input to Denver's Municipal Separate Storm Sewer System (MS4) permit –Amy, Steve and Dan have been attending meetings with Denver staff regarding their MS4 permit. Steve re-iterated the BMW position that BMW needs to implement the TMDL and we are committed to working collaboratively with Denver. The TMDL requires that stormwater loads from all MS4 permit holders are reduced by 20%. A 20% reduction is about 1,000 pounds, a significant amount given that over 90% of the loading needs to be reduced.

Brad stated that Denver believes there has been and will continue to be significant reductions in stormwater loading and wants to keep working with BMW to measure the progress being made. One of Denver's concerns is that they are likely to be audited by EPA and want to make sure that they can fulfill their permit requirements. The group remarked that the OCCT decision could dramatically increase stormwater loads. Denver's participation in BMW has waned in recent years but they have remained active with BMW with Information and Education(I&E) activities and in other areas.

Brad went through the different components of their permit. There is new language regarding Public Education and Outreach/Public Involvement (I&E) requirements that is more consistent with Regulation 85. The requirement for the percentage of stormdrains that need to be marked has increased to 95% in some parts of Denver. The stormdrain marking program is an area where Denver and BMW work together.

The Illicit Discharge Detection and Elimination (IDDE) section has more specific language with groundwater discharges being incorporated into the MS4 permit. In previous permits, groundwater discharges had been allowed non-MS4 discharges. Denver is now being required to verify that the discharges are meeting water quality standards. Denver is being required to sample all 1,400 outfalls.

The Construction inspection program is also changing. The new permit is trying to incorporate the statewide, general permit into Denver's Phase 1 MS4 permit creating a lot of confusion. There is a compressed timeline for inspections and additional inspections required if there are any compliance issues. Denver Public Works would need to triple their inspection staff to comply with the requirements as proposed. The industrial facility program is being expanded to require more inspections as well.

The post-construction or permanent/long term stormwater control measures section is being changed to add more prescriptive language for BMP design standards. The new permit will require additional interaction with BMP owners to ensure that the BMPs are working. With as many as 1,300 BMWPs this is a huge effort.

There are some additional internal housekeeping procedures that will need to change including adding secondary containment to all outside liquid containers. The compliance schedule for the proposed permit is 12 to 24 months. Denver surrounds several non-standard MS4 permit holders such as Coors Field and Mile Hi Stadium. As part of the permit process Denver is developing MOUs and IGAs that will better define the stormwater responsibilities for the MS4 permit holders.

One of Denver's objections to the proposed BMW comments is BMW's support for a Phosphorus Control Plan. Denver wants to work with BMW on the next stage of the implementation and not spend a lot of resources developing a monitoring plan.

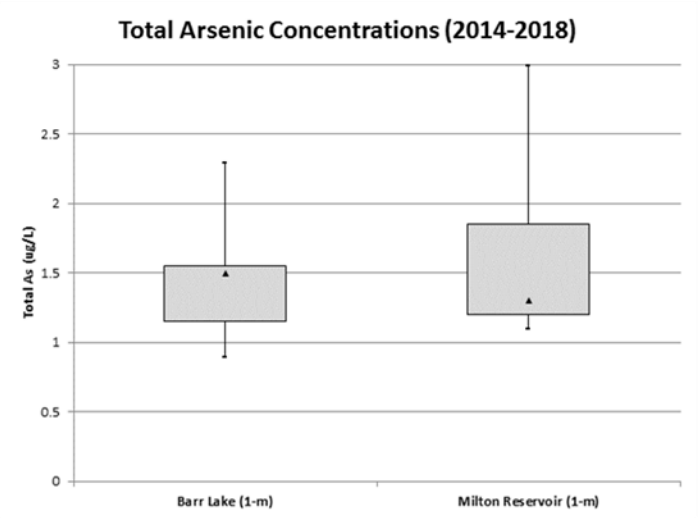
Denver's biggest issues with the proposed permit are the requirement to monitor pumped groundwater and the increased monitoring of outfalls, as currently written in the permit. Denver is willing to increase monitoring but it needs to be a reasonable plan to best leverage limited public funds. The group noted that Colorado is behind many other parts of the country where stormwater control requirements are already much stricter. Denver wants to do the right thing. The challenge is that there is such a long time period between permit renewals that instead of a slow, steady increase in requirements, there is a huge adjustment required every five or so years.

Brad committed to providing BMW with a response to our proposed comments no later than **Friday, September 6th. Amy** will forward Denver's edits to the Board requesting that they respond **no later than Thursday, September 12th. Dan** will then compile all the comments into one letter and send it to CDPHE by the **September 16th deadline.**

Brad and Jon committed to getting Amy the 20+ years of stormwater monitoring data and the analyses that have been collected, by the Phase 1 MS4 permit holders. The data may be particularly useful in the BMW watershed models. The Phase 1 MS4 monitoring network may dissolve and no longer collect instream data, collecting outfall data instead. Steve reminded Brad that BMW would continue in stream sampling with the BMW monitoring station.

The Board talked about proposed BMW comments on the non-standard MS4 permit concluding that the comments would stay the same unless there are changes to appropriate parts of Denver's permit comments that would be relevant. **Dan** was tasked with sending the final version of the BMW non-standard MS4 permit comments to CDPHE by the **September 16th deadline**.

Party Status for BMW Impaired Listing for Total Recoverable Arsenic – The Division is planning to list BMW as impaired for Arsenic. The requests for Party Status are due October 2nd and the Responsive Prehearing Statements are due October 16th. They are assuming people eat the fish and the human health based standard is 0.02 ug/L.



Steve went over the data he's collected since 2014, shown in the box and whiskers plot to the right. The Barr Lake average is about 1.5 ug/L and the Milton average is about 1.3 ug/L. There has been a temporary modification on the Arsenic standard that is expiring. There is no technology that can analyze samples down to the 0.02 ug/L standard.

The Board voted Thumbs Up to apply for party Status. **Dan** may have been tasked with applying for party status. He will not want to miss another meeting. **Amy** will reach out to Jim Doerch to understand his thought s about how the Arsenic standard is being applied. **Michelle** will reach out to Paul Winkle to get his thoughts.

OCCT Update – Steve reported that the Technical Committee's work has been completed and the last Stakeholder meeting was held. A final summary report may be available by September 6th. CDPHE has still not committed to support Denver Water's request for a variance. Denver Water will also need to submit a request for treatment modification to CDPHE to dose Phosphate at 2 mg/L instead of 3 mg/L. So far, it is believed that Denver Water has not yet submitted it's request for a variance to EPA. There will be a 30 day comment period once the variance is requested. **Amy** requested that the Board be prepared to review both a message to BMW Stakeholders requesting they comment with support for the variance as well as proposed testimony at EPA's public meeting.

In addition to Amy and Jon's OCCT talking points, BMW may want to note that Denver Water has been in compliance with the lead and copper rule since 2012. It could be an acceptable risk to let Denver Water accelerate service line removal and use phosphate dosing as a fall back position in case there are issues with service line removal. **Dan** can provide testimony for BMW unless it would be better for Amy to.

Modeling Effort and Carp Update – Steve reported that Kelly DiNatale and his staff are working on the model by meeting with Integral staff to go over data input into the model.

Steve reported that the carp harvest was disappointing this year, however, over the last several years, he has removed more than 4,000 carp or 35,000 pounds of fish or 100 pounds of phosphorus. That estimate doesn't include the decreases in phosphorus loading due to decreased bio-turbation. The carp tend to disturb sediments and release additional phosphorus into the water column.

Steve projected the revised Wasteload Allocation tables from Ken Wagner's report analyzing updated loading to Barr and Milton. He noted that the stormwater load is an estimate, based on best professional judgement. It is possible that the data from the Phase 1 monitoring network may help refine the stormwater load estimate.

Table 1. Relative source contributions for phosphorus loads to Barr Lake over time with Beebe Pipeline input apportioned to other sources

Source of Phosphorus to Barr Lake	2003-2004 Load (kg/yr)	Recent (2016-17) Load (kg/yr)	Reduction from 2003-2004 (%)	% of Total 2016-2017 Load	Load Reduction Assessment
Wasteloads					
Burlington Pump Works	26,075	0	100.0%	0.0%	Elimination of pump station
Metro WWTP via S. Platte through Beebe Pipeline	0	2,478	-	5.6%	Set at 70% of Beebe pipeline load as a function of estimated % contribution to S. Platte River at SP 124
Littleton-Englewood WWTP	33,893	34,803	-2.7%	78.8%	No reduction in TP since 2004 (2011-2017 mean identical to 2003-2004 mean @ 2.9 mg/L)
Centennial WWTP	1,194	1,226	-2.7%	2.8%	No change assumed (annual TP has varied from 0.32 to 1.27 mg/L with no pattern)
MS4 Regulated Areas	2,189	2,023	7.6%	4.6%	Assumes 10% reduction in associated loads over last 15 years through BMPs
Wasteload Total	**63,351**	**40,530**	**36.0%**	**91.7%**	
Loads					
Cherry Creek Reservoir	596	370	37.9%	0.8%	Average from 2016-17 scaled to 2003-04 model + 16 kg for Beebe Pipeline
Bear Creek Reservoir	1,091	938	14.0%	2.1%	Average from 2016-17 scaled to 2003-04 model + 25 kg for Beebe Pipeline
Chatfield Reservoir	1,338	990	26.0%	2.2%	Average from 2016-17 scaled to 2003-04 model + 26 kg for Beebe Pipeline
Beebe Pipeline	0	Divided among sources	"New" source	0.0%	Not in frequent use before 2015; S. Platte River water, combination of upstream sources; Average of 2015-2018 loads apportioned among upstream sources as per model (by % of total load)
Benthic P Load from Barr	4,000	1,360	66.0%	3.1%	New analysis indicates maximum internal load of 1360 kg/yr
NPS Load Total	**7,025**	**3,658**	**47.9%**	**8.3%**	
Total Load (all sources)	**70,376**	**44,188**	**37.2%**	**100.0%**	
Resulting In-Lake P conc.	689	296	57.0%		

Table 1. Relative source contributions for phosphorus loads to Milton Reservoir over time

Source of Phosphorus to Milton Reservoir	2003-2004 Load (kg/yr)	Recent (2016-17) Load (kg/yr)	Reduction from 2003-2004 (%)	% of Total 2016-2017 Load	Load Reduction Assessment
Wasteloads					
Burlington Pump Works	54	0	100.0%	0.0%	Elimination of pump station
Metro WWTP	28529	15183	46.8%	67.2%	Treatment upgrade has lowered TP from 2800 to 2015-2017 avg of 1490 ug/L
Littleton-Englewood WWWTP	1840	1840	0.0%	8.1%	No reduction in TP since 2004 (2011-2017 mean identical to 2003-2004 mean)
Centennial WWTP	65	65	0.0%	0.3%	No change assumed (annual TP has varied from 0.32 to 1.27 mg/L with no pattern)
South Adams WWTP	1,102	513	53.4%	2.3%	2015 treatment upgrade (2011-15 = 4.8 mg/L, 2016-17 = 1.5 mg/L) but flow increase (2003-04 = 10,833 m3/d, 2016-17 = 16,154 m3/d)
Fort Lupton WWTP	494	494	0.0%	2.2%	No apparent change since original load estimation
Brighton WWTP	491	491	0.0%	2.2%	No apparent change since original load estimation
Aurora WWTP	28	17	39.3%	0.1%	Treatment upgrade apparent (2003-04 avg listed as 0.20 mgL, 2015-17 = 0.12 mg/L)
Hudson WWTP	29	0	100.0%	0.0%	Relocated out of watershed
Lochbuie WWTP	22	44	-100.0%	0.2%	Expansion by 1 MGD in 2008, expected doubling of flow since 2004, no apparent change in effluent P concentration.
MS4 Regulated Areas	452	407	10.0%	1.8%	Assumes 10% reduction in associated loads over last 15 years through BMPs
Wasteload Total	**33,106**	**19,054**	**42.4%**	**84.4%**	
Loads					
Cherry Creek Reservoir	56	33	41.1%	0.1%	Average from 2016-2017 with scaling to adjust to 2003-04 model (2.4% reaches Milton)
Bear Creek Reservoir	76	63	17.1%	0.3%	Average from 2016-2017 with scaling to adjust to 2003-04 model (2.0% reaches Milton)
Chatfield Reservoir	122	88	27.9%	0.4%	Average from 2016-2017 with scaling to adjust to 2003-04 model (1.8% reaches Milton)
Benthic P from Barr	419	142	66.1%	0.6%	Reduced by 66% as a function of reduced internal load to Barr
Benthic P from Milton	2,000	1,300	35.0%	5.8%	New analysis indicates maximum internal load of 1300 kg/yr
Clear Creek	919	919	0.0%	4.1%	No change in loading known, input left same as 2003-04
Big Dry Creek	2,301	987	57.1%	4.4%	Average from 2016-2017 with scaling to adjust to 2003-04 model (5.2% reaches Milton)
Load Total	**5,893**	**3,532**	**40.1%**	**15.6%**	
Total Load (all sources)	**38,999**	**22,586**	**42.1%**	**100.0%**	
Resulting In-Lake P conc.	523	313	40.2%		

Website Discussion – Amy will updated the Board on the status of the website. Enough content has been migrated over to the Word Press site that it can go live whenever we need it to. However, there is an issue with most of the internal links on the site being broken. That means that data files and meeting minutes files cannot be reached from the site until the links are repaired. Amy is working to repair the links and is planning to train Lauren, the new BMW Intern, to do some of the work. Amy continues to meet with Carol Delynko to work through the technical issues. She will try to resolve enough of the issues that the site can go live in time for the September 24th Annual Meeting and BBQ.

I&E Update –Michelle reported on events at park and how algal blooms have become an increasingly important issue this year. The blooms are beginning to subsidize and she is working to place permanent signage informing and educating people about algae.

Donny reported that he will be attending a water festival organized by three different groups that will eventually be housed in the CSU water center at the National Western Complex. The event is this Saturday. **Donny** will send Amy information on additional events he's working on.

Updates/Action Items

- Chair's Report – **Steve** reported on results of auto-sampler results and will forward those to the Board (or Amy to distribute)
- Treasurer's Report
  - As of the July 31st, the balance is $251,366.03
  - All expenses since the last meeting are within budget and will be recorded as part of the minutes.

August Checks to Sign		
2092 - A-1 Organics, Carp composting, 8/9/19 statement	$ 19.20	Technical, Carp
2093 - A-1 Organics, 7/25/19 statement	$ 19.20	Technical, Carp
2094 - Amy Conklin, Coordinator	$ 8,219.05	Coordination
2095 - GEI	$ 764.10	Stormwater monitoring

- Coordinator Updates (Amy C.)
  - Approval of the July 23rd – There was a Thumbs Up approval of the minutes with the correction that Julie Tinetti attended the meeting in person and not on the phone.
  - Annual Meeting and BBQ – The meeting will be held at the park with Michelle's Dad catering calzones and noting that there will be a vegan. Maybe there will be a salad? **Amy** will call specific stakeholders to encourage them to attend, including asking Derek to distribute information to Haven members. Amy will also ask Blair Corning to attend as well as Rod Baumgartner and other BMW members we rarely see. Amy will also call Sam and Dom and request they come, if possible. **Michelle** will talk to Mindy May and others at CPW to encourage them to attend. Next year we may try to integrate the Annual meeting and BBQ with Public Lands Day.
  - BMW hard drive – external hard drive in Amy's brief case for anyone wanting to download files.
  - Stormwater Data – any new data will be sent out
  - Water Conference concept - Amy is still working on it.
  - Board meeting schedule of topics – we'll be continuing to talk about OCCT
  - Friends dinner 9/27 from 5-8 pm – Amy encouraged other Board members to attend this magical event.

Steve wanted **Dan** to know that the meeting ended at 11:34. Be careful.

Next Meetings

- I/E Committee Meeting – **September 10th, 2019 10 am to 11:30, Barr Lake Nature Center**
- Stakeholder Meeting – **September 24th, 2019 9:30 am, Barr Lake State Park, Annual Meeting and BBQ**
- Technical Committee meeting – **September 26th, 9 am Metro ?**
- Board Meeting – **October 22nd, 9 am Metro**

BMW I/E Events for 2019

Date	Event	Activity	Name and contact
August 31	CSU National Western Center River Festival	Poop Balloon and banner, booth to hand out bags, judging student projects	Donny, Dom, Lauren, Amy?
9/7/19	Birding Festival	Barr Lake State Park	Michelle, 9-1
9/28/19	Bark in the Park	Barr Lake State Park	Michelle 10 - noon
9/28/19	National Public Lands Day/Shoreline Clean up	Barr Lake State Park	Michelle, 9-12
10/12/19	Harvest Festival	Barr Lake State Park	Michelle, 9-1
10/26/19	Halloween Trail	Barr Lake State Park	Michelle, 6-9pm Lauren algae monster? Or Sam
November	CO Watershed Assembly	Conference	Amy?
November	Cherry Creek Stewardship Partners	Conference	Amy?

BMW Board 2019 'Schedule'

- *April 23, 2019 –*
  - *Invite DW to present their loading calculations and mitigation plan*
  - *Invite Meg Parish, CDPHE, to help in presenting TP mitigation plan*
  - *Invite WQCD staff, Aimee Konowal and Joni Nuttle, among others. Discuss concentration translator. Provide summary in advance.*
- May 28, 2019 –
  - 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 SPWRP**
    - 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. Go over IP Committee's outline?