

**Barr Lake/Milton Reservoir Watershed Association
 Technical Committee Meeting
 Thursday, July 26th, 2017 (9:00am – 11:00pm)
 Metro Wastewater Reclamation District, Denver**

Draft MINUTES

In attendance:

Steve Lundt – Metro Wastewater
 Linda Chynoweth - Aurora (phone)
 Laurie Rink -FRICO (phone)
 Elaine Hassinger – Tri County
 Jim Doersch – Metro

Julie Kinsey - EPA

Guests:

Amy Conklin – Coordinator

Steve welcomed everyone.

Modeling 2018/19

Steve has been gathering the flow data from FRICO spreadsheet from 2010 to 2017. He thinks he has everything he needs from FRICO for flow data. He has prepared a slide of how the data collection is going. He’ll talk to Marcia on Wednesday regarding the modeling effort. He still needs flow data from Xcel and South Platte Water Renewal Partners (SPWRP). One of the flows Steve needs to estimate is Lawn Irrigation Return Flows (LIRFs). While Aurora also calculates their LIRFs, our modeling effort will focus on Denver Water (DW) LIRFs because only DW is being required to add Ortho Phosphorus (P) for Optimal Corrosion Control Treatment (OCCT). Steve has been talking with DW to get better LIRF estimates. We want to count all the LIRFs not just the part from trans basin water sources. DW also made some assumptions about LIRFs from downtown Denver that need to be revised upwards.

DW estimates 2 million gallons of water are used each year for hydrant flushing with an additional 13 million gallons of hydrant flushing at DIA. The total flow from hydrant flushing is then 15 million gallons per year.

Steve went over the data he’ll need for the upcoming modeling effort using smiley faces for the data he’s been able to get. He’s found the Data Sharing Network very useful. He’ll keep working to gather the data needed for modeling. He is planning to talk to Marcia Greenblat at Integral on **Wednesday, August 1 at 9 am** and invited anyone interested in joining the call to contact him. Steve will ask Marcia if the current version of our model could be used to run OCCT

WQ Data (2011-2017)

- Chatfield Outlet Data
- Cherry Creek Reservoir Outlet Data
- ☺ Bear Cr. Reservoir Outlet Data
- ☺ Barr Lake (BL03) Data
- ☺ Milton Lake (MR03) Data
- DSN FRICO Inlet/Outlet Data
- Excel Data (Arapahoe)
- ☺ Big Dry Creek Confluence Data
- ☺ Clear Creek Inlet Data
- ☺ Sand Creek Inlet Data
- Industrial Data
- ☺ Metro WWTP (North, South, Burlington)
- ☺ NTP WWTP (New)
- DSN L/E WWTP
- DSN Centennial WWTP
- DSN SACWSD WWTP
- DSN Ft. Lupton WWTP
- BDCW WWTP (Broomfield, Westminster, & Northglenn)
- DSN Brighton WWTP
- DSN Aurora WWTP
- Lochbuie WWTP
- Hudson WWTP

Flow Data (2011-2017)

- ☺ Cherry Creek Res. Outflows
- ☺ Chatfield DWR.Outflows
- ☺ Bear Creek Reservoir Outflows
- ☺ FRICO Flow Data (Evans #2, Little Burlington, 1st, 2nd & 3rd Cr., outflows, inflows, lake volumes,
- ☺ Burlington Pump Flows
- ☺ SACWSD Flows.Recharge.Cat Miller
- ☺ S. Platte River Flows
- ☺ Tani Lake Diversions
- ☺ Ditch Diversions (Fulton, Brantner, Brighton, Lupton Bottom, Platteville, & Meadows Is. #1)
- ☺ Beebe Pipeline
- ☺ Sand Creek (new)
- ☺ Clear Creek
- ☺ Big Dry Creek
- WWTP Daily Flows
- Excel Flows (Arapahoe)
- Lawn Irrigation Return Flows (Denver Water)
- Denver Water Flushing Program (new, 15 mg/yr)
- Industrial Permit Flows

scenarios. Given the accelerated timeline for the OCCT litigation it might be better to use the existing model and not incorporate the 2010 to 2017 data. The MOU regarding the OCCT litigation is scheduled to expire in November of 2018, however, DW is more concerned about the March 2020 OCCT implementation deadline.

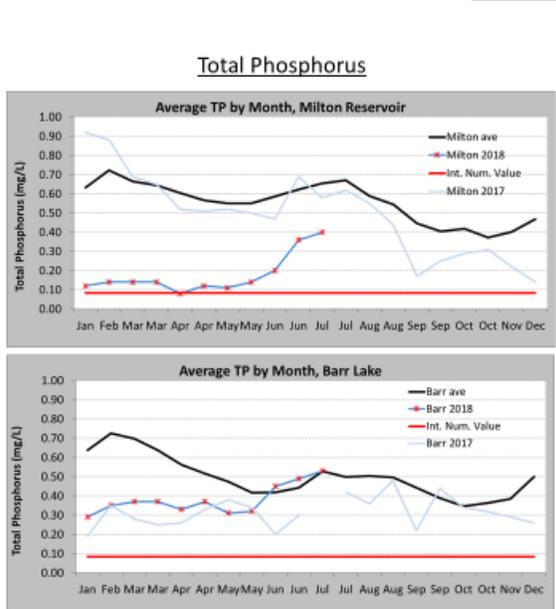
Steve was encouraged to contact Al Garcia at EPA to see if he might have some water quality data for categorical industries that we could use to estimate Phosphorus loads from the new industrial permits issued for Segment 14. **Linda Chynoweth** will work to provide Steve with daily effluent and Prairie Waters flows.

Steve shared that he is co-leading part of the OCCT litigation effort focusing on wastewater and watersheds. He will try to keep the group informed about upcoming meetings and proposed modeling using the BMW model. Metro is drafting some technical memos to assist DW in their arguments against using Ortho P for OCCT. A soil scientist in Minnesota has done a lot of work on the fate and transport of nutrients and may be engaged to assist with some of the OCCT studies.

Water Quality Updates –

Steve reported that since May, there has been a steady increase in P in both water bodies. Milton has been releasing water since about May, indicating the P source may be internal loading. Anoxic conditions support the hypothesis that the P source is internal loading. The lakes are now mixing, further increasing the P from internal loading. There have been some blooms but no big problems. The standards for P in both lakes are not being attained. The DO standard is not being attained in Barr, but in Milton it is. pH levels are looking good and both water bodies may be attaining the pH standard this year.

Water Quality Updates



DO

Depth (ft)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.0	8.1613	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
0.5	8.2544	8.2725	8.2550	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
1.0	8.4425	8.65	8.4761	8.69	8.2574	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
1.5	8.48	8.8847	8.7	8.84	8.276	8.2574	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
2.0	8.4322	8.7197	8.4712	8.81	8.2577	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
2.5	8.4243	8.7208	8.68	8.83	8.2578	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
3.0	8.4336	8.7387	8.585	8.85	8.2583	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
3.5	8.4198	8.7389	8.582	8.88	8.2588	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
4.0	8.3845	8.7419	8.4372	8.93	8.2593	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
4.5	8.3743	8.7382	8.4398	8.98	8.2598	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
5.0	8.4875	8.738	8.4389	9.02	8.2602	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
5.5	8.5488	8.7385	8.4384	9.08	8.2608	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
6.0	8.527	8.7384	8.4339	9.11	8.2611	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
6.5	8.4842	8.6888	8.4316	9.18	8.2618	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
7.0	8.3882	8.6839	8.4313	9.22	8.2622	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
7.5	8.2782	8.6844	8.4325	9.33	8.2633	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
8.0	8.2788	8.6816	8.4336	9.58	8.2658	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
8.5	8.2744	8.6778	8.4384	9.88	8.2688	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
9.0	8.5624	8.6885	8.4226	9.84	8.2681	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
9.5	8.2825	8.6358	8.4185	8.88	8.2688	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
10.0	8.2727	8.2337	8.68	8.6838	8.2684	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570	8.2570
10.5												

Julie Kinsey will research site-specific standards (SSS) adopted for other water bodies in our region and across the country. She encouraged BMW to engage CDPHE in any discussions of SSS. Any attempt to pursue SSS would require a Use Attainability Analysis. The recreation use is the use that drives the standards at both Barr and Milton. If SSS are pursued, the extensive work BMW has already done as part of the TMDL should be very useful. A story can be developed about the uses and the standards that will protect them in pursuit of SSS.

Box Net Plan for Carp

The Board approved the Technical Committee budget which includes employing box nets as part of a biomanipulation strategy. Steve hopes to employ the nets as soon as October. GEI has been retained to use the stormwater monitoring station for about 10 storm sampling events. In addition, Metro may use the station for other monitoring. They may want to expand the station to accommodate increased sampling. There is also some money in the budget for Ken Wagner's assistance, modeling efforts, source control efforts and assisting CU-Denver students. **Laurie** noted some differences between the budget Steve is using and the one the Board adopted and will work with Steve to resolve the differences.

Storm Water Monitoring Station Update

All the electrical work is done. The station just needs power. The station may be functional as early as next week. It is hoped that some good baseline data can be collected prior to Ortho P addition.

Next Meeting

Tech. Committee: September 27, 2018