

Barr Lake/Milton Reservoir Watershed Association
Technical Committee Meeting
Thursday, March 28th, 2019 (9:00am – 11:00pm)
 Metro Wastewater Reclamation District, Denver

Draft MINUTES

In attendance:

Steve Lundt – Metro Wastewater
 Elaine Hassinger – Tri County
 Marcia Greenblat – Integral (phone)
 Ken Wagner – WRS (phone)
 Kelly DiNatale – United (phone)
 Joni Nuttle – CDPHE

Curt Bauers – FRICO
 Al Polonsky – DDPHE (phone)

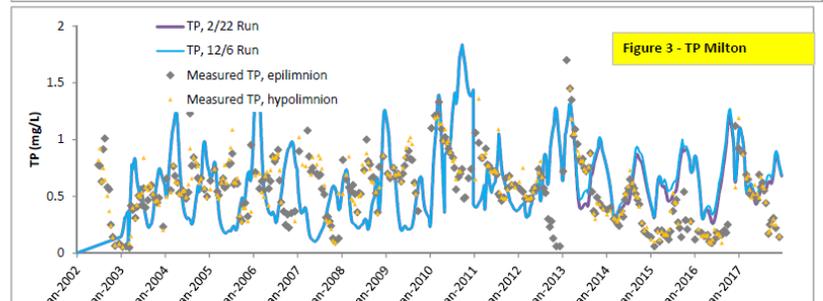
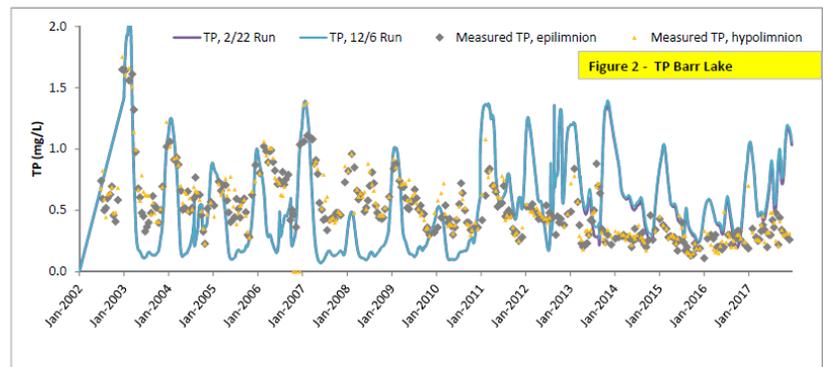
Guests:

Amy Conklin – Coordinator

Steve welcomed everyone.

Modeling/loading Update - Marcia reviewed that there was an original calibrated model, updated with 2005 – 2010 data.

The latest effort is to update the model with 2011 – 2017 data. In 2012, they looked at in-lake calibration inputs. For the first 2 years, calibration pretty good. Beginning in 2013, the model predictions are much higher than what the data show. In the later years the calibration gets better. Ken, Marcia and her team, and Steve did a diagnostic review to see if there were any changes in the data. The biggest change in the data is the flooding in 2013. They brainstormed that the change might be related to the assumptions of the internal cycling but that didn't work. They are done with the budget and with ideas about how to tweak the model without a full-scale calibration.



Biomass removal (die, carp, die) could make an impact but it shouldn't cause this much of a difference between what the data show and the model predicts. Other changes that were evaluated are: the draining of Milton for several years in a row for infrastructure improvements; more water being pumped through the BB pipeline since the Burlington Pumps are no longer

active; adjusting contributions from stormwater by 20%; and the Northern Treatment Plant coming online. So far, all indications are that changes to water quality from the 2013 flooding are causing the disparity between the data and model predictions.

Ken will be updating the relative loading contributions from the different sources and needs to match up with the model. He suspects that there may be too many inputs to the model. In reviewing the 2015 – 2017 data, he noted that Metro was discharging Phosphorus (P) at 2.8 mg/L and is now down to 1.5 mg/L. There haven't been any changes in P concentrations from effluent from South Platte Water Renewal Partners or Centennial during the same time frame. He also reviewed P contributions from benthic sources and will be looking at inputs from background, upstream reservoir, sources. He estimates that there has been a 40% loading reduction. The model appears to be adding in P loads that aren't there or not accounting for P loads being processed. **Marcia** will provide the data sets back to the contributors so they can review the data. Hopefully, an easy to fix error will be found in the data.

Marcia is finished with the modeling report and will send it to Steve. **Steve** will send out the report when he's had a chance to review it. The report will include the input data files for members to review. Ken is assuming that the smaller dischargers' effluent concentrations are at 3 mg/L P. He also needs to review data from Aurora. Then, he can finalize his report and send it to Steve.

OCCT Update – Steve reviewed that by March 2020 Denver Water (DW) will be implementing an Optimal Corrosion Control Treatment (OCCT). He has been working with others to develop a spreadsheet loading model to use in assessing DW adding 3 mg/L or maybe only 2 mg/L of Phosphate for OCCT. There is a Technical Stakeholder meeting on Monday where the results of the model will be presented along with some graphics Kelly is preparing. The Technical Stakeholder group is trying to complete all the technical work by June.

The latest changes to the spreadsheet model are to show how loading changes over time, by decades. Until about 2032, the wastewater treatment plants (WWTP) will not be online with P removal processes. After 2032, it is assumed that WWTPs will remove 100% of the OCCT load. One of the assumptions the group is struggling with is how to model P movement through the soil. P may build up in the soil to the point where all the OCCT P loads return to surface and groundwater. As Denver densifies, there may be less irrigation water used. Preliminary results show that loads from OCCT range from 6,322 lbs/yr to 12,847 lbs per year. The TMDL target load for the watershed is about 24,000 lbs/yr.

Kelly shared his draft graphics. Wright Water is preparing a memo for Denver about soil retention of P along with costs to mitigate it. At some point, all the P receptors in the soil are used up and the P added in the irrigation water will be flushed through. The current assumptions are that the soil absorbs a lot of the loads but eventually the soil will be 'full'. Much of the load that makes it through to surface water depends on the assumptions of soil retention. There is some discussion of studying soil retention of P in different types of plantings. The assumptions about groundwater and stormwater P loads may be overly optimistic; they may underestimate loads. There are sinks of P in the watershed, such as lawn clipping that are composted or mulched, that also need to be refined.

