Minnesota 3M PFC Settlement

Notes from the Government and 3M Working Group Meeting

Wednesday, March 17, 2021
9 a.m. – noon
Virtual Webex meeting

Group members in attendance

- Chris Hartzell
- Christina Volkers
- Daniel Kyllo
- Jennifer Levitt
- Jess Richards
- Jessica Stolle
- Jim Kotsmith
- Kathryn Sather
- Kevin Chapdelaine
- Kirk Koudelka
- Kristina Handt
- Lowell Johnson
- Mary Hurliman
- Michelle Elsner
- Monica Stiglich
- Ron Moorse

Presenters

- Kirk Koudelka, Minnesota Pollution Control Agency (MPCA)
- Jess Richards, Minnesota Department of Natural Resources (DNR)
- Jason Moeckel, DNR
- Hannah Albertus-Benham, Wood
- Jennifer Levitt, City of Cottage Grove
- Mark Lorie, Abt Associates

Welcome

Mark Lorie (Abt Associates) welcomed the work group to the meeting. Mark reviewed the agenda. The purpose of the meeting was to review the White Bear Lake situation and what it means for the Conceptual Plan and to discuss centralized water softening. Kirk Koudelka (MPCA) and Jess Richards (DNR) then welcomed the work group and explained the purpose of today's meeting was to gain additional clarity for some key issues. Kirk announced that Jeanne Giernet had retired from MPCA and Brian Hamrick was no longer with Wood. With Jeanne's retirement, communications to the work group would be coming from staff from Abt Associates and Hannah and Erin will continue to be the contacts for Wood. Jess explained that a key theme of today's meeting would be flexibility and how the Co-Trustees can design a plan that still allows for adjustments in the future.

The Citizen-Business group liaisons provided a recap of the March Citizen-Business Group Meeting the previous day. Key topics discussed include:

- Discussion about White Bear Lake, especially the details of the Court Order and the elements that make White Bear Lake unique. White Bear Lake is extremely connected to the groundwater system in the area. The Court Order imposes a lot of restrictions that the DNR must handle. Additionally, the Court Order affects cities outside the five-mile radius (e.g., Woodbury). There are a lot of resources online about White Bear Lake.

- Discussion about centralized water softening. Some felt that because it did not deal directly with PFAS, it should not be covered using Settlement funds. However, centralized water softening does deal with both water quality and quantity, which fall under Priority 1 of the Settlement.
- Public comments. There were multiple public commenters from West Lakeland Township expressing opposition to a municipal water system. They felt that the costs were too high, and many residents would choose to opt out of connecting to a municipal system because of high water bills or to keep their wells for irrigation.

White Bear Lake and the Conceptual Plan

Jess Richards and Jason Moeckel (DNR) presented on the White Bear Lake Court Order and its implications for the Conceptual Plan. The DNR was sued in 2012 by the White Bear Lake Restoration Association and White Bear Lake Homeowners' Association who alleged that DNR permitted too much groundwater use near White Bear Lake, causing the lake levels to drop. The District Court ruled in favor of the plaintiffs. The case has been reviewed by the Court of Appeals and the Minnesota Supreme Court. The DNR is not pursuing any further legal challenges and will continue working to implement the Court Order. Key elements of the Court Order include:

- DNR may not issue new permits or increases in allocations to existing permits within five miles of White Bear Lake unless certain conditions are met.
- In addition, before DNR can authorize a permit to use groundwater, DNR must have sufficient hydrologic data to understand the impact on White Bear Lake and the Prairie du Chien-Jordan aquifer. DNR is required to evaluate the impact any groundwater use permit would have on White Bear Lake, even if it is outside the five-mile radius.
- DNR has to require public water suppliers, that have permits within five-miles of White Bear Lake to implement a residential irrigation ban triggered when the lake reaches 923.5 feet in elevation; and the ban is to remain in place until the lake reaches 924.
- The court order requires that cities with permits within the five-mile radius have enforceable plans to reach a 75 gallon per capita per day residential use and 90 gallons per capita per day total use.
- Public water suppliers must also develop a contingency plan to shift from groundwater to surface water.
- The DNR must set a collective annual withdrawal limit for White Bear Lake.

Jess explained that implementation of the Court Order requirements does not line up with the timing of developing the Conceptual Plan for the east metro, which is why flexibility in the Conceptual Plan is so important. Jason then reviewed some of the historical water levels that were part of the DNR's hydrologic analysis, and the court's determination of a five-mile radius of the lake. Some key technical elements of the situation include:

- White Bear Lake reached its all-time low elevation in January 2013 at about 919 feet. Last week the elevation was just under 925 feet. The ordinary high-water elevation, a regulatory value, is set just under 925 feet.
- The Court Order said DNR must address any use of water within five miles of White Bear Lake. However, some communities (e.g., Oakdale and Lake Elmo) have some wells inside and some wells outside the five-mile boundary. Most of the high volume, permitted wells within the boundary are public supply water wells.

Jason also discussed important trends that have occurred related to White Bear Lake, including:

- Average groundwater use within the five-mile radius has generally decreased since 1988. One of the major causes for a recent decrease is that St. Paul Regional Water is no longer relying on groundwater, except in emergencies. They had been using a mix of groundwater and surface water to meet their needs up until a few years ago. They are now relying on surface water from the Mississippi River. However, they are maintaining their groundwater wells in case of emergency. Use has also decreased because the communities around White Bear Lake are now more established and not growing as quickly and household appliances have become more efficient.
- The long-term record for the lake (since 1920) shows cyclical periods of high and low water levels due to drought followed by heavy rainfall. There was a significant drought in the late 1980s followed by a very wet period in the early 1990s to early 2000s. Another dip began around 2005/2006, which also coincides with a period of below-average rainfall. -
- The outlet level of White Bear Lake has changed over time. After flooding in the early 1940's, area residents asked to lower the outlet to protect homes in lower-lying areas. It was lowered again in the 1980s as part of construction project at Ramsey County Park along with other facility improvements.
- In 2016, the DNR set a protective elevation at 922 feet. The protective elevation is based on the characteristics of White Bear Lakes long term history, lake ecology and recreational use.

Jason also explained how DNR created a sophisticated groundwater model to evaluate how groundwater pumping, rainfall and other factors affect the aquifers and White Bear Lake. The model has been extensively peer-reviewed. DNR used the groundwater model to simulate several scenarios using hydrologic conditions from 1998 through 2018, and evaluated water level dynamics from 2002 to 2018 and found that:

- Water levels in White Bear Lake would have been higher and would have remained above the protective elevation if there was no groundwater pumping among all permitted wells within five miles of White Bear Lake.
- Compared to existing use of water, a temporary residential irrigation ban would increase White Bear Lake levels only slightly (roughly a few inches) after several years, and lake levels would still drop below the protective elevation. For the communities closest to the lake, residential irrigation accounts for a relatively small percentage of total water use, therefore eliminating it on a short term basis doesn't change lake levels very much. In other words, a temporary residential irrigation ban is not the same as a 30% reduction in water use, year after year. In addition, mature landscaping in established communities tends to need less irrigation compared to newly established areas.
- If the lake outlet was raised while keeping existing permitted use the same, water levels would have been slightly higher for a longer period of time, but would still drop below the protective elevation.
- If a 25 percent reduction in pumping was implemented across all permittees, lake levels would have been about one foot higher, but would still drop below the protective elevation. A 40 percent reduction would get closer to the protective elevation. A 40 percent reduction in existing use, is a dramatic change and would likely be unacceptable to communities and residents.

Jason showed a chart with existing and projected water use in 2040. Jason explained how DNR included these growth projections in their analysis for White Bear Lake. They used the same projections that Wood used in their modeling for the Conceptual Plan. The graph shows the expected average annual water need in 2040.

Groundwater modeling showed that projected water use for 2040 would essentially use the water that was saved by recent conservation efforts and St. Paul Regional Water Service shift to rely solely on surface water.

DNR examined a scenario where Oakdale and Lake Elmo connect to St. Paul Regional Water Services (Option 3 in the Conceptual Plan). In this scenario, there would be approximately one foot of lake elevation gain when considering 2040 demands. The DNR will work with communities to consider a variety of options that meet the requirements of the court order and provide safe drinking water under the 3M Settlement. The hypothetical scenarios DNR examined really underscore that distance from the lake and volume of water pumped are both factors in discerning relative impact of any communities effect on water levels in White Bear Lake. Jason also highlighted the North and East Groundwater Management Area, which was designated in 2012 by the DNR, was due largely to concerns about water levels in White Bear Lake and aquifer levels in parts of the area that were declining, and the expected growth for some communities. The area boundary was selected because these communities are hydrogeologically related, which means that water use and aquifer recharge are not contained solely within a communities legal boundary.

Lastly, Jason reiterated that the Conceptual Plan needs to have flexibility while DNR works with communities and legislators to identify long-term solutions. DNR is scheduling meetings with all communities affected by the court order for White Bear Lake to ensure communities understand this challenge and to discuss solutions.

Feedback

One work group member asked who would make the decision about changing the outlet level in White Bear Lake. Jason explained that DNR has authority for establishing outlet elevations.

Another work group member asked if 3M pumping was reflected in the data. Jason explained that all groundwater pumping is reflected in the groundwater model, but the location of pumping is pretty far from the lake, and does not register as one of the individual large permits affecting lake levels. One work group member asked why DNR decided not to appeal the Appellate Court's decision to the Supreme Court. Jess explained that the Court of Appeals had originally ruled in favor of DNR because of a procedural issue. The DNR and its' attorneys do not think the Supreme Court would hear the case again.

Some work group members asked about the groundwater model used for White Bear Lake. They asked if Wood's groundwater model showed the same results as the White Bear Lake groundwater model. Jason explained that Wood's groundwater model used the same underlying data as the DNR model. However, the two models were designed to answer different questions. Another work group member asked about how the model took projected growth into account. Jason explained that DNR used the same growth projections that Wood is using for all of the infrastructure and sizing calculations. Growth is based on 2040 population and per capita water demand as submitted by the cities. Some work group members asked for more context on the slide deck to better understand the data. Note: The DNR has added more description to the slides for later distribution.

Another work group member asked why a residential irrigation ban would be considered if it did not raise water levels very much. This seems very restrictive for minimal gain. The residential irrigation ban is part of the court order and the groundwater model was not complete at the time of the order. One work group member asked, based on present use, and predicted 2040 use, what the White Bear Lake Court Order was actually solving. Jess explained that technically White Bear Lake and the Settlement are separate. However, they must be considered together in some ways because of the timing of the decisions to be made. He also explained that the Co-Trustees are envisioning a phased approach to implement the Plan, especially for Option 3. Co-Trustees would leave enough money to ensure Oakdale and Lake Elmo would receive safe water and have flexibility. One work group member said that the challenge with flexibility for communities is that cities need to figure out how to use

Settlement funds in combination with planning for future water use. They asked for more community-to-community policy discussions.

Feedback

There were no questions or comments from the public at this time.

Central water softening

Hannah Albertus-Benham (Wood) presented on centralized water softening. Kirk explained that the Co-Trustees wanted to bring up centralized water softening because it touches on a few elements of the Settlement. They feel that this is an important conversation to have since Priority 1 addresses both safe and sustainable drinking water. Even if the communities decide not to implement centralized water softening, the design could have the ability to incorporate centralized water softening in the future.

Hannah then explained some of the technical elements of central water softening, including:

- Groundwater throughout the East Metro is generally very hard. Many residents have in-home water softeners to address this issue. Cottage Grove and St. Paul Park have especially hard water. Some communities said that approximately 90 percent of their residents have in-home softeners. Others have less.
- Two environmental impacts associated with residential water softeners include wasted water due to the regeneration cycle the in-home softeners use, and high concentrations of chloride in the discharge downstream. One of the primary benefits of central water softening would be to save the water that is wasted from in-home softeners. Another is reducing the chloride in discharged wastewater which could improve downstream water quality.
- A paper released by MPCA estimated some costs for lime softening. However, the Settlement would have synergies between central softening and pre-treatment that would be needed to treat water for PFAS, so capital costs would not be quite as high. In addition, the Settlement would have to consider operation and maintenance costs and the costs to remove in-home softeners from peoples' homes.

Hannah explained that central water softening would eliminate the need for in-home softeners, saving money for residents who spend money on salt, energy, and to rent equipment. It would also reduce the money spent by communities on treatment by reducing the amount of water. Lastly, it would meet Priority 1 conservation goals by using less water from communities and pumping less water from the aquifer.

Jennifer Levitt from Cottage Grove shared information on central water softening from their community's perspective. In Cottage Grove, approximately 75 percent of residential properties have in-home water softeners. They use approximately three million pounds of salt annually and waste approximately 42 million gallons of water through recharging (4.18 percent of Cottage Grove's annual water use). There is the opportunity to reduce this waste significantly through central water softening.

Feedback

One work group member asked if centralized softening could be funded from either the sustainability and conservation bucket or Priority 2 funds. Kirk explained that centralized softening would still fall under Priority 1.

He explained that centralized softening must be factored into the design phase even if communities decide the Settlement should not cover this. Others asked for more details on softening costs and potential money the communities could save.

Next steps

Mark reviewed the next steps in the process for finalizing the Plan. Over the next couple months, the Co-Trustees will continue to gather feedback and update the Plan based on that feedback. The Co-Trustees expect to release the Plan in June.

The next work group meeting will occur on Wednesday, April 21. The agenda is not yet set.

Public comments and questions

A community member from West Lakeland Township expressed frustration that West Lakeland Township leadership has not yet sent a survey to residents to get their thoughts on implementing a municipal system. He estimated that 80 percent of residents would oppose a system or choose not to connect if one were available. Kirk explained that the goal was to wrap up final Settlement decisions in May, including West Lakeland Township. However, the deadline can be changed, if needed. He also explained that the Co-Trustees had done a public survey and worked to get the word out on social media. Two West Lakeland residents said social media was not a good place to reach residents since many do not have social media accounts.

Another member of the public felt that the East Metro was going to need more surface water to meet 2040 demands, even if communities wanted to keep using groundwater. They were concerned that the costs shown in the presentation for lime softening were underestimated. They doubted that cost savings from centralized softening would be seen by community members. They said that while there may be savings in some areas, the system may end up using more energy and requested more details on the cost estimates. Kirk said they presented preliminary numbers and they would have more detailed costs if the communities decided to move forward with centralized softening.