Minutes of the

REGULAR MEETING OF THE METROPOLITAN AREA WATER SUPPLY ADVISORY COMMITTEE

Wednesday, March 22, 2017

Committee Members Present:

Sandy Rummel, Chair, Patty Acomb, Jeffrey Berg, Jeanne Daniels, Randy Ellingboe, Georg Fischer, Todd Gerhardt, Dean Lotter, Susan Morris, Catherine Neuschler, Michael Robinson, Steve Schneider, Barry Stock

Committee Members Absent:

Mark Daleiden, Glen Gerads, Phil Klein, Jamie Schurbon, Lisa Volbrecht

Guest Presenters:

Virginia Yingling, Minnesota Department of Health
Chris Larson, S.E.H.

CALL TO ORDER

A quorum being present, Committee Chair Rummel called the regular meeting of the Council's MAWSAC Committee to order at 1:01 p.m. on Wednesday, March 22, 2017.

APPROVAL OF AGENDA AND MINUTES

It was moved by Dean Lotter, seconded by Todd Gerhardt to approve the agenda. **Motion carried.**

It was moved by Patty Acomb, seconded by Randy Ellingboe to approve the minutes of the January 25, 2017 regular meeting of the MAWSAC Committee. **Motion carried.**

TAC UPDATE

Technical Advisory Committee Chair Mark Maloney provided an update from the March 7, 2017 TAC Committee meeting. Review included discussion about water quantity and quality on topics such as recharge, reuse, effect of climate change and resiliency, source areas, efficiency, surface versus ground water, infrastructure. Looking for ways to collect data or better use the available data. Quote from draft TAC minutes, “Staff asked if there is anything that MAWSAC should be focusing on. Members indicated that both non-potable reuse and securing long term funding for regional water supply planning efforts are issues that they would like to see MAWSAC focus on first. In order to ensure that we are well positioned to obtain and manage data, as well as develop and maintain credible modeling capabilities, a permanent source of ongoing funding will be critical.”

<u>Questions/Comments:</u>

Clarification was provided that the consensus was that TAC relies on data that informs decisions and look to MAWSAC for support on pursuing stable funding for the data.

Is there an estimate on cost per year? Unknown at this time.

When is there enough data to make a decision? I would challenge the group to look in to that. Going to have impact on something every time a well is put in. Chair Maloney was in support of the challenge. The group is well positioned to identify the gaps in data acquisition efforts and leveraging what is available. There is value connecting the data collected.

METROPOLITAN COUNCIL

Could the modeling be done in levels? Chair Maloney will address.

INFORMATION

1. Delivery of MAWSAC Report to Metropolitan Council, Legislature – Lanya Ross, Metropolitan Council

   A summary of the process to share MAWSAC's report on water supply planning activities to the Metropolitan Council, legislature, and local stakeholders was provided. Electronic versions of the report and a supporting presentation were shared Special thanks to Barry Stock and Mark Maloney for sharing the components at the MN House Committee on Transportation and Regional Government and to Dean Lotter for presenting to the Environment Committee and Council. Legislative staff member Brooke Bordson delivered copies to all Chairs and ranking minority members on water related legislative committees as well as with Barb Huberty, Director of the Legislative Water Commission. The report was also shared by water supply planning staff with subregional work groups.

   Upcoming presentations of the report will be conducted at the Legislative Water Commission on March 27 with Dean Lotter presenting. The Land Use Advisory Committee (LUAC) has expressed interest in hearing a presentation of the report, which Dean Lotter will present. We are also working with the Clean Water Council to present about the report and hope to schedule for April.

   Lanya will follow up with an electronic version of the report and presentation to this Committee.

   Questions/Comments:

   It will be good to use the legislative report as a resource. Committee members are encouraged to review it often.

   If you would like a printed copy, contact *lanya.ross@metc.state.mn.us*

2. Legislative Update – Leisa Thompson, Metropolitan Council

   An update was provided about the 2017 legislative session including possible impacts to water supply planning in the metro area.

   House File 1731, Senate File 1734 – Clean Water Funds Appropriations

   Provides $1,000,000 each year for fiscal year 2018 and 2019 for regional water supply sustainability projects. Also provides $250,000 each year for fiscal year 2018 and 2019 for water use efficiency grants.

   The Met Council requested the bill be aligned with the Clean Water Council recommendation. The bill has moved through the House Environment and Natural Resources Committee. The Senate companion bill is being reviewed with Sam Paske, Assistant General Manager, Environmental Quality Assurance representing the Council as of this meeting date.

   Representative Peter Fischer may be adding an amendment to pilot new aquifer monitoring techniques at the municipal level in the region. Details are being worked out.

   House File 2028 – Storm Water use exemption from water use permit requirements authorization

Exempts reuse of water captured by "constructed storm water management facilities" (e.g. ponds, basins, holding tanks, cisterns, trenches, swales or other best management practices) from water use permits otherwise required by the Department of Natural Resources.

Questions/Comments:

Chair Rummel stated House file 1731 is also listed in the Governor's budget.

3. PFASs in Washington County – Virginia Yingling, Minnesota Department of Health

Virginia Yingling provided information about poly- and perfluoroalkyl substances (PFASs) in Washington County. Legacy site contamination of groundwater across a large portion of the county was found to have impacted water supplies of over 140,000 residents. This presentation discussed the approach taken by the Minnesota Department of Health to address emerging contaminant sites while trying to respond to immediate public concerns, some of the strategies employed, and on-going issues related to the gaps in knowledge about many PFASs that still exist.

PFAS's (partially fluorinated and susceptible to degradation) are a large class of over 200 surfactants with unique chemical properties that have been used in the 1940's in products that resist heat, stains, water, oil and grease. Production increased in the 1970's due to non-stick industrial and commercial uses that were developed. Examples Teflon and Scotchgard

PFC's (fully fluorinated and non-degradable) behave in unique ways. They do not break down in the environment, infiltrate rapidly to the groundwater and are readily adsorbed into the blood serum of living organisms. Environmental Protection Agency's Lifetime Health Advisories (HA's) have conducted animal studies and human correlational studies that suggest developmental and immune system effects from PFC's and the existence of short-term exposure concerns for developing fetuses, infants, and children. Minnesota Department of Health is currently using the EPA's HA's for PFOS and PFOA and hope to establish new HBV's in the spring of 2017.

PFAS's in the east Metro are manufactured in Cottage Grove since the 1940's. Waste was disposed of at the plant as well as 3 major off-site disposal areas. This area has been getting evaluated since 2003. New EPA Health Advisories for PFOS and PFOA were requested with more sampling and well advisories.

Geology affects groundwater by means of bedrock structures, faults, fractures that parallel and at an angle to faults and can be vertical or horizontal, and buried bedrock valleys.

Results of a PFAS megaplume encompasses over 100 square miles and showed 4 major aquifers contaminated involving 8 municipal systems and greater than 1,400 private wells. This was much larger than models predicted.

The Minnesota Department of Health and the Minnesota Pollution Control Agency response to the EPA's HA's called for expanded investigations in the east Metro identified West Lakeland Township and Afton as part of the affected area. Grey Cloud Island Township is also an area of concern. Over 600 wells were sampled this fall and winter with approximately 100 more planned, surface water transport is a major pathway of consideration. It also issued 198 new well advisories since August 22, 2016. Those receiving well advisories receive bottled water. Currently working with affected public water systems, and the Minnesota Public Health Laboratory to lower PFC reporting limits.

Drinking water treatment is being evaluated as well. Public wells have been evaluated in Oakdale. Other East Metro cities are monitored regularly by the Minnesota Department of Health

with some wells exceeding additivity evaluation once new HBV's are set. Over 2,100 private wells have been sampled to date with approximately 500 sampled annually, over 400 well advisories issued since 2005, residents are provided bottled water, and 220 homes in Lake Elmo were connected to city water since 2007.

Finally, biomonitoring was conducted in 2008, 2010 and 2014. With 196 initial participants, 164 returned monitoring data. PFC's decreased in the blood of people drinking treated water.

Questions/Comments:

All 4 aquifers are impacted and are being drawn from.

What is the source of funding for bottled water when contamination occurs, with the source from 3M disposal site? 3M pays or reimburses for deactivated carbon treatment systems. The State oversees the installation and maintenance of these systems. Wells affected by the Washington County Landfill are paid for by the Closed Landfill Program, which is State funded; annual sampling is paid for by the same funding.

Main sources for phone calls to MDH regarding PFASs are people wishing to move in to the area, rather than wanting to move out of the area.

Is reverse osmosis filtration effective? Yes. Both reverse osmosis and granular activated carbon were tested. Both are effective. If you want to treat all water in a residence, it is recommended to use carbon as it is more effective.

Next steps are for the Minnesota Pollution Control Agency and 3M, who have been cleaning up the sites.

For PFASs in the blood, can blood transfusion be done or do you have to wait for it to leave your system? Is there a way to treat for it? It is recommended that people start by eliminating exposure to PFASs and, over time, levels will drop. At this time, we don't have a known level in the blood to identify a health problem in order to treat. Side effects from the levels are hard to determine as well. Those with autoimmune diseases may be more susceptible.

4. Washington County Municipal Coalition: Water Supply Feasibility Assessment County – Chris Larson, S.E.H.

   Chris Larson provided information regarding a recent study conducted in collaboration with communities in southern Washington County. This technical assessment provided information about the capital and operational costs, as well as potential benefits, of alternative approaches to water supply in Washington County. Reuse of water from pollution containment wells was one of four approaches considered in this effort.

   The report was led by the Washington County Municipal Water Coalition and consists of Bayport, Cottage Grove, Lake Elmo, Newport, Oakdale, Oak Park Heights, Stillwater, St. Paul Park, and Woodbury and was voluntary. The population of the study area is anticipated to grow from approximately 170,000 in 2012 to almost 217,000 by 2040. Annual water usage will increase as well from 7,200 gallons per year in 2012 to 9,200 by 2040. This translates to average daily demand of 20 million gallons per day in 2012 to 25 million gallons per day by 2040.

   The feasibility study was done identifying the Jordan aquifer as a primary source of water for Coalition communities, and it addresses contamination issues and aquifer level drawdown affecting stream flows. Water sustainability approaches discussed included reuse of 3M pollution

containment water, a new surface water treatment plant on the Mississippi or St. Croix Rivers, connection to St. Paul Regional Water Services, and building new well fields (wells).

The study also addressed water demand. Approach 1 calls for the reuse of 3M contaminant containment water. 3M pumps 3,000 gallons per minute water from contaminant containment wells. PFC's or other unknown contaminants may potentially exist, but treatment options such as granulated activated carbon (GAC) could be used to provide water for non-potable uses such as surface water augmentation and industrial reuse. Potable alternatives were evaluated, based on treating water with reverse osmosis. Estimated capital costs ranged from $17,000,000 to $37,500,000 (cost per 1,000 gallons ranged from $1.10 to $4.70) depending on where the water would be sent. Evaluation of this option (reusing 3M water) shows industrial reuse options are expensive with no obvious benefit over existing use. Drinking water options are possible, but expensive with a higher priority use of water.

Approach 2 considers construction of a surface water treatment plant on the Mississippi or St. Croix River. This approach requires rigorous treatment. Conjunctive use of both surface and ground water would be used to supply the average day demand from a new surface water treatment plant, and peak demand would be supplied from existing wells and would allow for better water quality. Estimated costs range from $131,400,000 to $184,900,000 (cost per 1,000 gallons ranged from $3.50 to $6.20) depending on the location and size of the surface water treatment plant. This option offers a new source of water (redundancy), different water quality (surface water is softened while ground water is not), higher cost, and major infrastructure would be required.

Approach 3 explores a connection to St. Paul Regional Water Services (SPRWS) which is adjacent to some Coalition communities. Communities could connect to SPRWS, but connections would have capacity limitations due to the Hazel Park Pressure Zone. Also, there would be challenges mixing raw ground water and treated surface water. This option does allow for conjunctive use and provides multiple sources of water. Estimated costs range for this option from $4,800,000 to $10,200,000 (cost per 1,000 gallons ranged from $3.20 to $7.12). This option is most feasible for smaller scale projects. It provides a new source of water (redundancy), but it will create different water qualities ((surface water is softened while ground water is not). It would result in a higher cost of water. Major infrastructure would be needed for larger scale projects.

Approach 4 calls for optimized well fields. An attempt would be made to identify new well field locations that would limit contamination and drawdown. While this evaluation focused on Woodbury and Cottage Grove, the concept could apply to other Coalition communities. This approach would need to consider areas outside of municipal boundaries. The estimated capital costs, encompassing 6 wells, range from $26,400,000 to $25,000,000 (cost per 1,000 gallons range $1.10 to $1.20). This approach is the lowest cost alternative considered by the study. This approach would avoid taste and odor issues, but all well sites have drawbacks.

Water conservation was also evaluated. The study looked at how much water was used for non-essential use by subtracting winter monthly demand from average monthly demand; an estimated 192 million gallons per month of non-essential demand could be saved.

Next steps are to conduct an efficiency study with funding and participation by the Coalition communities, MCES, and Washington County. It will analyze water use data from Coalition communities and evaluate residential water efficiency such as irrigation options that could include Smart controllers, audits, free nozzle programs and Irrigreen as well as installation of efficient toilets, faucet aerators and washing machines.

The efficiency study would look at industrial and commercial water efficiency (partnering with MnTAP), city water metering and unaccounted water, water billing rate structures, and cost estimating, alternative evaluations, efficiency scoring and report preparation.

Questions/Comments:

There are approximately 20-30 golf courses in this area that use 40 mg/year for irrigation.

As all options were considered, was there an evaluation done look at ongoing sustainability of the ground water supplies in this area? At this time, not aware of the data, but it is being looked at closely. From a quality perspective, the sustainability of the water quality is important given impacts of the PFAS chemicals and the other problems with groundwater. Did not realize the full extent of the contamination until hearing the PFAS presentation recently. If health advisory limits are lowered, this could be a driving force.

Committee member stated he appreciates MCES being involved in the study. It has a downstream effect on streams, sewer collection systems and treatment. Need to consider the impacts on the wastewater site. Need to look at cost impact as well.

A member of the audience asked if an option was looked at for taking water from the St. Croix and if there was enough quantity to do so. Quantity was not looked at. Looked the possibility of permitting, if feasible.

5. Policy Discussion of Technical Analyses/Data Collection – David Brown & Lanya Ross, Metropolitan Council

Lanya Ross and Dave Brown led the group in a discussion of policy considerations, informed in part by TAC's discussion of technical analyses and data collection. Part of MAWSAC's role is to shape policy that supports the development and maintenance of a base of technical information for sound water supply decisions.

Goal is to provide a base of sound information for making water supply decisions as well as talk about challenges analyzing data and using it to make decisions as well as funding (resources in place) to respond to requests. We have models and tools that can be used for consideration.

Questions/Comments:

Staff inquired what the committee members felt the role of the Metropolitan Council is in the analysis and data collection process. Where would our services be most valuable? What are the funding needs?

Context of resilience was provided by staff. Being able to respond to requests, have backups or alternative sources or response plans in place to leverage neighbors as well as knowing limits and be able to operate within them. Discussed at TAC was thinking about short-term solutions.

How frequently should we be monitoring for the parameters we are looking for? Committee Member Ellingboe stated that for public water supplies the frequency of sampling and analyzing for regulated contaminants, along with their associated maximum limits, is mandated under the Safe Drinking Water Act. There is a specific schedule that water supplies have to meet. If contaminants exceed the limits, testing frequency increases. Another consideration for unregulated contaminants is the potential health impacts. There may be some information that could relate between public systems and private wells. If it is not regulatory, it depends on how frequently contaminants of concerns will be evaluated.

Staff stated that at the last TAC meeting a discussion occurred about water related data. Water use data was used as one example. Staff talked about the drivers for why the data is collected, what the data is used for and how the data is evaluated. Agencies have a variety of reasons for collecting data, but they are typically only for specific program uses. TAC members discussed ideas around what other ways there is to use and share the data. Could we benefit from having other tests done? Is there a role or regional goal for Metropolitan Council data?

When the Health Department collects data, is it collected from the well or after treatment? Committee Member Ellingboe stated that the Safe Drinking Water Act requires MDH collect samples at the entry point into the distribution system (after treatment) because that is the water supplied to customers. Testing for most regulated constituents, including nitrates, arsenic, bacteria, etc. are from samples taken at the entry point into the drinking water system. In some occasions the Department of Health may look at raw water quality from the wells. There are some public water supplies in Minnesota that provide no treatment and currently meets all safe drinking water requirements. Committee Member Ellingboe stated, in general, faucet testing looks at lead and copper concentrations as a separate rule under the Safe Drinking Water Act because it occurs after the entry point and gets at the water quality experienced after the water goes through the distribution mains in the City and to the customer's tap. Monitoring some changes in the distribution system or in looking at the effectiveness of corrosion control in distribution piping helps to determine if lead and copper is being stripped from the inside of the piping.

Is there a gap in raw water quality? One Committee Member heard a report. It stated the State does a nice job at testing, but not at analyzing. Interesting parallel.

Is there interest or value in the information from a community standpoint? At the Pollution Control Agency, we assess against class 1 standards. We have ground water monitoring network and don't have a good sense of where geographically it would fit with the other monitoring. Overlap with source water protection or analysis connection with land use connection for planning.

General Manager Thompson shared relative to data access, information provided on PFAS and heard from Washington County and put the question out there. We are busy collecting data if it was broadly available, communities might be able to draw on the information that is available. Is there a value seen that could come from the analysis?

Since St. Paul and Minneapolis both have a river water source their perspective must consider if there are any water quality concerns up stream. There are issues that can affect downstream users and that reach out to other outstate agencies. Committee Member Ellingboe stated that activities in the watershed are crucial in terms of determining the needed source water protection and the impacts on our water quality in Minneapolis and St. Paul. Awareness is critical because this issue impacts a significant amount of the population. If awareness could be expanded outside the Metro area, that would be good. Due to source water protection program at the DNR, drinking water supply management areas cross boundaries and coordination across city lines regarding wellhead protection is ongoing and a critical matter. Resources for wellhead protection efforts are stretched and opportunities we have for cooperation across city boundaries may be of interest.

How are chemicals being added to the ground monitored as well as in private wells? A suggestion was made for a presentation and education on fertilizer and pesticide be done at a future meeting.

TAC is interested in how much these ideas will cost. Collaboration and coordination will be a high-level topic for next meeting. Suggested TAC focus on what should be analyzed. Staff stated what can we do with specific data, what is the benefit, drawback without incurring additional cost.

UPCOMING MAWSAC MEETINGS

1. Next meeting date, future meetings and topics

   May 24 – collaboration and coordination
   July 26 – efficiency and conservation
   Sept 27 – funding
   Nov 29 – work plan for 2018

   Location is typically at the Metropolitan Council. Alternate meeting locations may be considered to allow tours of facilities. If there are conflicts with these dates, please notify Lanya Ross, *lanya.ross@metc.state.mn.us* .

2. Upcoming agenda items

   Committee members wishing to have items added to future MAWSAC agendas should forward them to Lanya Ross, *lanya.ross@metc.state.mn.us* .

ADJOURNMENT

Business completed, the meeting adjourned at 2:59 p.m.

Susan Taylor
Recording Secretary