

Minutes of the

REGULAR MEETING OF THE METROPOLITAN AREA WATER SUPPLY ADVISORY COMMITTEE

Wednesday, May 28, 2014

Committee Members Present:

Sandy Rummel (Metropolitan Council); Barry Stock (Savage); Michael Robinson (Chisago County); Randy Ellingboe (Department of Health); Tom Furlong (Chanhassen); Chuck Haas (Hugo); Susan Morris (Isanti County); Jamie Schurbon (Anoka County Conservation District); Lisa Volbrecht (Sherburne County); Glen Gerads (City of Minneapolis); Julie Ekman (DNR); Sharon Kroening (PCA) (attending on behalf of Katrina Kessler); Dan Stoddard (Department of Agriculture) (attending on behalf of Jeff Berg); Jill Trescott (Department of Agriculture) (attending on behalf of Georg Fischer)

Committee Members Absent:

Katrina Kessler (PCA); Jeff Berg (Department of Agriculture); Steve Schneider (St. Paul Regional Water Services); Mark Daleiden (Wright County); Georg Fischer (Dakota County)

CALL TO ORDER

A quorum being present, Committee Chair Sandy Rummel called the regular meeting of the Council's Metropolitan Area Water Supply Advisory Committee to order at 10:00 a.m. on Wednesday, May 28, 2014 and introductions of committee members occurred.

APPROVAL OF AGENDA AND MINUTES

It was moved by Chuck Haas, seconded by Tom Furlong to approve the agenda of the May 28, 2014 meeting. **Motion carried.**

It was moved by Jamie Schurbon, seconded by Randy Ellingboe to approve the minutes of the March 26, 2014 meeting. **Motion carried.**

MASTER WATER SUPPLY PLAN UPDATE

"In this meeting the Council staff would like to receive MAWSAC member's feedback on the proposed contents, process and schedule of the updated master plan"

Lanya Ross shared outreach that is taking place. Internal preliminary drafts of the Master Water Supply Plan contents, roles and responsibilities are being put together. Content will be brought to this group at a future meeting. Public meetings targeting city planners are taking place. Questions or suggestions can be directed to Ms. Ross.

Committee Member Haas inquired where this committee's review of the draft plan would occur for comments. Ms. Ross stated this group is anticipated as the first group for feedback before the next meeting. An EShare site is available to share discussion and provide input in to the content. A draft table of contents as well as the draft water resources policies are available on the EShare site for review.

Committee Member Haas suggested a line item be added to the timeline reflecting when this committee would be reviewing content.

Committee Member Haas inquired as to feedback obtained during initial meetings. Ms. Ross indicated the meetings initiated the process, communicated the schedule, scope, and expectations for consistency as the plan is being put together. The initial meetings are high level and took place in Shoreview with additional meetings in Golden Valley and Eagan in June, 2014. This summer, meetings will take place with elected officials, and additional meetings with city utility staff and planner meetings are planned for the fall. The formal public review process is anticipated for winter 2015.

Instructions for accessing the site can be obtained from Lanya Ross. A user name and password are required. The presentations used for the public meetings, attendance list and agenda are currently available on the EShare site.

Committee Member Haas inquired if the draft master plan for 2010 was adopted. Ms. Ross confirmed its adoption. It would also be helpful to highlight revisions as changes are made. Good feedback has been received so far from those who have been receiving the information.

Committee Member Furlong inquired as to what material changes are forecasted for updates in the 2010 plan. Ms. Ross indicated formatting will be changed due to ADA compliance requirements. Additional changes include update of the technical information, improving detail to the implementation plan (actions, milestones, and measurements for actions), revising roles and responsibilities section, adding detail, incorporating new roles and responsibilities (Clean Water Fund activities and programs), looking at subregions of the Metropolitan area (issues experiences and feasibility analysis).

Committee Member Furlong stated it will be interesting to see how this compares to what was there before and inquired as to what sort of measurements are being considered for the implementation plan. Ms. Ross indicated milestones will be identified and will be regional in nature and possibly subregional but will be discussed with this committee. No major roles and responsibilities will be changed in this plan; however, MAWSAC and others may want to identify entities that are involved in the process, but may not have a direct role in the planning process. Committee Member Furlong also asked about what the consistency in the city plans means. Ms. Ross indicated the details are being identified at this time. Desire is for criteria consistency and would be part of the Metropolitan Council Local Planning Handbook. Criteria have not been fully identified at this time.

Ms. Ross encouraged this committee to attend the upcoming meetings.

GROUNDWATER QUALITY ISSUES

“Water quality is another limitation to groundwater use in the Metro that many communities are currently addressing or gearing up to tackle in the near future. One of those communities is the City of Hastings, which is working to address rising nitrate levels in water supply wells. The city will discuss how this issue impacted treatment plant construction in 2006 and future planning for additional treatment. The city will also talk about other steps Hastings’ is starting to take to attempt to slow nitrate rise in municipal wells.”

Dr. Elhassan conducted a joint presentation with the City of Hastings. Over the past two years water supply issues and limitations presented to this committee mostly resulting from increased reliance on ground water. He also discussed impacts on surface water features. White Bear Lake level is a foot and half higher, but the same as it was last year.

Dr. Elhassan presented details of ground water quality. Many communities are addressing water quality. Information on areas in the metro area that have experienced increased contamination issues in the past 10 years as well as examples of communities planning new treatment plants to address water supply issues were discussed. The Minnesota Department of Health also issued advisories in several communities with special well construction zones where significant contamination is present in one or more aquifers and may risk public health. This exists in about 20 communities in the area. Upgrading to treatment systems are being addressed to improve water quality.

Cost of water among communities is higher in communities treating ground water versus those who are not. Over the next five years, \$100 million is being allocated in 9 cities for ground water treatment. Cities include Brooklyn Center, Shoreview, Edina, Elko/New Market, New Germany, Lake Elmo, Empire Township, Chanhassen, and Minnetrista.

Tom Montgomery, Public Works Director with the City of Hastings presented information on what the city has experienced with nitrates in their water supply. Their water system contains 6 wells, 1 nitrate removal plant, 3 storage tanks and 7300 accounts. He stated nitrates can affect infants up to 6 months of age as well as fetuses which can cause “blue baby” syndrome, a bacteria that interferes with the ability of the blood to carry oxygen. Currently Wells 3 and 5 are being treated for nitrates, Wells 6 and

8 have nitrate levels that have spiked above 9 mg/l and average between 7.5 and 8.5 and continue to rise. In 1999 Dakota County and Hastings jointly applied for a Clean Water Partnership Grant. In 2003, the Phase 1 study was completed identifying agriculture as causes of the nitrate issues. Vermillion watershed was the focus of the study and showed 50% of the wells tested showed elevated nitrate levels that were high or exceeded nitrate drinking water standards. He stated the Hastings drinking water supply management area is at a very high or high level of vulnerability for increased nitrate levels. Due to agricultural practices that extend for 15 miles outside of the city limits, nitrate levels are increasing in the aquifers. In 2004, the city identified two areas of concern, rising nitrate levels and growth increasing the need for additional water supply capacity. A water quality and productions study was commissioned and completed in 2005. Geologic formations limit new well site locations. In 2006, the construction nitrate removal water treatment facility on the Well 5 and Ground Storage Tank site was completed at a cost of \$3 million and treats 2 of the 6 city wells. Operation cost is \$150,000 to \$200,000 annually. Four anion exchange vessels were selected over reverse osmosis each with 400 gpm capacity due to ease of maintenance. The plant blends treated water with raw water for a total plant capacity of 2,400 gpm. The process is automated and SCADA controlled. The system is placed in "winter mode" during seasonal lower water use. Salt storage vessels use a salt brine to recharge the anion exchange vessels media. Target blended output is 4.6 mg/l. Also in 2006, Well 8 was constructed to meet water supply needs. Initial nitrate levels where in the high 6 to low 7 range. Considering the addition of another treatment facility at the Well 6 site in an industrial area. Cost anticipated at \$2.5 million to construct. Rates are currently \$1.85 per 1000 gallons with a 50 cent per 1000 gallons surcharge on usage above base winter volume. Surcharge used as a conservation measure and funds the operating costs of treatment.

In 2014, the city initiated a nitrate study on fertilizer impact on soil nitrate levels. Vacant land rented as farm land near two of the wells. Twenty seven lysimeters were installed via an MDH Source Water Protection grant of \$10,000 in nearby agricultural fields and a park athletic complex to monitor levels. Long range plan would like to see how much impact they influence in the city wells. Outside of the city they do not have influence.

Committee Member Robinson inquired if levels of nitrates increase when the levels of wells fluctuate. Mr. Montgomery stated they see a fluctuation in the spring. If the levels get too high, blue baby syndrome can occur in infants. Adults are not affected. Water is safe at this time. Notification would be made to residents if the levels reached unsafe levels.

Committee Member Gerads inquired what is done with the backwash water. Mr. Montgomery stated it is discharged in to the sanitary sewer system. Over a year is about 5 million gallons.

Committee Member Furlong inquired if consideration was made to access water from the river when considering new wells. Mr. Montgomery stated no. The cost to construct a treatment plant is \$3 million to remove nitrates. Surface water requires much more labor and contains more contaminants and a much higher cost to treat.

Committee Member Ellingboe inquired if costs for annual operation and maintenance contain the cost of wastewater as well as the response to education efforts within the city in relation to the grant as well as if consideration is being made to work with landowners outside the city boundaries on the issues. Mr. Montgomery stated yes the wastewater component is included. He further stated within Area A, a mile outside the city, letters were sent out to notify landowners about the affects of dumping on land or in abandoned wells can affect the drinking water system. He stated Dakota County conducts a great program with the Ag Department working with area farmers explaining the nitrate issue within the area. City staff have been included in those discussions to address actions needed and costs associated with treatment due to nitrate contamination.

Committee Member Shurbon inquired if there is future concern the amount of irrigation will affect the cities quantity of water. Mr. Montgomery stated they haven't seen draw down on their wells. They

have been monitoring and can tell when it is a heavy irrigation day, but not a substantial affect and no warning signs are present.

Committee Member Stoddard stated Department of Agriculture has been supporting the City of Hastings and has a long working relationship with Dakota County. Department of Agriculture has a good relationship with the growers in the area and survey work suggests they are following recommended best management practices. But following management practices is not enough to achieve water quality goals. Need to change land use by bringing in lower nitrogen crops. Crops are a benefit; however, there is not a market to support the growth of the crops.

TECHNICAL PROJECTS UPDATE

"In 2013, the state Legislature approved \$2,537,000 from the Clean Water Legacy Fund to evaluate the reliability and sustainability of the water supply throughout the seven county metropolitan area, including the northeast metro. This presentation summarizes the status of two main efforts taken by the Council."

John Chlebeck stated this is a continuation of discussion from March about the current feasibility assessments in the area of alternative water supply potential. Consultants are working the projects to provide update of preliminary results found. Draft report is due end of June. The purpose of this discussion was to share methodologies used and preliminary findings to date.

Two large studies are currently being worked on. The first focuses on the northeast (NE) metro looking at potential to use surface water as an alternative water supply to offset ground water use in the NE Metro along with direct lake augmentation to White Bear Lake. The second study is a region wide, broader scope study currently containing study areas in northern Dakota County and one in the northwest (NW) metro.

Chris Larson, Project Manager from SEH working on Northeast Metro Water Supply Feasibility Analysis presented details of the study.

Mr. Larson stated three tasks are being considered to bring drinking water sources the northeast metro area. The first is to connect the northeast metro to St. Paul Regional Water Services. The second is a feasibility of a new treatment plant with surface water source. Third is a direct augmentation of White Bear Lake.

Connecting to the St. Paul Regional Water Services (SPRWS) would not need to be completed at one time and could be handled in a staged approach. Benefits include reduced reliance on ground water as well as better water quality. Barriers include SPRWS infrastructure not currently designed to serve the area, increased cost of water, and significant construction needed, and timeframe to completing the work.

The second approach is to construct a new water plant with a surface water source to serve the northeast Metro. The SPWRS raw water line runs through the northeast Metro. Potential locations for a water treatment plant include East Vadnais Lake and the former Army Ammunition Plant in Arden Hills. This could also be a phased approach. Benefits include reduced reliance on ground water, better water quality and would be designed specifically for the northeast Metro. Barriers include increased cost of water and would be a significant construction project. The construction timeframe is estimated at 4 to 6 years.

White Bear Lake water levels are down approximately 4 feet. Evaluating augmenting White Bear Lake from the Mississippi River via Vadnais Lake or the St. Croix River. Efficiency and flowrate would need to be considered. Historical augmentation efficiency results were around 14%. The flowrate has limitations based on capacity (2 billion gallons per year being considered). Water quality and treatment would need to be evaluated due to zebra mussels and phosphorus levels. This will result in the need for infrastructure improvements. Benefits include helping the lake levels with no guarantee on how much. Barriers include capital and operating cost, public opposition, and no guarantee of success. Construction timeframe is 3 to 4 years.

The draft feasibility study is due June 30, 2014 with the completed final study due October, 2014. This study will inform the Master Water Supply Plan in spring 2015.

Committee Member Haas inquired why the feasibility study is considered a one-way versus a two-way flow. Mr. Larson stated the team was not tasked with this, however a preliminary inquiry has been done to determine what would be required. Surface water quality would be different and would require more advanced treatment. Not certain of the sustainability or viability of this option and would depend on boundaries.

Committee Member Haas inquired if a closer source has been investigated. Dr. El Hassan stated the regional stakeholders determined the options for the study, not Metropolitan Council's determination. Bald Eagle Lake was presented as an initial idea by the stakeholders; however, residents were not in favor of the option. Committee Member Haas stated a billion and half gallons a year leaves the lake and is no longer in the lake and it's available. Dr. El Hassan stated we do not have information about that at this time and can be looked into. This is the direction received from the regional stakeholders and could not make decisions about the options.

Committee Member Gerads inquired how the study fits within the Master Water Supply Plan. Dr. El Hassan stated one of the new concepts to be introduced in the update to the Master Water Supply Plan will be to look in to subregional opportunities for each of the subregions. As the feasibility analysis is done, opportunities will be identified so they can have a more sustainable water supply in the future. It is the decision by the communities if they want to implement the information being provided. Our job is to provide the information and make it available. Committee Member Haas inquired if it is supplemental to the plan. Dr. El Hassan stated it is to be part of one of the chapters addressing subregions.

Committee Member Furlong inquired as to why augmentation was discontinued in the 1930's. Dr. El Hassan stated the augmentation was from groundwater. Four wells were used and pumped from during lower lake levels. Augmentation was discontinued in the 1980's and wasn't an option around the lakes in the last 20-30 years.

Committee Member Furlong inquired if the cycles would continue going forward. Mr. Larson stated it is hopeful the up cycle would continue, but could not predict.

Kathryn Jones from HDR discussed the All Metro Feasibility Analysis. There are two study areas. For each study area there are four tasks which include water supply alternatives, storm water capture and use, groundwater recharge, and wastewater reuse. Regional implementation planning is another item in scope and evaluates cost share structures.

The first study area is the southeast Metro and includes the communities of Apple Valley, Burnsville, Eagan, Farmington, Inver Grove Heights, Lakeville, Rosemount, and South St. Paul. Population and demand projections were shared. Water supply alternatives include the Mississippi or Minnesota rivers as sources or a conjunctive use system from a surface water source as well as dedicated service lines to individual cities. Storm water capture and reuse evaluation compared storm water yield to non-portable uses is being considered and then tabulation of potential groundwater offsets. Groundwater recharge covers Dakota County and evaluates the geology, soils, permeability, land use, wellhead protection area and contamination sites. A mapping exercise can then be done to identify areas suitable for recharge within Dakota County.

The second study area is in the northwest Metro and includes Andover, Anoka, Brooklyn Center, Brooklyn Park, Carver, Champlin, Coon Rapids, Corcoran, Dayton, Fridley, Maple Grove, Osseo, Ramsey, and Rogers. Populations and demand projections were shared. Water supply alternatives include the Mississippi river, potential for collector (Ranney) wells, and connection to Minneapolis for neighboring communities. Storm water capture and reuse and groundwater recharge are also being considered. Regional implementation planning (cost share structures) include developing 3 examples of regional water systems. Examples include San Jacinto River Authority in Texas, West Harris Regional Groundwater Authority also in Texas, and Woodland-Davis Clean Water Agency in California.

Completion of the southeast Metro Study area analysis is due June 2014, northwest Metro Study area analysis is due September 2014 with a final report to Metropolitan Council in October 2014.

Committee Member Schurbon inquired how easy it would be to expand the maps on infiltration areas to the larger Metro area. Are the tools and data layers readily available? Ms. Jones stated yes and no. Some of the data sources come from the regional model. Some are unique to a specific area. Parameters for the northwest area may be modified.

WATER RESOURCES POLICY PLAN UPDATE

Due to time constraints, this item is being postponed.

LEGISLATIVE UPDATE

Legislature allocated \$550,000 in the last minutes to north and east areas for studies due to limitations. First, need to work with the DNR in the north and east groundwater management area for long term solutions. Second, \$100,000 allocated to Minnesota Pollution Control Agency (MPCA) and Board of Water and Soil Resources (BWSR) to address storm water issues to reuse in the north and east groundwater management area. Third, \$50,000 allocated to work with Minnesota Technical Assistance Program (MnTAP) providing assistance to cities, industries, and other on developing and implementing cost saving and environmentally protective or beneficial technologies.

Bill Moore stated there was not much activity in the legislature pertaining to Met Council's role on water in this session.

REPORTS FROM MAWSAC MEMBERS

Committee Member Ellingboe stated the legislature made other decisions to provide funding for the Board of Water and Soil Resources and the Department of Health to work through local soil and water conservation districts within groundwater management areas on source water protection issues. These are new funds for new programs to develop local capacity working outside of well-head protection zones, offers an opportunity to work in these areas, and have more resources to deal with issues.

Committee Member Ekman stated there were changes to groundwater management area language that address membership on the groundwater management area advisory team. Additions to membership for the north and east Metro groundwater management area are being considered.

ADJOURNMENT

Business completed, the meeting adjourned at 11:45 a.m.

Susan Taylor
Recording Secretary