SPECIAL JOINT WORKSHOP OF THE LAND USE ADVISORY COMMITTEE AND THE METROPOLITAN AREA WATER SUPPLY ADVISORY COMMITTEE

US Bank Center – 16th Floor (Minnesota Room)
101 East 5th Street, St. Paul, MN

METROPOLITAN COUNCIL

December 5, 2019

The Council's mission is to foster efficient and economic growth for a prosperous metropolitan region

Metropolitan Council Members

Nora Slawik	Chair	Raymond Zeran	District 9
Judy Johnson	District 1	Peter Lindstrom	District 10
Reva Chamblis	District 2	Susan Vento	District 11
Christopher Ferguson	District 3	Francisco J. Gonzalez	District 12
Deb Barber	District 4	Chai Lee	District 13
Molly Cummings	District 5	Kris Fredson	District 14
Lynnea Atlas-Ingebretson	District 6	Phillip Sterner	District 15
Robert Lilligren	District 7	Wendy Wulff	District 16
Abdirahman Muse	District 8		

The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

On request, this publication will be made available in alternative formats to people with disabilities. Call Metropolitan Council information at 651-602-1140 or TTY 651-291-0904.

Table of Contents

Attendees

Participants

1. Wendy Wulff, Council Member, LUAC and MAWSAC chair
2. Mark Maloney, Public Works Director, Shoreview, TAC chair
3. Scott Anderson, Utilities Superintendent, Bloomington, TAC member
4. Gerald Bruner, Watertown Township Supervisor, LUAC member
5. John Dustman, Summit Envirosolutions, TAC member
6. Dale Folen, Engineer, Minneapolis Water Works, TAC member
7. April Graves, City Council Member, Brooklyn Center, LUAC member
8. Valerie Grover (for Georg Fischer), Dakota County, MAWSAC member
9. Noah Keller, LUAC member
10. Phil Klein, City Council Member, Hugo, LUAC and MAWSAC member
11. Trista MatasCastillo, Ramsey County Commissioner, LUAC member
12. Steve Morris, City Council Member, Woodbury, LUAC member
13. Catherine Neuschler, MPCA, MAWSAC member
14. Karla Peterson, MDH, MAWSAC member
15. Jamie Schurbon, Anoka County Soil and Water Conservation District, MAWSAC member
16. Jamie Wallerstedt, MPCA, TAC member
17. Bruce Westby, City Engineer, Ramsey, TAC member
18. Vince Workman, City Council Member, Burnsville, LUAC member
19. LisaBeth Barajas, Community Development Director, Metropolitan Council
20. Leisa Thompson, Environmental Services General Manager, Metropolitan Council
21. Sam Paske, Environmental Services General Manager, Metropolitan Council
22. Angela Torres, Local Planning Assistance Manager, Metropolitan Council
23. Ali Elhassan, Water Supply Planning Manager, Metropolitan Council

Presenters

- Lanya Ross, Environmental Analyst, Metropolitan Council (Water Supply Planning)
- Erik Wojchik, Planning Analyst, Metropolitan Council (Local Planning Assistance)
- Phil Belfiori, Director, MN Environmental Quality Board

Council Support Staff

- Debra Detrick, Local Planning Assistance Research Analyst
- Emina Dzafic, Water Supply Planning Intern
- Henry McCarthy, Water Supply Planning Intern
- Susan Taylor, Environmental Services
- Jinger Pulkrabek, Environmental Services

Observers

- Carol Szaroletta, City of Cologne
- John Clark, Metropolitan Council
- Erik Dahl, EQB
- Paul Gardner, Clean Water Council
- Steve Huser, Metro Cities
- Jodi Polzin, CDM Smith
- Judy Sventek, Metropolitan Council

Overview

The Metropolitan Council, local governments, and partners have opportunities to: A) be more effective in making local decisions that protect water supplies; and B) influence regional policies that inform the Metropolitan Council and other partners' support for these local efforts.

On Thursday, December 5, 2019, members of the Land Use Advisory Committee (LUAC), the Metropolitan Area Water Supply Advisory Committee (MAWSAC) and the Water Supply Technical Advisory Committee (TAC) met to make progress working on shared interests, informed by committee members' diverse roles and responsibilities.

Figure 1. Small group discussion among LUAC, MAWSAC and TAC members.

This event built on a joint workshop held in November 2017 when Committee members identified topics where land use planning and water supply planning overlap.

Outcomes

Central goals were to explain where continued collaboration is heading and learn where committees want to go from here. Meeting outcomes included:

1. Better understanding of the different roles and responsibilities of committee members
2. Increased impact from projects of shared interest by filling information gaps and leveraging networks
3. High-level road map of how work will inform the 2050 Metropolitan Development Guide, policy plans, and ultimately, local comprehensive plans
4. Shared ideas to map out planned phases of continued collaboration

Agenda

Pre-meeting	Coffee and networking
1:30 pm	Welcome and orientation
1:35 pm	Review of committee roles and timelines
1:45 pm	Introductions
2:00 pm	Presentations and small group discussions *(includes a short break):* • Water supply-related data and trends in comprehensive plans • Toolbox to support more effective drinking water protection • Climate Vulnerability Assessment chapter addressing water supply resilience • Input to Environmental Quality Board State Water Plan
3:30 pm	Large group report out and road map
3:50 p.m.	Next steps and wrap-up
4:00 pm	Adjourn

Introductions

Committee members introduced themselves and briefly shared what most interests them about the connection between land use and water supply:

Figure 2. Word cloud of committee member interests regarding the connection between land use and water supply.

Presentation and Discussion

Presentations

Four topics were presented on current efforts related to both land use and water supply. Members will receive a link to the slides posted on the *LUAC* and *MAWSAC* committee web pages.

The topics were chosen to support the committees' roles. All three committees were formed to advise the Council, including shaping policy, and committee input is also valuable to do the work appropriate for that policy. The committees are setting, or will soon set, their work plans – which will include policy discussions and projects that support policy.

These presentations were not intended to be a deep dive into each topic. Instead, the goal was to spark:

1) Committee members' questions to inform future committee meetings and
2) Discussion among committee members that generates ideas for adding value to these projects.

If committee members want a deep dive on any of these topics, Council staff offered to bring much more detail to future committee meetings.

Question Burst Exercises

After each short presentation, Council staff led the group in a short exercise to collect the group's questions that were at the top of mind.

Figure 3. Henry McCarthy and Emina Dzafic record committee member questions following each presentation.

These questions were used to spark small group discussion, and staff committed to compiling and including them in this workshop summary. This summary also includes answers to those questions, adding value to this document.

These questions will also be used to shape future committee meeting topics. Photos of the question posters are in Appendix 2.

Small Group Discussions

After each short presentation, committee members and Council staff spent several minutes talking at their tables, writing notes on worksheets provided.

Figure 4. Small group discussions followed presentations.

Council staff committed to collecting the discussion worksheets after the meeting, compiling the information, and sharing back as part of the workshop summary.

The ideas were also shared with presenters to inform their efforts/projects.

These notes are summarized in Appendix 1.

Water Supply-Related Data and Trends in Local Comprehensive Plans

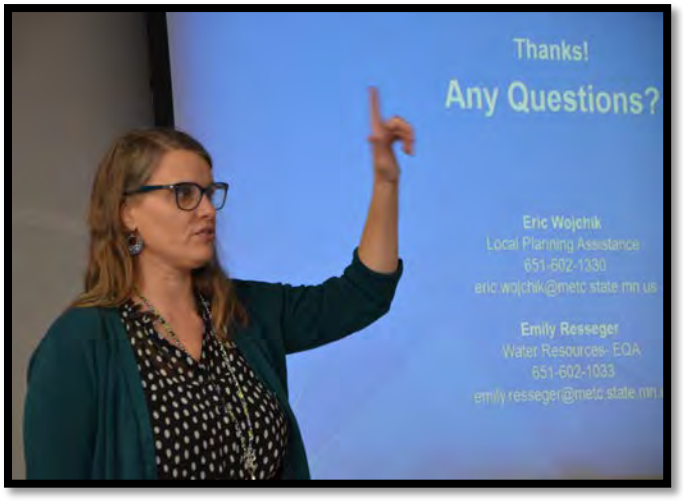

Figure 5. Lanya Ross presented about data and trends in comprehensive plans.

Questions about this topic:

Question: How is the water demand determined?

Staff response: Communities with municipal public water supply systems track information like the amount of water they pump, the amount they deliver for different uses such as: residential, commercial/industrial/institutional, supplier services, and others; the population served by the public water supply system; and the number of connections to the system. This information is reported in Tables 2 and 7 of their *Local Water Supply Plans*, which are submitted to the Metropolitan Council as part of their local comprehensive plan updates and to the MN Department of Natural Resources (DNR).

Residential per capita water demand is calculated by each community with a public water supply system:

Residential water demand per person = (total residential water delivered during the year ÷ population served) ÷365 days

Metropolitan Council staff calculated the average residential per capita water demand for each community designation type using these community-reported values.

Question: What is the variability between peak and average day demand?

Staff response: Water supply planning staff will include this analysis in their work going forward and will report back to the committees in 2020.

Question: Does Metropolitan Council account for weather variances – wet/dry years (how does that affect the goal)?

Staff response: Weather affects the day-to-day water use by communities and is therefore reflected in the water use information they submitted to the DNR and Metropolitan Council in Tables 2 of their *Local Water Supply Plans*. High water use during hot summers can make it more challenging to achieve water use goals.

Question: Will information from plans be shared back with communities? How?

Staff response: Yes, Met Council intends to share information compiled from local plans with communities. The questions that LUAC, MAWSAC and TAC shared today will inform what information is collected and shared. Venues such as the subregional water supply work groups and future MAWSAC and TAC meetings will be used to share and review the information.

Question: How long has Met Council been tracking residential water use (gallons per person per day, or gpcd), and how does 75 gpcd compare?

Staff response: For decades, the Metropolitan Council has periodically reviewed residential water use reported by communities to the DNR. For comparison, between 2003 and 2012, metropolitan area residents each used an average of about 94 gallons per person per day for residential purposes (as reported in the 2015 Master Water Supply Plan).

Question: 73 gallons per person per day average for agricultural communities: how did you come up with that number?

Staff response: Community designations identified in Thrive MSP 2040 were used to identify agricultural communities. Communities with municipal public water supply systems report their average residential water use (gallons per person per day) in Table 2 of their *Local Water Supply Plans.* For each community who had submitted a plan, 2010-2015 average residential water use was calculated. Then all of the agricultural community 2010-2015 residential water use values were averaged.

Question: Is there an infrastructure database?

Staff response: Currently, there is no geospatial (map) database of water supply infrastructure. However, multiple federal and state agencies maintain some water supply infrastructure information. Examples:

- *Environmental Protection Agency Safe Drinking Water Information System (SDWIS)*
- *MN Department of Health Source Water Assessments*
- *MN Department of Health Public Health Data Access Drinking Water Query*
- *MN Department of Health Minnesota Well Index*

Question: Which communities are measuring groundwater levels?

Staff response: Water supply planning staff are currently compiling information about which communities are measuring groundwater levels, based on information submitted in Tables 8 and 9 of their *Local Water Supply Plans*. Water supply planning staff will continue to include this analysis in their work going forward and will report back to the committees in 2020.

Drinking Water Protection Guidance Toolbox

Figure 6. Lanya Ross updated the committees about a project to develop drinking water guidance.

Questions about this topic:

Question: Any discussion about a mobile app?

Staff response: Yes, there has been discussion about developing a mobile app, although a final decision has not been made. A key goal of this work is to provide easy-to-access information to influencers and leaders so that they can respond to questions quickly with sound information.

Question: How does it get integrated into wellhead protection planning?

Staff response: Minnesota Department of Health (MDH) drinking water protection planners are part of the project focus group, to ensure that information and tools are compatible with wellhead protection planning. The final products are intended to support communities' implementation of their wellhead protection plans.

Question: Would the toolbox incorporate streaming data?

Staff response: At this time, no final decisions have been made about what data to incorporate into the toolbox. Water supply planning staff will bring this question to the project team to consider.

Question: How can we create more awareness within the general population?

Staff response: A recommendation of the focus group is to identify key influencers/opinion leaders who can share and amplify key drinking water protection messages. A goal of this project is to arm these people with easily accessible, credible, and applicable information so that they can share information with people where and when they are most interested in using it. Metropolitan Council staff will solicit additional ideas from LUAC, MAWSAC/TAC and others as this project continues.

Question: How can we target future generations who are currently in grade school?

Staff response: A recommendation of the focus group is to identify key influencers/opinion leaders – such as educators – who can share and amplify key drinking water protection messages. For example, components of this toolbox could be incorporated into activities at events such as the Metro Children's Water Festival, which the Metropolitan Council has

sponsored since its inception in 1998. In past years, about 1,200-1,300 fourth grade students have attended the festival from the seven county metropolitan area to celebrate our most precious resource: water.

Question: Where would the tool "live" regulatorily?

Staff response: Currently, the expectation is that this outreach/engagement tool will be housed at the Metropolitan Council, similar to other tools such as the Water Conservation Toolbox or the Climate Vulnerability Assessment.

Question: How do these resources get used in land use decision making?

Staff response: This has not been finalized. Some ideas for how these resources get used in land use decision making include: developing metro-targeted example ordinances or engagement programs (building on effective local examples) and leveraging the Council's *Local Planning Handbook* and *PlanIt* resources. Metropolitan Council staff will solicit additional ideas from LUAC, MAWSAC/TAC and others as this project continues.

Question: Is this meant to be public facing? Customizable?

Staff response: Yes, this is intended to be public facing, with content customized to different users such as planning and zoning staff, city council members, teachers, etc.

Question: Will this be targeting areas that need improvement with protection?

Staff response: Yes; targeting areas that need improvement with protection is a focus of this work.

Question: Will the Minnesota Department of Health (MDH) be brought into the conversation?

Staff response: Yes, MDH is and will continue to be part of this discussion. MDH staff from the Drinking Water Protection Program have participated at the kick-off workshop and on the focus group.

Regional Climate Vulnerability Assessment: Localized Flooding and Water Supply

Figure 7. Eric Wojchik presented about the draft water supply chapter of the Climate Vulnerability Assessment.

Questions about this topic:

Question: When it comes to flooding, is there infrastructure planning to mitigate water flow in flood-prone areas? What can we do to allow strategic flooding to happen (parks, garages, etc.)?

Staff response: In terms of Metropolitan Council (Council) assets and operations, the various divisions and work groups at the Council are reviewing the localized flooding data and the recommendations in the different system's chapters related to urban/localized flooding. For example, wastewater staff have noted that proposed locations of new lift stations may need to be reviewed more carefully in light of the flooding data and sealing of maintenance holes have been prioritized based on the data. Metro Transit has been considering how and where best to reroute transit routes based on the flooding data, so the information will feed into our operations across most of our systems. The Regional Parks Implementing Agencies are looking at how localized flooding is affecting bike paths, access to part amenities, and public safety. The localized flooding data and analysis will be incorporated into the next Metropolitan Development Guide to direct staff to consider the data in infrastructure and operational planning.

Outside of the Council, county highway departments, watersheds, and other stakeholders have been using the data to plan for infrastructure improvements to increase stormwater conveyance and storage, while enhancing public safety.

Question: When will the chapter be finished/available?

Staff response: Given current workloads and the need to vet the Water Supply Localized Flooding CVA chapter through the Minnesota Department of Health (MDH), this timeline has been pushed back to the end of February.

Question: What are we doing to deal with the potential for more snow in the winter?

Staff response: Our localized flooding analysis does not consider snow. Water certainly behaves differently than snow in terms of how it accumulates. The State Climatologist states that our snowfalls will become heavier due to there being more moisture in the atmosphere due

to our changing climate. However, it will likely be the case that snow will melt quickly as our winter low temperatures continue to rise over time. We will likely see more events like in March 2019, when we had snow and ice which obstructed a lot of our storm drains, then we were hit with heavy rain, which caused a lot of street flooding. In these instances, our localized flooding data can prove helpful in seeing where water will likely gather when stormwater drains are blocked.

Question: How does infiltration status/changes influence flooding?

Staff response: This question is best directed at water resources staff, especially at the watershed level, as these professionals can hydrodynamically model the effects of flooding in combination with soil type. Our analysis does not take into account infiltration rates and soil type, as much of the urban area consists of soils that have been brought in, so infiltration rates cannot be determined without a site-specific analysis in many cases.

Question: Elevated groundwater levels: how to address long-term and short-term changes?

Staff response: Elevated groundwater can be dealt with by allowing for areas that can and will flood as groundwater levels increase. Increasing riparian buffer areas and ensuring that shoreland regulations are in place can help with some of these issues, as these areas can become wetlands during wet years. Variability has always been a part of our climate here in Minnesota. The challenge now is that that the variability is more intense, more localized, and occurs with more frequency. How we plan for this will be critical in the coming years, especially for communities dependent on groundwater as their principal water supply. Many communities are putting contingency plans in place to consider accessing surface waters for their water supply in the event of shortages.

Question: How can flooding be used positively?

Staff response: The best examples of using flooding positively are from the City of Copenhagen, which is very low-lying. Areas are designed to flood, but they also have other, more passive, recreational uses when they are not flooded. Designing parks and low-lying areas to flood, along with planting appropriate plants and incorporating water storage, can have large benefits in terms of appropriately planning for extreme precipitation followed by drought conditions. Designers are still learning more about how best to plan for a diverse range of severe conditions while allowing areas to be used by residents while flooding is not occurring.

Question: How do people's behaviors change during these events and as the frequency of these events increase?

Staff response: Behavioral change will be key to success in helping people to understand that the magnitude and frequency of these events is increasing. One of the main reasons that we created the data and have done the analysis is to get people to discuss this growing hazard of urban or localized flooding. Much more work needs to be done to raise awareness of this issue, and our CVA work is really the first work done in Minnesota, apart from some localized Minnesota Department of Transportation (MnDOT) projects, that really look at this growing issue. Every year these events will increase in frequency and magnitude, so we need to get ahead of them through sound urban planning and public safety awareness. The fact that public works staff at many communities in our region are discussing the issue of localized flooding shows that it is having an effect on our infrastructure and asset management.

2020 State Water Plan

Figure 8. Phil Belfiori presented about the Minnesota State Water Plan.

Questions and discussion about this topic:

Questions on general awareness and planning

- Government regulations. Competing ideas and not talking to each other. It's hard to make changes.
- More rain events. Explain reasons for conservation.
- Barrier. The public doesn't think locally about climate change impacts.
- Data isn't in one spot, and it's hard to get a baseline.
- Large infrastructure projects don't take impacts of materials into account.
- Is there a plan to standardize data collection?
- Meat consumption and its impacts
- How city zoning and design are flexible for durability. For example, a sump pump.
- Conservation so older water and more water quality issues
- Barriers. Not one solution without looking at how will affect others
- Drainage causes problems downstream
- More water. Prioritize storage on the landscape, for example, wetlands.
- Credits…strategies for storage *(note: discussion not captured in detail here)*
- Rural development
- Other states requesting water; state will step into. For example, mining water

Questions on ideas for action - what kind of resources or assistance would be most helpful to your organization to make progress on these actions identified in the last slide?

- Financial assistance, including grants and matching funds. For example, Council grants for toilets and other improvements.
- Model policies or ordinances
- Reuse ponds
- MN Department of Health (MDH) water monitoring
- Source water protection grants
- MN Board of Water and Soil Resources (BWSR) program. Cost-share grant for homeowners
- State-created safety net
- Low-interest loan program

Wrap-up and Next Steps

A high-level timeline of committee work was reviewed, highlighting the beginning of LUAC-MAWSAC/TAC collaboration in 2017 and potential phases of committee collaboration going forward:

1) Influencing projects and next steps
2) Acting on next steps
3) Making policy recommendations

The group discussed what would be of value to address in committee meetings going forward. The following ideas were identified:

- Developing a problem statement
- SWOT Analysis (ideas and opportunities)
- Identifying holes, highlights in comprehensive plans (BMPs, ext.)
- Exploring the public safety standpoint
- City water supply information versus region

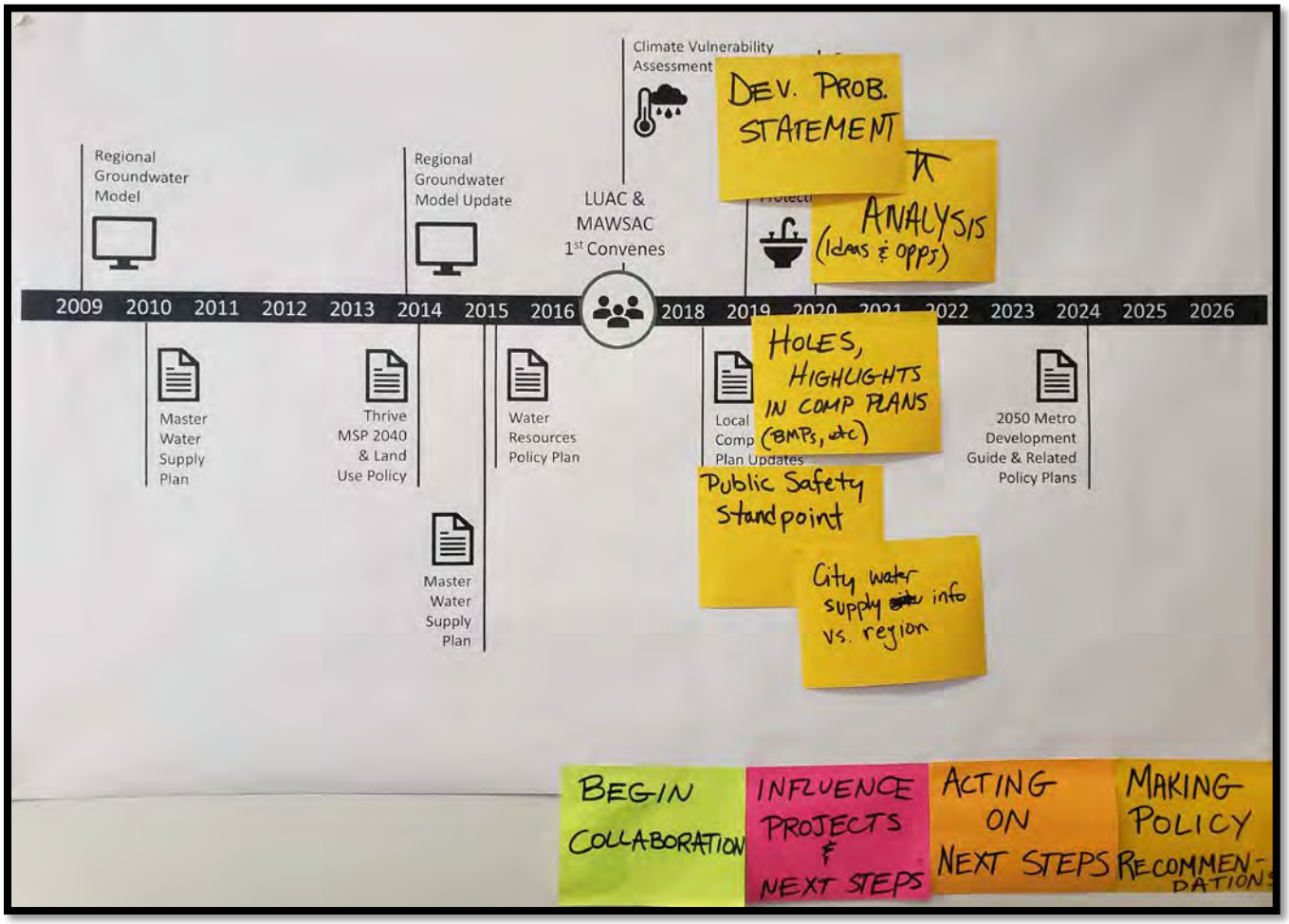

Figure 9. Poster of some key projects and planning documents between 2009 and 2026, illustrating input from workshop attendees.

Committee members expressed support to continue their collaboration with more frequent joint events.

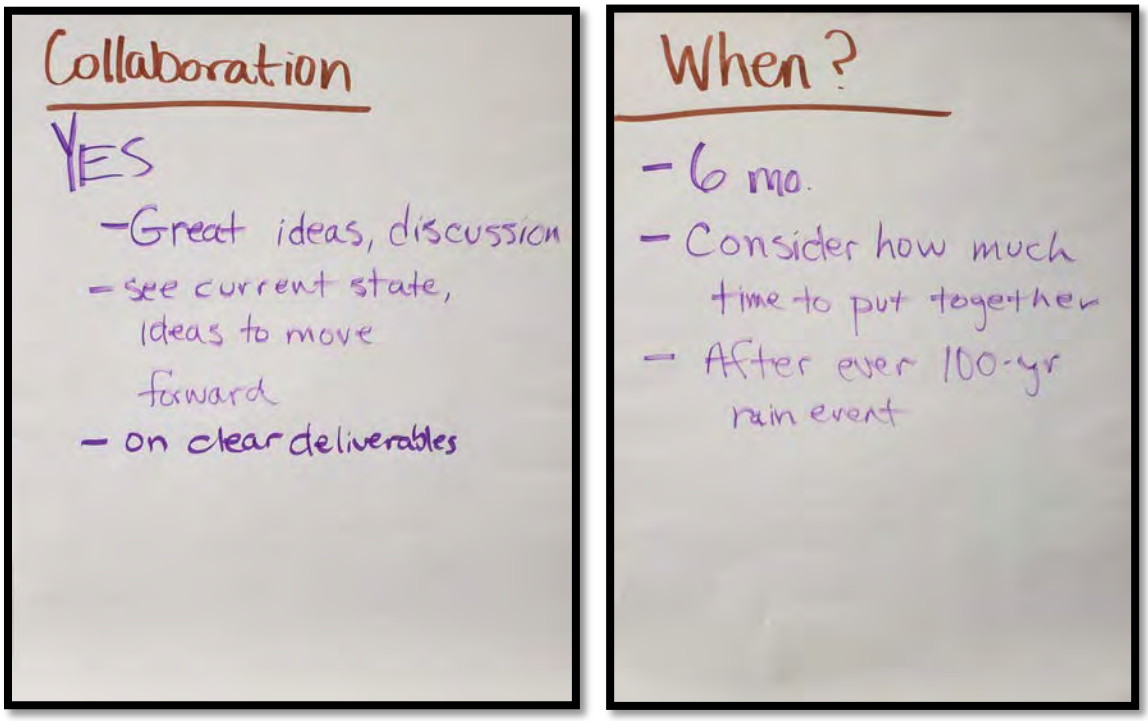

Figure 10. Posters of committee members' input regarding interest in and timing of continued collaboration.

Phil Belfiori requested that committee members participate in a survey, and staff committed to follow up after the meeting with more information. On December 6, 2019, the following email was sent to all committee members:

Follow-up

State Water Plan 2020 Survey

As discussed at our meeting in October, the 2020 State Water Plan is a project of Minnesota State Government to present a clear vision for water action in the coming decade in the face of climate change. You may recall we mentioned that a survey would be prepared for you to take related to the State Water Plan. The purpose of this survey is to gather input from Minnesota water professionals about how to address the impacts of climate change on waters in your community and across the State. The survey is now ready to go. We need your input.

Access the survey: *http://survey.mn.gov/s.asp?k=157080674278.* We appreciate your input! The survey is open until January 15, 2020.

In an attempt to reach a large number of water professionals, there may be some duplicative emails sent related to this survey. Thank you in advance for your understanding. Please feel free to send this survey to others in your organization that you believe may have an interest in this issue area.

If you have any questions about this survey or the 2020 State Water Plan please contact Phil Belfiori at *phil.belfiori@state.mn.us* or 651-757-2082.

Appendix 1: Small Group Discussion Notes

12/5/19 Special Joint Workshop of LUAC/ MAWSAC-TAC

Fifteen LUAC, MAWSAC, TAC and senior Council staff members who participated in small group discussions shared their written notes with Council staff.

Committee members and Council staff shared the following perspectives:

- Regulatory agencies (responsible for areas such as Class 1 standards, mapping groundwater contamination, etc.)
- Policy makers such as city council members
- Planners (comprehensive, wellhead, water supply, surface water management)
- Property owners
- Water utilities

Committee members identified several topics they would be interested in knowing more about, and they provided specific questions to shape that discussion.

The ideas compiled below illustrate their combined perspectives. The comments below include some editing for spelling, abbreviations, sentence fragments, etc.

General questions/comments

- What are the questions that need to be answered to provide a complete big picture of water in our region that will help us prioritize the work to achieve the vision?
    - Stormwater
    - Groundwater
    - Surface water
    - Drinking water
    - Wastewater

Which of your individual roles and responsibilities shape how you think about these topics?

1. **Committee member roles/responsibilities related to water supply-related data and trends in local comprehensive plans:**
    - Responsible for Class 1 standards – source water protection
    - Role in One Watershed One Plan (1W1P) and similar work
    - City council member – policy maker
    - Role in collaboration agreements
    - Responsible for wellhead protection plan updates
    - Responsible for water supply plan updates
    - Responsible for comprehensive water and sewer system plan updates
    - Responsible for surface water management plan updates
    - Participated in planning at both local and regional levels – sometimes different agencies are working at cross purposes
    - Yard/yard work management
    - Managing a water utility
    - Managing public infrastructure assets
2. **Committee member roles/responsibilities related to toolbox to support more effective drinking water source protection**
    - MPCA working on mapping groundwater contamination, which might help with “right here”
    - Managing water supplies
    - Community education (a need acknowledged my most communities in the country)
    - Yard/yard work management such as small rain gardens
    - Administering wellhead protection plan
3. **Committee member roles/responsibilities related to regional climate vulnerability assessment water supply chapter**
    - MPCA groundwater monitoring and chloride emphasis
    - Representing watershed management organizations
    - City engineer responsible for stormwater management, including municipal stormwater (MS4) permits

What do you want to learn more about?

1. **Committee members want to know the following about water supply-related data and trends in local comprehensive plans:**
    - Sharing data
    - How to present the data? Need dashboard, story map to interpret
    - How are past practices currently inhibiting our ability to make changes?
    - What is the long-term regional sustainability of groundwater?
    - Define thresholds for sustainability regarding supply and demand
    - Does one per capita goal make sense?
    - Aquifer trends
    - What level of government has most direct oversight/influence on water policy?

- What information is available on how to get decision makers to know more?
- What information is policy/planning relevant?
- Do we have an emergency management plan for the region or the state?
- How do local water plans (like 1W1P) get linked with land use plans? Can decision makers think about the issues/stressors in the plans?
- Why is wellhead protection separate? Should it be?
- If 110 communities “discuss” groundwater, is that good enough?
- How land use can balance demand, i.e. limiting new usage of high demand to balance usage regionally?
- Require incorporated land use factors in water demand projections for regional approach to preservation and sustainability
- What are the current and mid- to long-term impacts of closed and active landfills on top of or near aquifers? For example, there are closed, unlined landfills and active, lined/capped landfills near the water supply in Burnsville. What is the longevity of liners and caps?
- Methodologies for computing projected water demand
- Private wells
- Do any cities have private Homeowners Association (HOA) rules that are detrimental to water conservation?
- Do we track water usage of treated brown water vs. fresh water sources?
- Are there goals to use more brown water over fresh water?
- How can we track water use to equity?
- Low income neighborhoods use vs. higher, etc.
- Interconnections – need a better map and analysis which communities are at risk
- What cities don’t have interconnections in their water supply system and why?

2. **Committee members want to know the following about a toolbox to support more effective drinking water source protection**

- Is there a need for a regional water emergency plan?
- Should we have a plan in place to either share or defend our water in the event of an emergency?
- What level of government can impact water policy? Suggested policy considerations at each level of government.
- What is the ultimate goal? Is this for public consumption or educational purposes?
- Tools are for fixing a building. Need to be clear what the tool is for.
- How is drinking water source protection different from wellhead protection?
- What are emerging contaminants? Is there a database that is updated frequently?
- What quality updates
- Water usage per neighborhood
- How are others protecting their water supply systems?
- Can the toolkit include historical data that could help influencers understand the big picture trends and challenges?
- Could it include public service activity recommendations to help the public understand individual roles?
- Chlorides – does the toolbox reach high/far enough to correlate with local government salt/winter maintenance policies?

- The presentation didn't provide much information, so it was hard to react

3. **Committee members want to know the following about the regional climate vulnerability assessment water supply chapter:**
    - What is the impact of drought?
    - What is the trendline for mega-events, because rainfall standards (TP40 and Atlas 14) need to be updated. When?
    - What impact to groundwater quality is experienced after flooding?
    - How does changing precipitation change pollutant (especially chloride) movement through aquifers?
    - How could we create man-made reservoirs to capture rainwater?
    - What other factors are contributing to flood prone areas that could be addressed with land use and practice changes?
    - How can cities "build" wetlands to mitigate flood damage?
    - How can zoning/design standards be re-hashed to encourage more durability and resilience to the built environment?

What would add value to this work?

1. **Value could be added to water supply-related data and trends in local comprehensive plans by:**
    - Effectively "on-boarding" new elected folks with land use/water use/quality information
    - Disseminating collective information to "1-water" impacted communities
    - Maybe documenting some direct experience, such as local decisions that considered local water plans and info (especially land use)
    - Modeling
    - Sharing previous cases in the region
    - Connecting with professionals in the industry who can speak to quality and lifespan of landfill liner and cap materials
    - Consider who has access to data and how it could be used against those most vulnerable.
    - More collaboration across organizations
    - Better availability of data
    - Update well rules, if needed
    - Looking again at DNR requirements for water conservation when new wells are permitted; some of the requirements – like even/odd watering – can cause higher water use
    - More guidance from Met Council on how to estimate future water demand
    - Exploring what other land use concerns, beyond population growth, need to be taken into consideration
    - Conformity in projecting future water demand

2. **Value could be added to the toolbox to support more effective drinking water source protection by:**
    - Identifying where are there gaps
    - Getting input from city council members, etc.
    - Reaching a full range of water users – knowing how to do that effectively
    - Met Council providing regional water use statistics for comparisons amongst communities

- Using plain language, if it's for the public
- Neighboring communities using the tool together
- Providing access to data/information
- Include immigrant communities – need to provide a trusted person within the community with awareness and information to share
- Collaborating with rural areas
- Helping people understand what water softeners do to water when it goes back into the system
- Addressing how to get people to care
- Looking at land use up front in planning versus reactive
- Recognition from MDH
- The topic of a drinking water protection guidance toolbox didn't seem to have a lot of value here

3. **Value could be added to the regional climate vulnerability assessment water supply chapter by:**

    - Addressing water quality (groundwater and surface water)
    - Exploring the money needed to address issues – what would it take?
    - Considering how to use the frequency of weather events to plan for future events
    - Including a toolbox of flooding mitigation options/opportunities

How to improve this effort or extend its reach?

1. **Analysis of water supply-related data and trends in local comprehensive plans could be improved or the reach extended by:**

    - Identifying if there is common missing data (gaps) that Met Council or state agencies could fill that would improve plans?
    - Including education and case studies
    - Addressing aquifer well recovery
    - Identifying where our aquifers are most vulnerable and how we can do better protecting them
    - Sharing the data with communities to create opportunities to learn from each other
    - Sharing data with communities and show where they stand within the data
    - Sharing ways to conserve or reduce average residential water usage that has reduced the usage in the lowest communities
    - Consider changing efficiency measures that may not work (example: even/odd day watering) required by DNR groundwater appropriation
    - Requiring conservation measure on private wells, too
    - Informing consideration of State rules, which have not kept up with what we know about water supply
    - Addressing irrigation improvement, which is still a priority. For example, can Homeowners Associations (HOAs) help share better ways or allow more?
    - Including a look at whether fixing service laterals (wastewater system) would increase recharge of the aquifers
    - Bringing Clean Water Fund into this discussion

2. **A toolbox to support more effective drinking water source protection could be improved or the reach extended by:**

    - Connecting to developers: could be useful to aid decision making

- Connecting to realtors
- Growing/encouraging champions
- Encouraging easy access
- Considering all users/different needs
- Getting the attention of individuals who need to learn how to be proactive with the protection of our water resources? How can we do this?
- Looking at some of the emerging issues at an individual level they can support
- Coordinating parts of data collection and analysis between DNR and Met Council?
- Sharing communities' water quality results with the community in layman's terms
- Probably could have waited on this one until there was more information to share

3. **The regional climate vulnerability assessment water supply chapter could be improved or the reach extended by:**

- Not using the word "system" for water supply
- Identifying how to get local planning committees to consider this during land use planning

State Water Plan

1. **How prepared is your community to address the potential impacts of climate change on Minnesota's water resources?**

- We have addressed this through our comp plan and our various management plans
- That's a good question

2. **How concerned are you about the effects from climate change on water issues in your community/the community you serve?**

- We have strong plans in place to protect our resources

If you are concerned, what do you see as the biggest challenge related to the impacts of climate on water resources?

o We do have gaps in flood impacts in our community that need to be addressed.

3. **Which aspects of climate change do your planning efforts address?**

- Flooding
- Inflow and infiltration

4. **Have you encountered any barriers or hurdles related to water resource planning in the context of climate change?**

- Private property inflow and infiltration

5. **What kind of resources or assistance would be most helpful to your organization to make progress on actions?**

- Financial and planning resources for communities or groups of communities that are facing unique, major challenges that they can't solve alone

APPENDIX 2: PHOTOS OF GROUP QUESTIONS

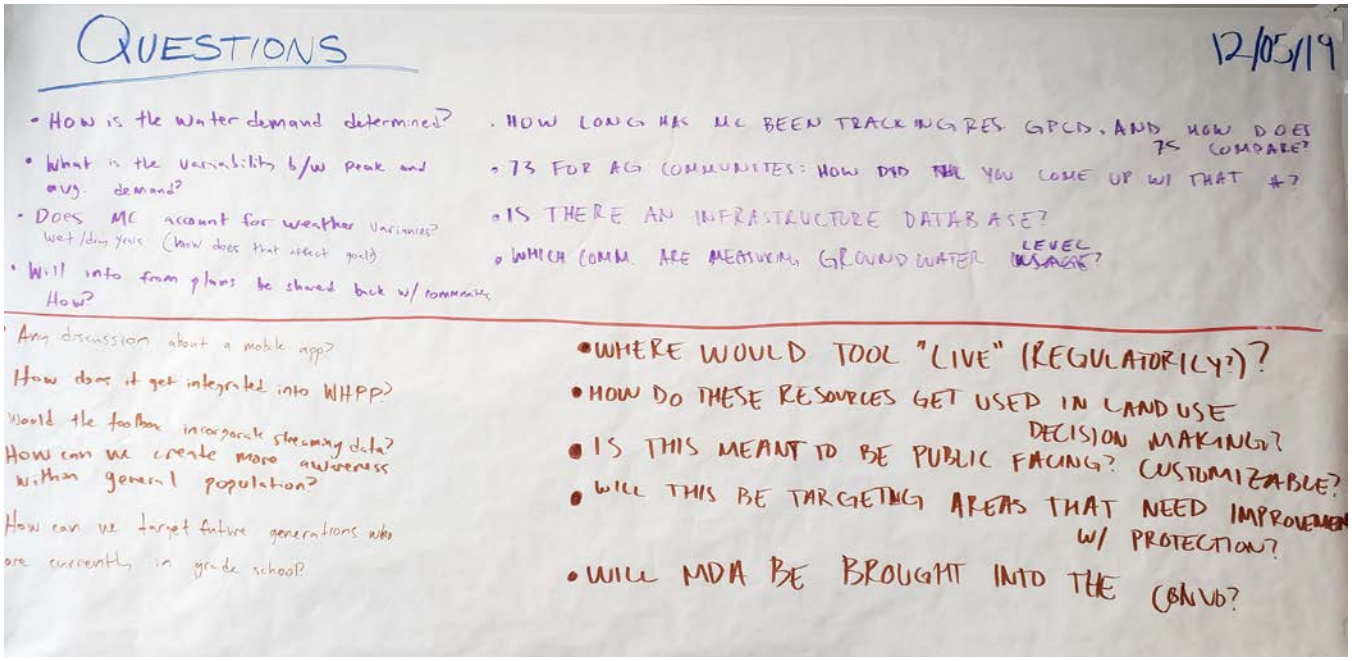

Figure 11. Committee member questions about the presentations on water supply data and trends and the drinking water protection guidance toolbox.

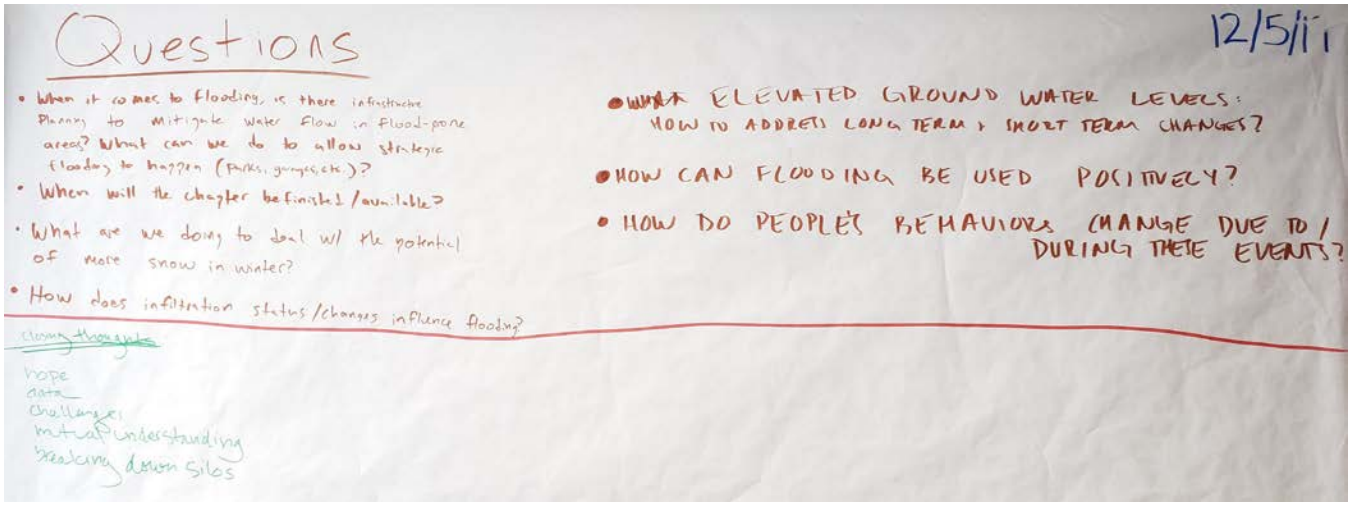

Figure 12. Committee member questions about the presentation on the Climate Vulnerability Assessment: Water Supply chapter.

390 Robert Street North
Saint Paul, MN 55101-1805

651.602.1000
TTY 651.291.0904
public.info@metc.state.mn.us
metrocouncil.org

Follow us on:
twitter.com/metcouncilnews
facebook.com/MetropolitanCouncil
youtube.com/MetropolitanCouncil