Information Item

Joint Meeting of the Metropolitan Area Water Supply Advisory Committee and the Water Supply Technical Advisory Committee

METROPOLITAN COUNCIL

Meeting Date: December 11, 2024

Topic

Scoping Projects to Implement MWSP and Support Local Planning - Survey Results

District(s), Member(s):	All
Policy/Legal Reference:	Minnesota Statute 473.1565
Staff Prepared/Presented:	Greg Johnson, Principal Engineer, 651-602-1016
Division/Department:	Environmental Services, Water Resources

Background

Input from MAWSAC and TAC was requested at the joint MAWSAC-TAC meeting on October 23, 2024 to help prioritize potential water supply projects to shape how the Council does its water supply planning and implementation work over the coming years. A survey was sent to all MAWSAC and TAC members to request input on 22 potential region-wide water supply studies which emerged from stakeholder engagement around the Metro Area Water Supply Plan update. The survey asked respondents to think about the potential studies shared at the joint MAWSAC-TAC meeting and share their opinions about:

1. Does this project give your organization useful information?
2. Is this important for the success of the Metro Area Water Supply Plan?
3. When would it be most useful to have this information?
4. Please share references and contact details for past projects and studies that should be referenced for this new project or study.

The survey was not intended to include the complete list of potential studies, but it reflected ideas that have emerged through the update of the Metro Area Water Supply Plan including its subregional sections. Projects are expected to evolve as work gets underway and stakeholder engagement continues.

Respondents were asked to keep the following milestones in mind when responding about when it would be most useful to have the study information:

- **2025** - Communities will receive system statements with information to update their local comprehensive plans
- **2027** - MAWSAC will report to the Legislature about water supply work: 'State of the Region's Water Supply'
- **2028** - Deadline for communities to submit updated comprehensive plans to Met Council
- **2030** - Met Council will report to the Legislature about water supply work; U.S. Census
- **2032-2033** - Aim to wrap up policy research to inform regional water plan updates
- **2034** - Clean Water Fund expires; stakeholder engagement needed to update regional policies and plans

- **2035** - MAWSAC will approve the updated Metro Area Water Supply Plan

Potential Project Ranking

The following potential project ranking was done to support MAWSAC and TAC discussion at their joint December 11, 2024 meeting. These results are not intended to be final decisions regarding potential projects.

The potential projects were grouped by the four categories of regional actions that are identified in Table 3.2 of the Metro Area Water Supply Plan. Within each group, the potential projects were then ranked based on the survey results for the questions "*Does this give your organization useful information*?" and "*Is this important for the success of the MWSP?"*. The percentage of "Yes, definitely" was weighted with 25% more value than the "Sort of" responses. The values of "Yes, definitely" and "Sort of" were then summed for each potential project. The potential projects were then ranked from highest to lowest based on the scoring methodology used for the survey results. The ranked potential projects are listed below, including the respondents' opinions of when it would be most useful to have this information.

Collaboration and capacity building potential projects

1. Infrastructure Water Supply Needs, preferably done around 2025-2027
2. Groundwater Elevations Database Coordination with MN Natural Resources, preferably done around 2025-2027
3. Treatment Technologies and Costs to Address Multiple Contaminants, which could be done anytime with a slight preference for 2025-2027
4. Regional Assessment of Aging Water Infrastructure, preferably done around 2025-2027
5. Water and Wastewater Reuse Potential, which could be done anytime with a slight preference for 2025-2027
6. Framework for Coordinated Multi-Community Wellhead Protection and Land Use Planning, which could be done anytime with a slight preference for 2028-2030
7. One-Water Potential and Benefits, which could be done anytime with a slight preference for 2031-2033
8. Nitrate Study, which could be done anytime with a slight preference for 2034-2036
9. Partnering on Multi-Community Water Supply Emergency Response Exercises, which could be done anytime with a slight preference for 2034-2036

System assessment potential projects

1. Groundwater-Surface Water Interaction Effects and Impacts, which could be done anytime with a slight preference for 2028-2030
2. Regional Groundwater Model Update – Water Balance, preferably done around 2025-2027
3. Long-term Analysis: Groundwater Capacity, Resource Limitation, Vulnerability, and Growth, which could be done anytime with a slight preference for 2028-2030
4. Long-Term Effects of Climate Change on Water Supplies, which could be done anytime with a slight preference for 2025-2027
5. Potential Groundwater Impacts from Future Large Industrial Users, which could be done anytime with a slight preference for 2028-2030
6. Historical Water Use Database, which could be done anytime with a slight preference for 2025-2027
7. Privately-owned Wells: Groundwater Quality Analysis and Future Considerations, which could be done anytime with a slight preference for 2028-2030

Mitigation measure evaluation potential projects

1. Potential Water Savings by Sustainable and Water Efficient Irrigation Systems, which could

be done anytime with a slight preference for 2028-2030

2. Unaccounted for Water Analysis and Potential Savings, which could be done anytime with a slight preference for 2028-2030

Planning and implementation potential projects

1. Local Planning Handbook Content Regarding Water Supply, preferably done around 2025-2027
2. Guidance for Funding Opportunities to Support Local Plan Implementation, which could be done anytime with a preference for 2028-2030
3. PlanIt Programming Regarding Water Supply, preferably done around 2025-2027
4. System Statement Content Regarding Water Supply, which could be done anytime with a slight preference for 2031-2033

Overall potential project ranking

Looking at all 22 of the potential projects, these five were ranked highest overall regardless of timeframe:

1. Groundwater-Surface Water Interaction Effects and Impacts
2. Regional Groundwater Model Update - Water Balance
3. Infrastructure Water Supply Needs
4. Long-term Analysis: Groundwater Capacity, Resource Limitation, Vulnerability, and Growth
5. Groundwater Elevations Database Coordination with MN Natural Resources

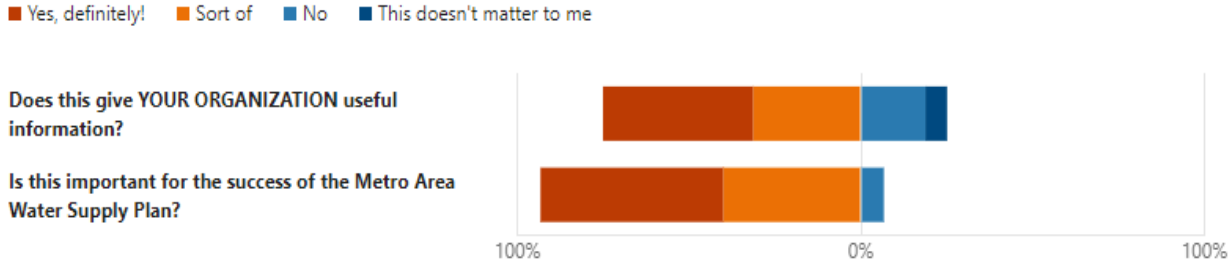
The following potential projects were ranked as follows:

6. Potential Water Savings by Sustainable and Water Efficient Irrigation Systems
7. Long-Term Effects of Climate Change on Water Supplies
8. Treatment Technologies and Costs to Address Multiple Contaminants
9. Regional Assessment of Aging Water Infrastructure
10. Water and Wastewater Reuse Potential
11. Potential Groundwater Impacts from Future Large Industrial Users
12. Local Planning Handbook Content Regarding Water Supply
13. Historical Water Use Database
14. Framework for Coordinated Multi-Community Wellhead Protection and Land Use Planning
15. Guidance for Funding Opportunities to Support Local Plan Implementation
16. Unaccounted for Water Analysis and Potential Savings
17. One-Water Potential and Benefits
18. Nitrate Study
19. Partnering on Mult-Community Water Supply Emergency Response Exercises
20. PlanIt Programming Regarding Water Supply
21. System Statement Content Regarding Water Supply
22. Privately-owned Wells: Groundwater Quality Analysis and Future Considerations

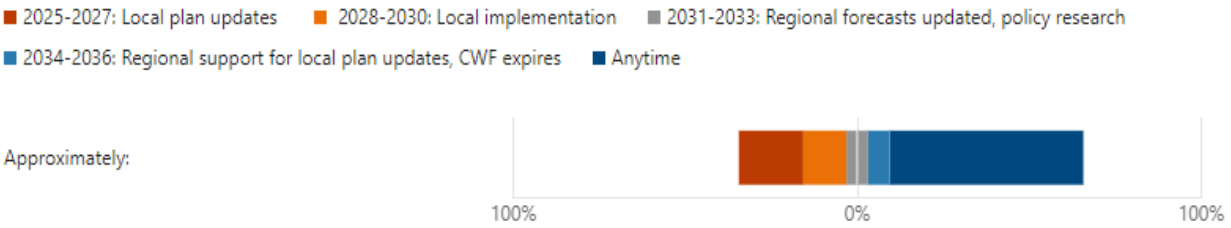
Detailed Survey Results

The following survey results were obtained for each of the potential 22 studies. Twenty people responded to the survey - seven MAWSAC members and thirteen TAC members.

1. **Water and Wastewater Reuse Potential and Analysis** - This project may include assessing and comparing the benefits, costs, and feasibility of reusing wastewater for different high-volume industrial, agricultural, and/or other commercial purposes. Stormwater reuse would be addressed as a separate study.



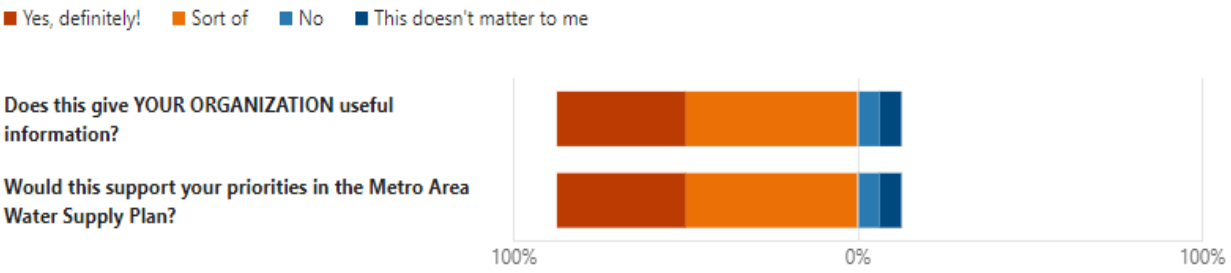
When would be most useful to have this information?



Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	https://www.pca.state.mn.us/sites/default/files/wq-wwr1-01.pdf
2	anonymous	Would be nice to have this info for consideration for the data center projects.
3	anonymous	jdustman@summite.com
4	anonymous	The plan needs to continue to review water conservation and stewardship opportunities at all times.
5	anonymous	Anita Anderson, MDH

2. **Regional Assessment of Aging Water Infrastructure and Grading** - This project may include developing a regionally-focused water supply report card along the lines of and tapping into data developed for the American Society of Civil Engineers' Report Card for Minnesota's Infrastructure. This information could support education campaigns, legislative requests, and future work planning.



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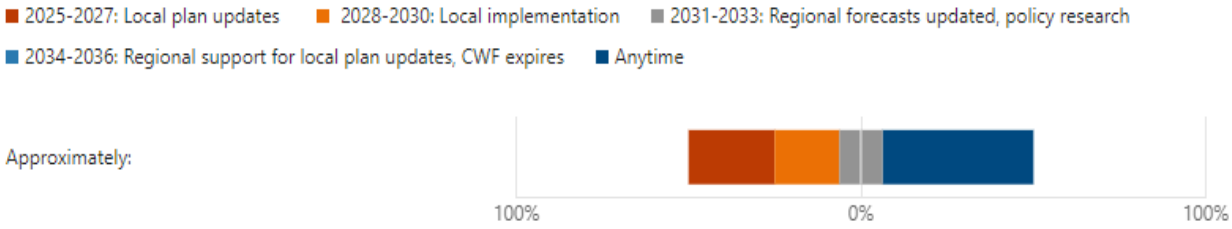
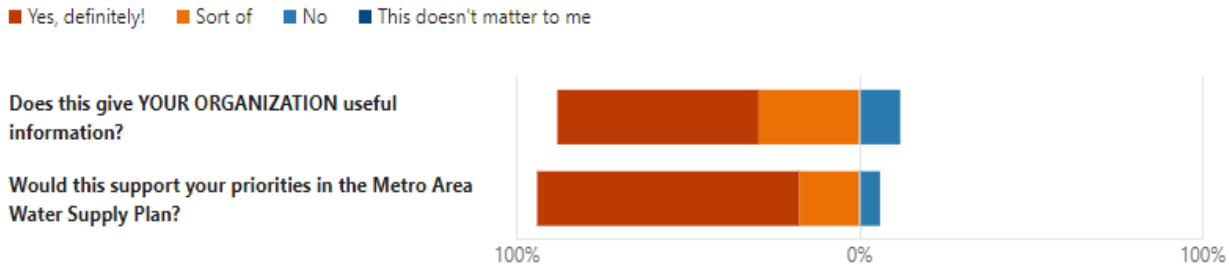


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	State of the Water Industry Report (AWWA 2024)
2	anonymous	Chad Kolstad, MDH
3	anonymous	Possible coordination with the new MACI council?

3. **Infrastructure Water Supply Needs** - This project may include evaluating existing well firm capacities across the metro region with respect to 2050 maximum day water demand projections. This information could support regional groundwater modeling analyses.



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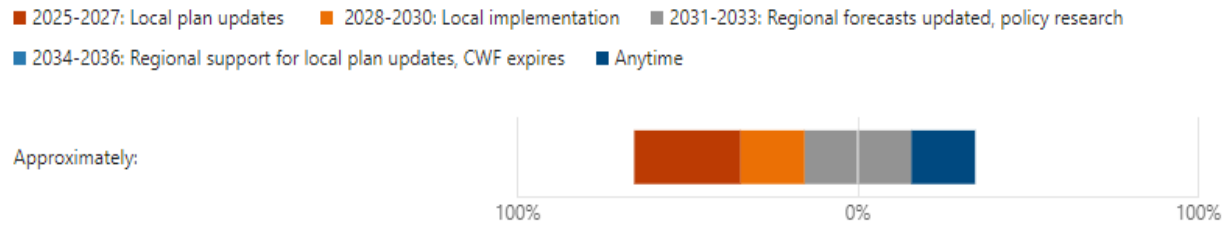
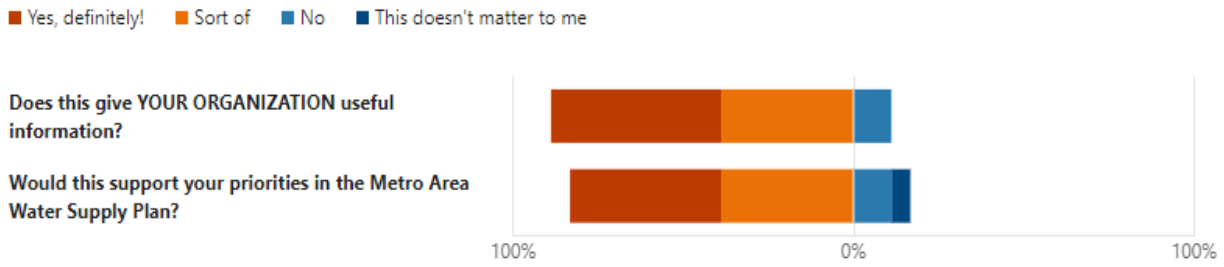


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	Steve Robertson, MDH

4. **Treatment Technologies and Costs to Address Multiple Contaminants** - This project may include a planning-level assessment and comparison of different water supply treatment technologies to understand their feasibility, costs, and if they provide multiple benefits. For instance, some treatment options could address multiple water quality

parameters simultaneously and provide additional benefits like reducing water hardness, which in turn lowers chloride levels in wastewater and receiving waters.



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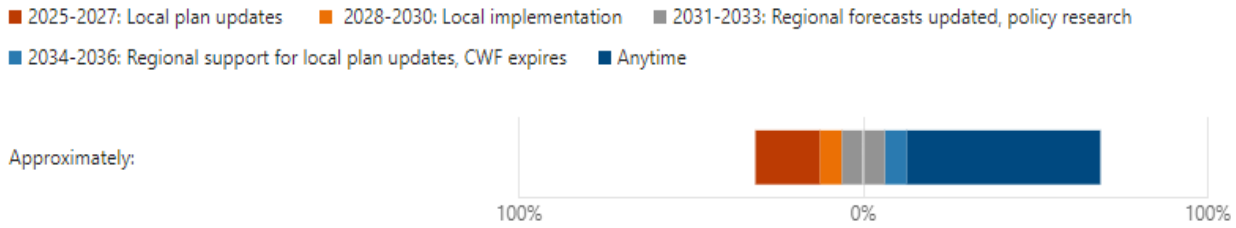
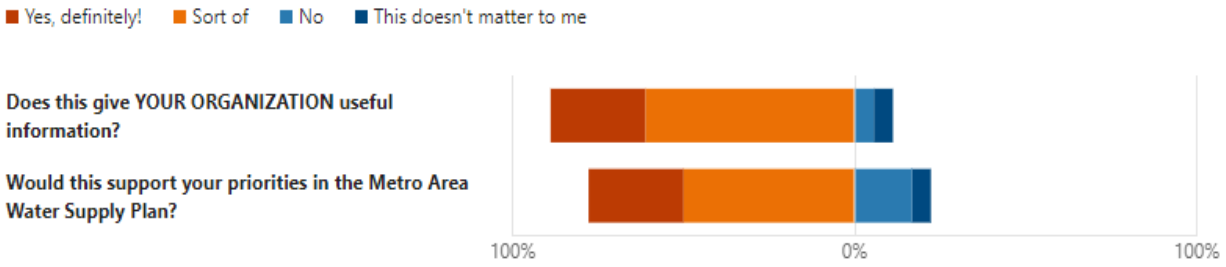


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	Too broad as described - identify specific contaminant(s) of emerging concern to be addressed. Sufficient research by universities and Water Research Foundation for feasibility of treatment techniques and water quality benefit documentation. With specific contaminant identified, a scalable unit cost estimate for capital and long-term O&M costs specific to the metro region would help individual utilities' long-term capital planning.
2	anonymous	I do not believe this is something that Met Council should be doing.
3	anonymous	jdustman@summite.com
4	anonymous	Karla Peterson, MDH
5	anonymous	May need to reconsider value on this one as it pertains to existing treatment plants and systems. System-specific needs might not be captured in a planning-level exercise like this.

5. **One Water Potential and Benefits** - This project may include development of a Twin Cities metro region-specific set of assessment metrics and guidance documents to assess progress toward One Water (integrated water management) in our region and its potential long-term benefits. This may tap into recent work done by organizations such as the Water Research Foundation.



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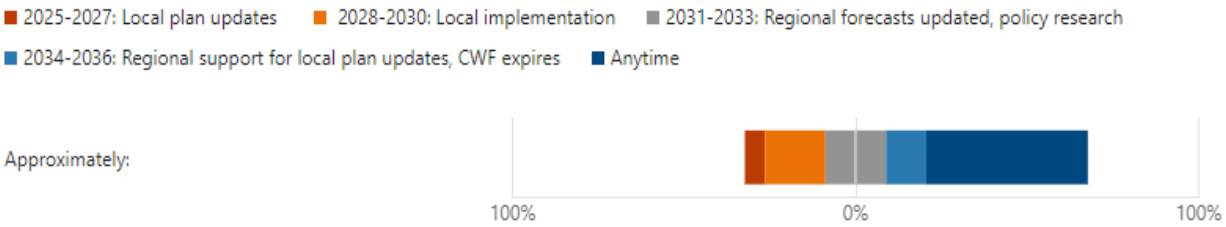
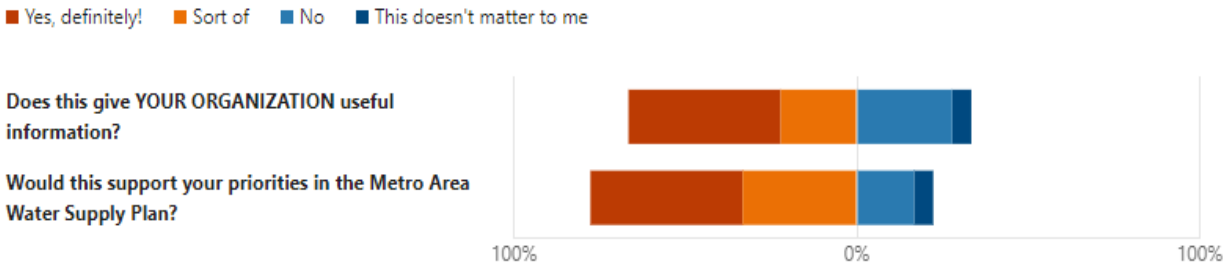


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	https://uswateralliance.org/leading-on-regional-one-water-partnerships/
2	anonymous	One size does not fit all. Each community and geographic area will have different concerns and approaches to tackling water needs.
3	anonymous	Karla Peterson, MDH

6. **Nitrate Study** - This project may include collaboration with Minnesota's Pollution Control Agency and Departments of Agriculture and Health (MPCA, MDA, MDH) to develop a summary of current conditions and trends in nitrate for the entire Twin Cities metro region. This information could support education campaigns, legislative requests, and future work planning.



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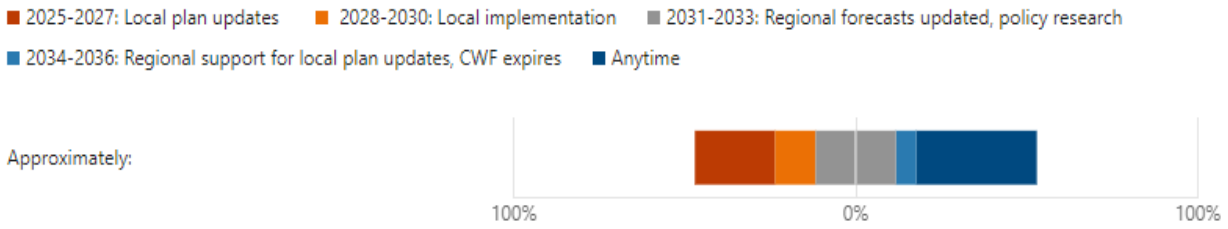
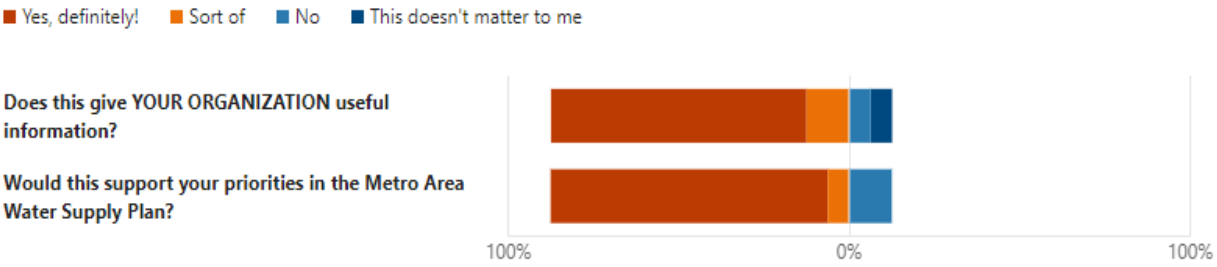


Past projects or people to reference

Responses
https://www.health.state.mn.us/communities/environment/water/contaminants/nitrate.html
This is something better performed by MPCA and MDA
There is a lot of work on this already. Dakota County nitrate studies can be found: https://www.co.dakota.mn.us/Environment/WaterResources/WellsDrinkingWater/Pages/drinking-water-studies.aspx
jdustman@summite.com
Karla Peterson, MDH

7. **Groundwater Elevations Database Coordination with MN Natural Resources Department (DNR)** - This project may include Met Council and DNR collaboration to evaluate the existing groundwater level monitoring network in the Twin Cities metro region and identify enhancements that would better support evolving questions around groundwater and surface water interaction, long-term trends in declining groundwater levels in aquifers, climate change impacts, and land use change impacts.



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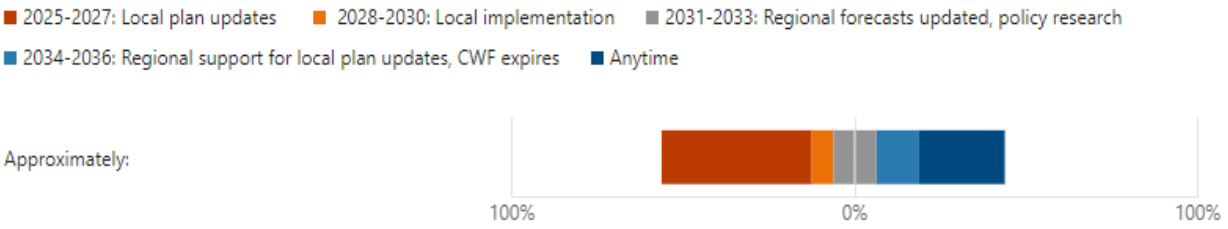
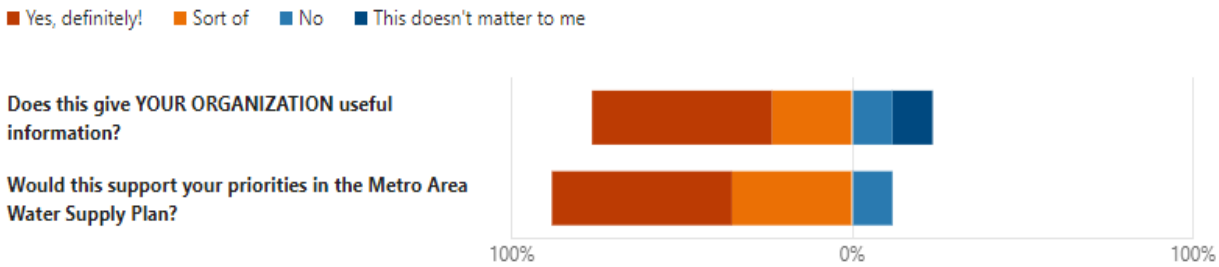


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	This is a something being done already by MDH, MGS, and DNR
2	anonymous	Groundwater Restoration and Protection Studies (GRAPs) studies and Geologic Atlas's
3	anonymous	www.aquimetrics.com
4	anonymous	Steve Robertson, MDH

8. **Framework for Coordinated Multi-Community Wellhead Protection and Land Use Planning** - This project may include Met Council, communities, and MDH collaboration to build on the current wellhead protection plan pilot project in the west metro that includes multiple neighboring communities and finalize a framework for future wellhead and land use plan updates.



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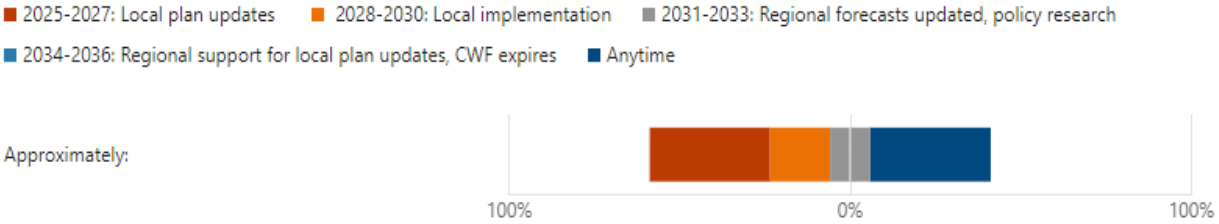
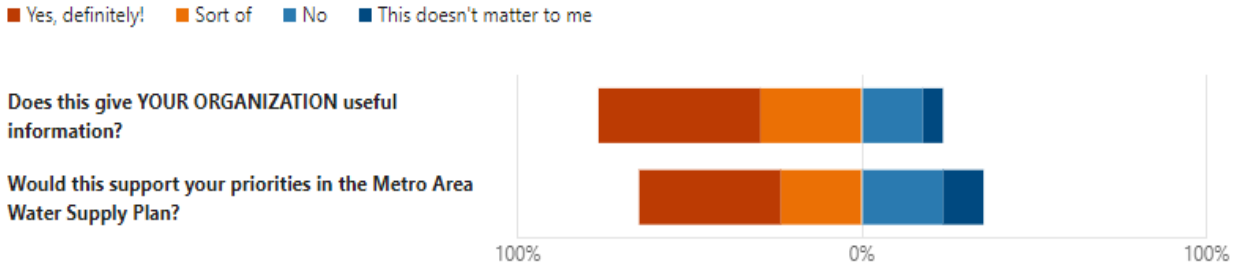


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	This is an important effort that has been implemented on a pilot basis. It makes no sense at all to continue to treat individual community WHPAs and DWSMAs separate from adjacent communities. In fact, it probably makes sense to do this either in a 3-region approach in the Metro area or the entire metro area together.
2	anonymous	jdustman@summite.com
3	anonymous	Steve Robertson, MDH

9. **Partnering on Multi-community Water Supply Emergency Response Exercises** - This project may include partnering with organizations such as MDH, the U.S. Environmental

Protection Agency (EPA), the American Water Works Association (AWWA), and MnWARN to offer regular multi-community training events to support emergency response, build a skilled workforce, and support strong relationships among neighboring water utilities.



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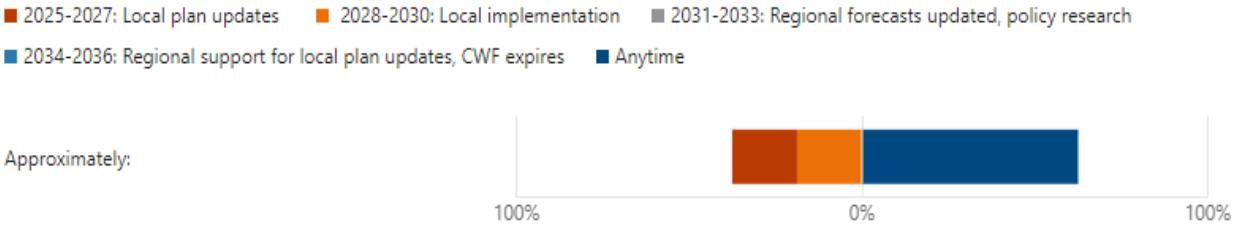
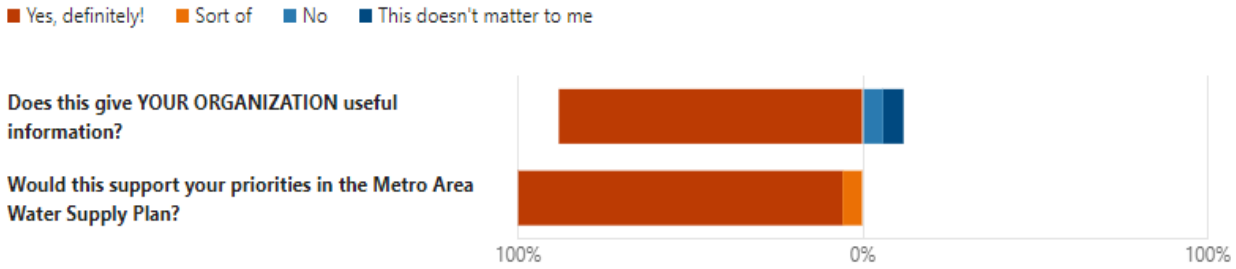


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	I do not think Met Council needs to have a part in this effort. Other associations and agencies are already effective.
2	anonymous	Include regional/county LEPCs. America's Water Infrastructure Act's (AWIA) Emergency Response Plan requirements are that community water systems shall to the extent possible coordinate with local emergency planning committees established under the Emergency Planning and Community Right-To-Know Act of 1986 when preparing or revising an assessment or emergency response plan under the AWIA. Further, systems must update and revise their ERPs every five years.
3	anonymous	Lucas Hoffman, MDH

10. **Regional Groundwater Model Update – Water Balance** - This project may include updating the regional groundwater model to incorporate up-to-date data in ways that address evolving planning questions such as land use impacts on recharge, a range of water demand scenarios and related impacts on groundwater levels, groundwater and surface water interactions, and subregional water supply planning questions. This information could support education campaigns, future regional policy, and future work planning.



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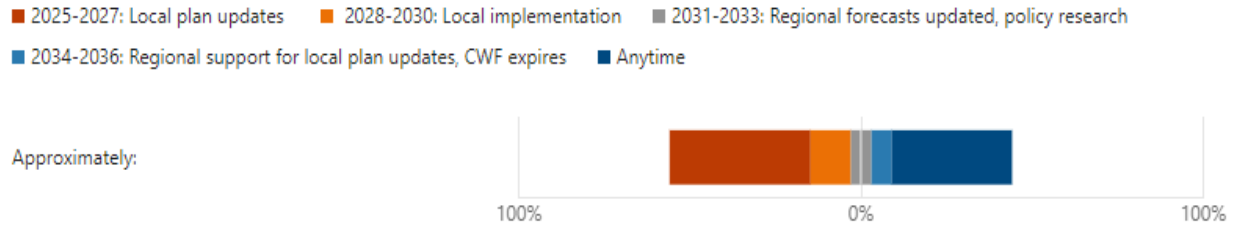
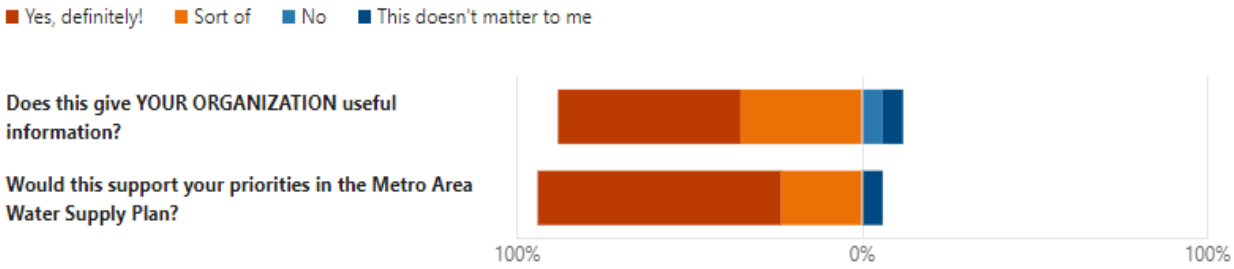


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	It is important to remember that much of the aquifer recharge for the Metro area is occurring outside of the Metro Area. This is shown because the aquifers are protected and often artesian within the Metro. Any local recharge would make the aquifer a "Ground Water under the direct influence of Surface Water" which is not compatible with the level of drinking water treatment that the majority of Cities provide.
2	anonymous	Let's get the model updated to MODFLOW 6 - and lets get the flow model linked with an HSPF surface water model.
3	anonymous	#1 need, along with an independent entity charged with keeping the model up to date and conducting scenario analyses and provide objective results to agencies.
4	anonymous	jdustman@summite.com
5	anonymous	Steve Robertson, MDH

11. **Long-term Analysis: Groundwater Capacity, Resource Limitation, Vulnerability for Growth** - This project may include using the updated regional groundwater model to explore how different limits on aquifer declines, baseflow reductions, or flow direction changes might affect the amount of groundwater that can be sustainably pumped in the region and different subregions. This may build on past modeling approaches such as the optimization modeling approach used in the 2015 Master Water Supply Plan.



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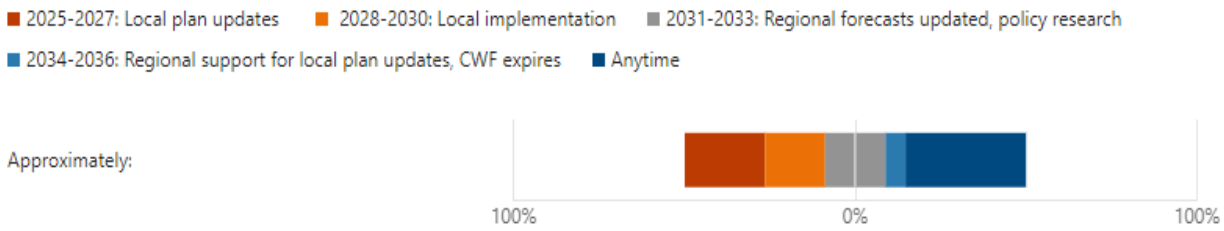
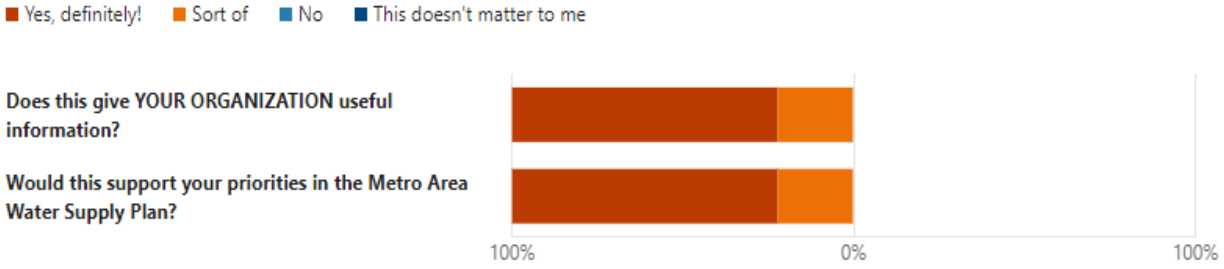


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	This kind of study is always problematic because it lacks specificity on well pumping rates, locations etc.
2	anonymous	jdustman@summite.com
3	anonymous	Steve Robertson, MDH

12. **Groundwater-Surface Water Interaction Effects and Impacts** - The interaction between groundwater and surface water bodies is a key factor in several water-related permit decisions, source water protection, surface feature sustainability (quality and quantity), and stormwater management. This project may include mapping and recommendations for monitoring and technical assistance for best management practices.



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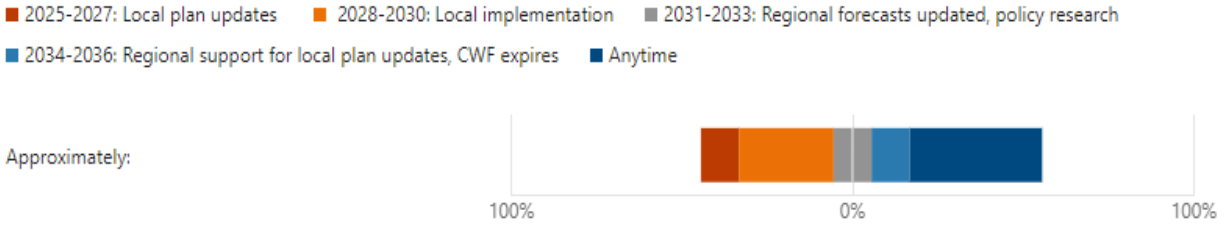
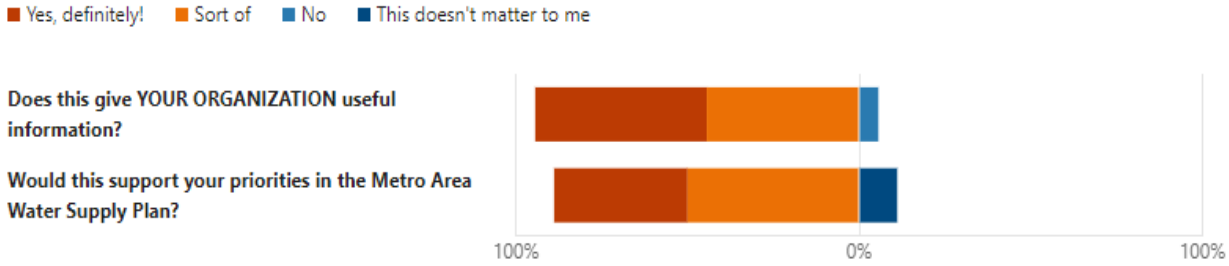


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	Great success are happening outside of the metro area linking MODFLOW6 to HSPF. This should be the track forward because HSPF is grid based.
2	anonymous	jdustman@summite.com
3	anonymous	Steve Robertson, MDH

13. **Long-Term Effects of Climate Change on Water Supplies** - This project may include collaboration with state climate modelers and biologists to explore a range of climate scenarios including impacts on snowpack, soil frost, growing season irrigation, and other changes. This information could support groundwater modeling, water efficiency programs, and future work planning.



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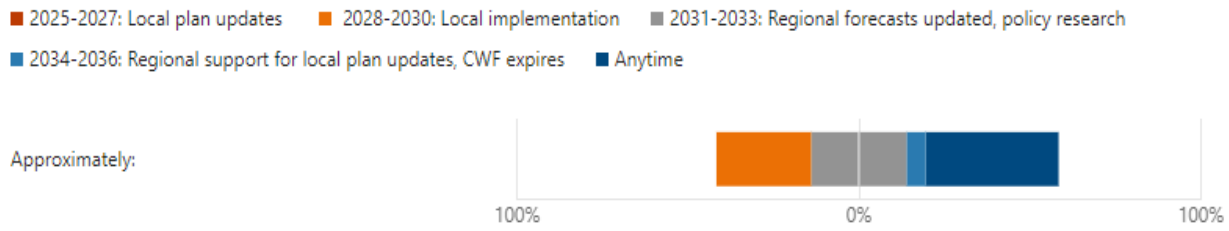
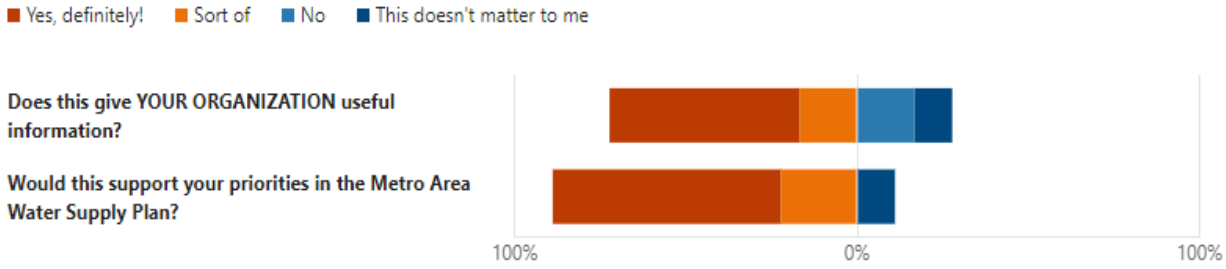


Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	The issue of downscaling and multiple climate models still needs to be resolved and it does not obviate the need to do an uncertainty evaluation for forward forecasting
2	anonymous	Derek Richter, MDH

14. **Potential Groundwater Impacts from Future Large Industrial Users** - This project may include research to estimate potential water demands by emerging industries (such as data centers, large dairies, urban agriculture, or others) in the metro region and use of the updated regional groundwater flow model to estimate potential impacts on the region's groundwater.



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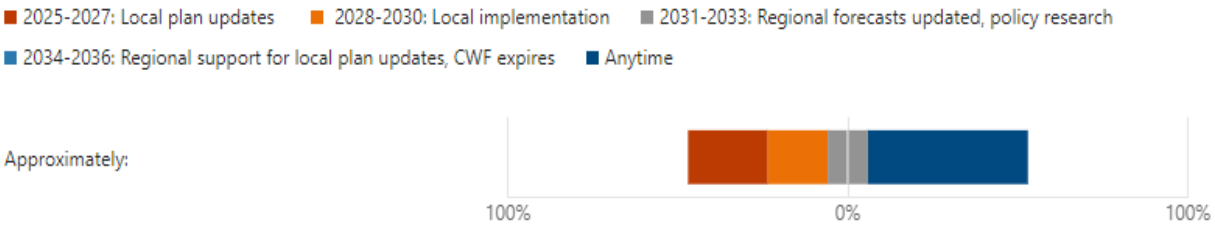
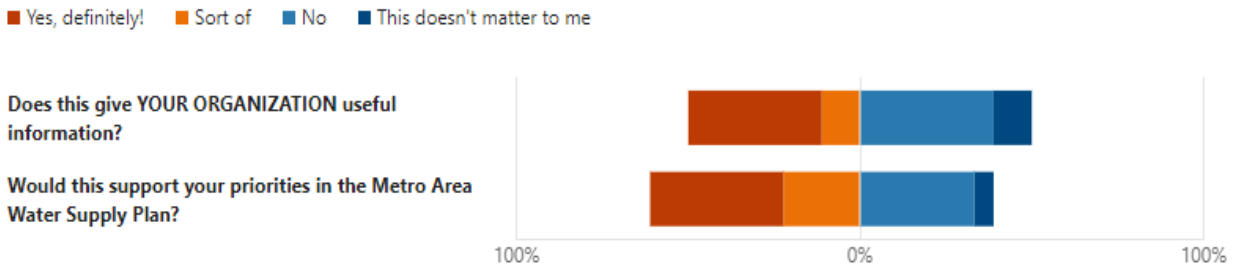


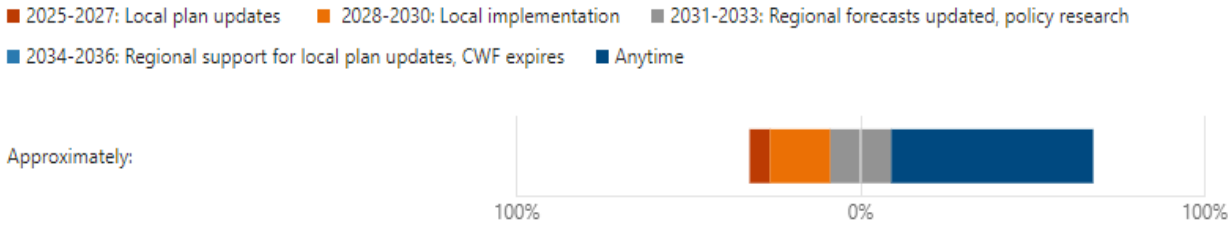
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	This needs to be evaluated on a case-by-case basis and should be on mostly by DNR
2	anonymous	Too broad and general, wouldn't result in actionable information.
3	anonymous	jdustman@summite.com
4	anonymous	Steve Robertson, MDH

15. **Privately-owned Wells: Groundwater Quality Analysis and Future Considerations** - This project may include partnering with state and local groundwater monitoring and research partners to describe water quality conditions and trends in privately-owned wells across the metro region. This information could be used to target outreach and technical assistance programs.



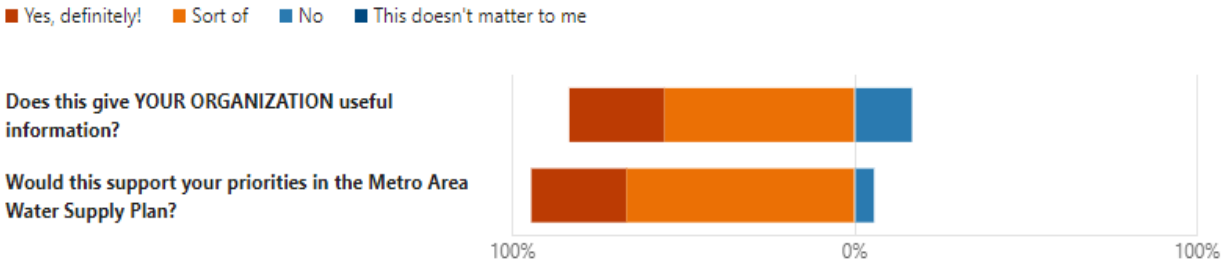
When would it be most useful to have this information?



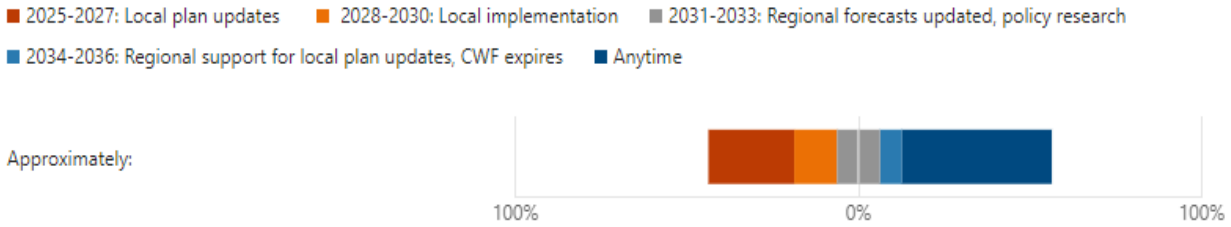
Past projects or people to reference

Responses
This issue is already under the jurisdiction of the MN Department of Health.
DNR and PCA have the expertise and infrastructure to do this - not a Met Council priority
See Dakota County Info: https://www.co.dakota.mn.us/Environment/WaterResources/WellsDrinkingWater/Pages/drinking-water-studies.aspx
jdustman@summite.com
Karla Peterson, MDH

16. **Historical Water Use Database** - This project may include Met Council partnering with DNR and MDH to summarize historical water use data for the metro region to support local planning, subregional analyses, tracking the impact of regional water efficiency programming, and supporting educational resources like the Water Supply Planning Atlas.



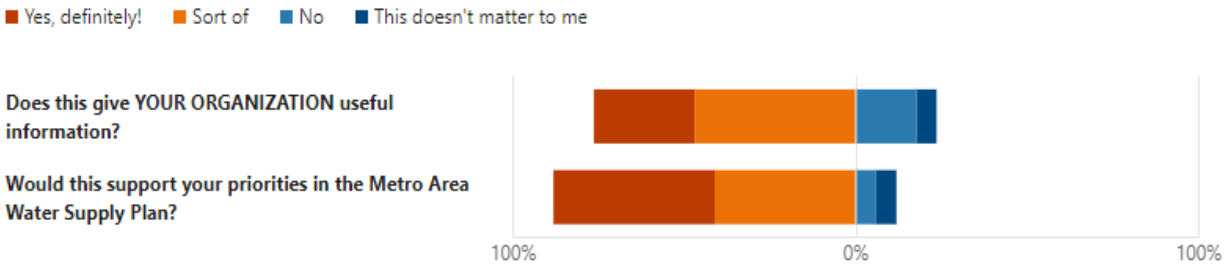
When would it be most useful to have this information?



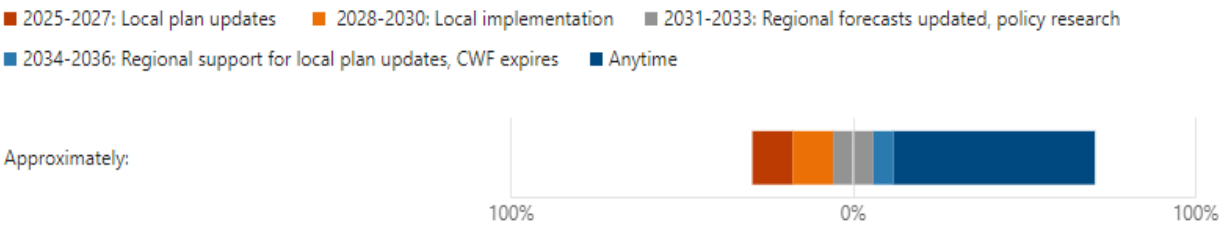
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	This is not something Met Council should be involved in. Also, this has basically already be done - don't look to reinvent the wheel.
2	anonymous	This is already done by community water systems in their DNR reporting. Not sure how historical data for private well consumption would be obtained.
3	anonymous	jdustman@summite.com
4	anonymous	Karla Peterson, MDH

17. **Unaccounted-for Water Analysis and Potential Savings** - Unaccounted-for water remains a major issue across the metro region including unmetered water use and excessive leaks in water distribution systems. This may include partnering with water utilities to perform water audits and update previous estimates of unaccounted for water volumes in municipal water systems. This information could be used to estimate potential water savings and support recommendations for funding and training programs.



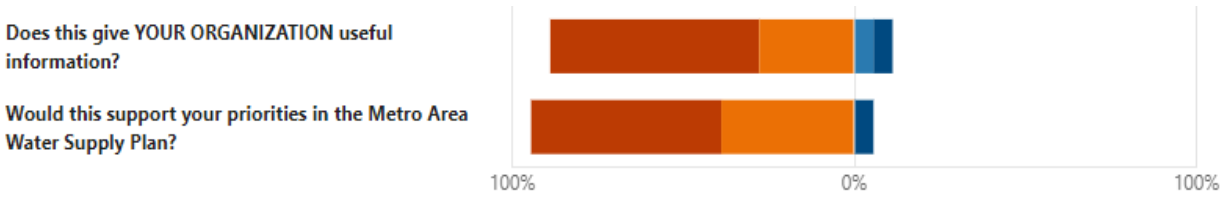
When would it be most useful to have this information?



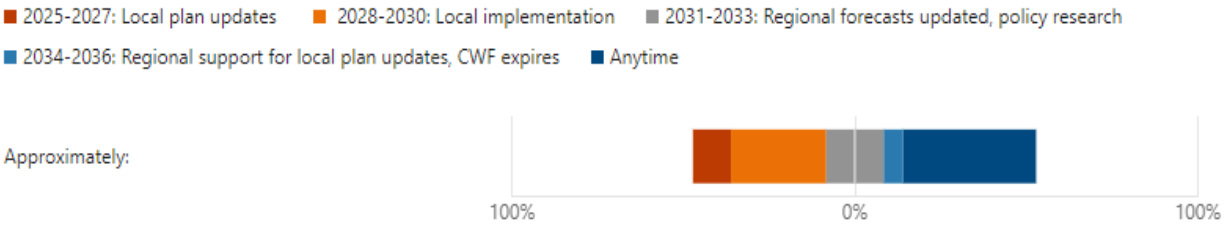
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	DNR has started Water Conservation Reporting. MN could take the next step similar to Georgia's which requires annual water audit reporting and unaccounted for water metrics. https://epd.georgia.gov/watershed-protection-branch/water-efficiency-and-water-loss-audits
2	anonymous	Karla Peterson, MDH

18. **Potential Water Savings by Sustainable Landscapes and Water Efficient Irrigation Systems** - This may include estimating the region-wide potential savings in outdoor water use that could result by shifting from current land cover and related water use to more water efficient land cover and efficient irrigation systems.



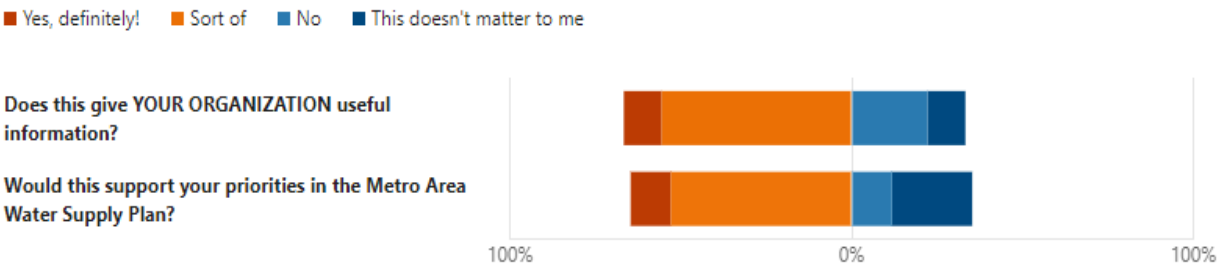
When would it be most useful to have this information?



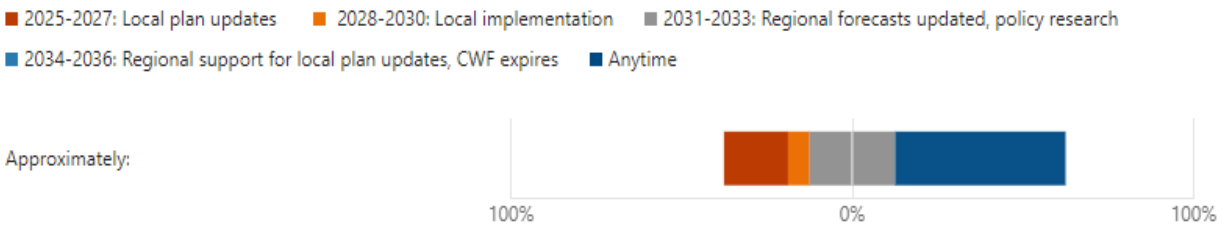
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	Provide guidance and then incentivize its implementation similar to water efficiciency grants.
2	anonymous	Derek Richter, MDH

19. **System Statement Content Regarding Water Supply** – System statements are documents required by state law and intended to help communities review and, if necessary, amend their local comprehensive plans. This project may include outreach to ensure communities understand and have resources to respond to system statement content.



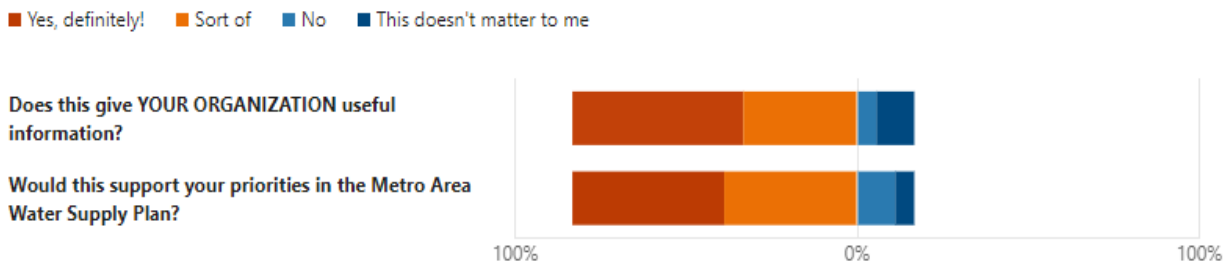
When would it be most useful to have this information?



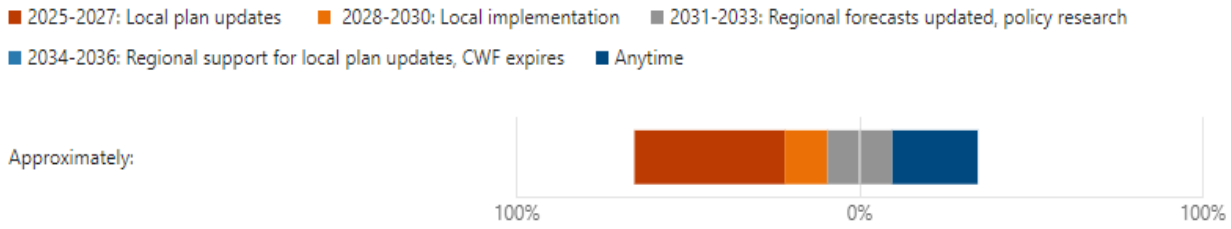
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	jdustman@summite.com

20. **Local Planning Handbook Content Regarding Water Supply** - The Local Planning Handbook is a resource to help communities update their local comprehensive plans. This project may include updating water supply-related maps, guidance for best practices, model ordinances/programs and other resources in the Handbook to ensure communities have information and tools to more easily and effectively update their plans.



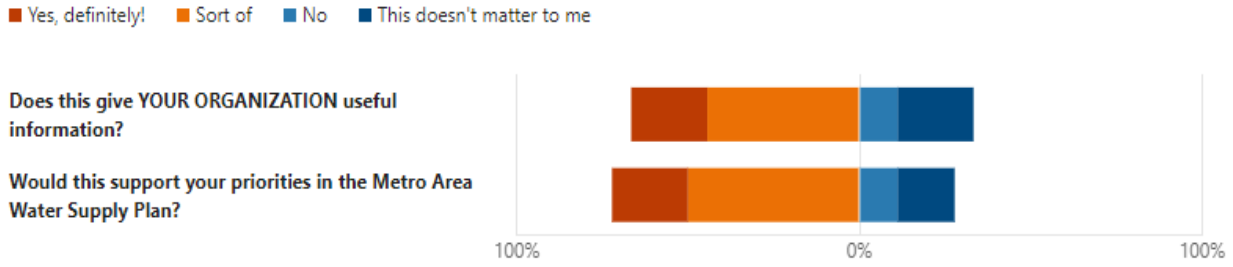
When would it be most useful to have this information?



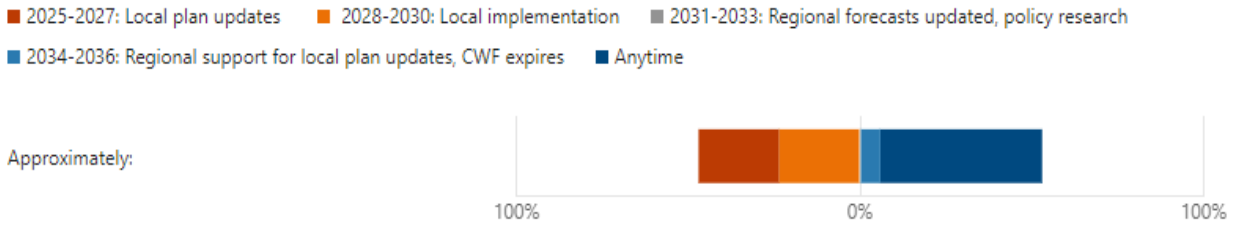
Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	jdustman@summite.com

21. **PlanIt Programming Regarding Water Supply** - PlanIt is a training and development program that provides educational opportunities for the 2050 comprehensive plan update process. This project may include updating water supply-related webinars, workshops, conferences, tutorials, or trainings by partner agencies.

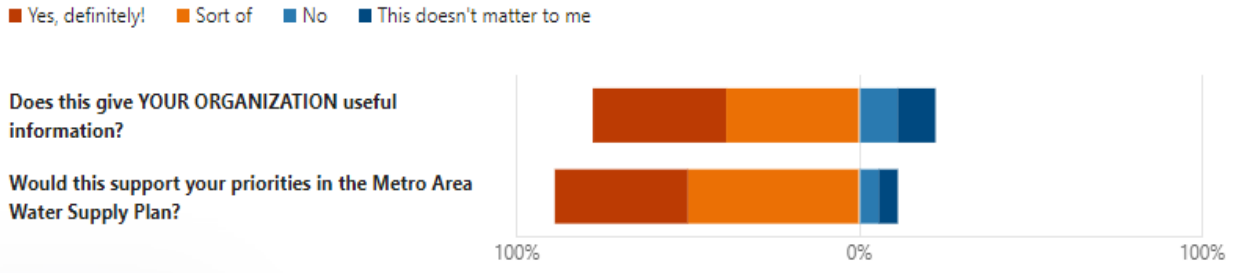


When would it be most useful to have this information?



Past projects or people to refence – No responses

22. **Guidance for Funding Opportunities to Support Local Plan Implementation** - This may include working with partner water organizations to develop water supply-focused guidance on "how to obtain or find funding" such as reference lists of grants and other funding opportunities or a shared list of companies that other communities have worked with successfully. May be added to Local Planning Handbook.



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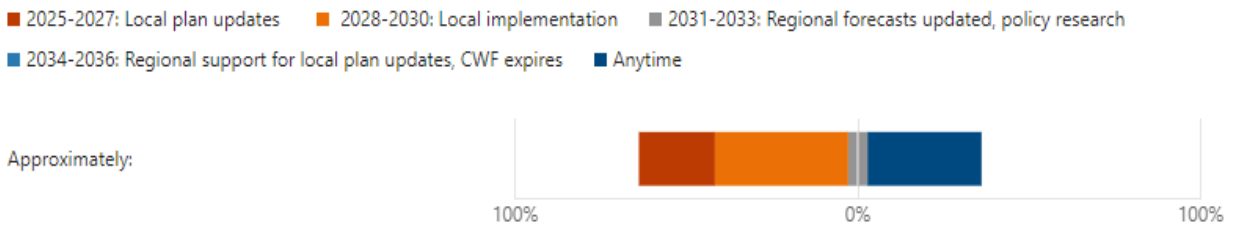

Past projects or people to reference

ID ↑	Name	Responses
1	anonymous	Karla Peterson, MDH

23. Final thoughts

ID ↑	Name	Responses
1	anonymous	Before plowing ahead on new projects, let's figure out if its either already been done or should be done by an existing agency.
2	anonymous	Understanding regional aquifer sustainability will be important for next round of comprehensive plans since there are many new large water users proposed.
3	anonymous	This was difficult. I feel many, if not most of the actions support local planning processes and they provide valuable information for planning. It was also difficult to put some of these into perspective because they cover the 7-county metro and may not impact surrounding communities. I would like to have a better grasp on how surrounding communities such as Isanti can leverage the outputs.
4	anonymous	Instrumenting wells with sensors that continually monitor water level and temperature is relatively simple and cost effective. A centralized database with potentiometric surface mapping is available. This would directly improve projects 7, 8, 10, 11, and indirectly support many of the others.

Next Steps

Staff will further prioritize the studies and develop a work plan to schedule the studies for the next two years.