# Information Item

Metropolitan Area Water Supply Technical Advisory Committee

METROPOLITAN COUNCIL

**Meeting date:** May 21, 2025

## Topic

Update on proposed regional groundwater modeling – input from potential partners and stakeholders to shape the scope of work

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|---|---|
| **District(s), member(s):** | All |
| **Policy/legal reference:** | Minnesota Statute 473.1565; 2050 Water Policy Plan policies on climate change mitigation, adaptation, and resilience; conservation and sustainability; and water monitoring, data, and assessment |
| **Staff prepared/presented:** | Lanya Ross, Environmental Analyst, 651-602-1803 |
| **Division/department:** | Environmental Services |

## Background

This information updates MAWSAC and TAC, who are charged with advising the Met Council on its water supply planning work on regional groundwater modeling.

The 2050 Water Policy Plan, specifically the Metro Area Water Supply Plan and its subregional chapters, identifies the need to update and use a regional groundwater model.

At the joint MAWSAC-TAC meetings on 12/11/024 and 2/26/2025, the committees identified regional groundwater modeling as a top priority, along other projects that support the Metro Water Supply Plan, regional water policy, and local stakeholder needs.

This work will include ongoing stakeholder engagement, conceptual and numerical model updates (including calibration), scenario analysis, project documentation, and outreach (Figure 1).


*Figure 1. Proposed steps and general scope of work, to be refined with partner and stakeholder input throughout the process.*

**A key first step was meeting with potential agency partners for input to scope the work.**

This information item summarizes input that the Met Council received in one-on-one and small

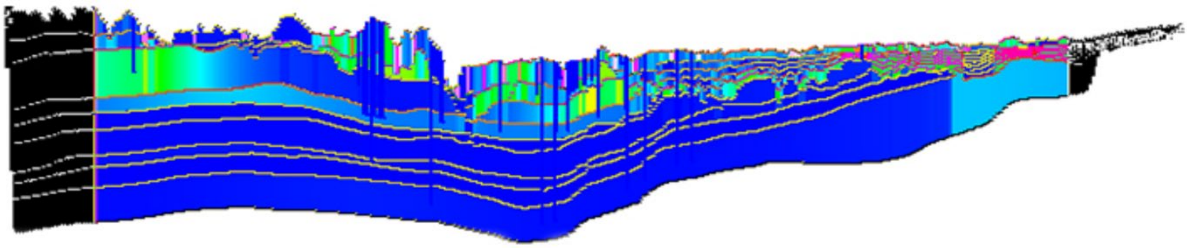
group interviews with twenty people in seven organizations. This input is shaping the draft scope of work for the regional groundwater model update.

The following materials are attached:

- Draft factsheet about the proposed regional groundwater model update, which was shared with the people who participated in interviews
- Summary of interviews

**TAC: Consider participating in technical advisory group meetings when scheduled.**

# Regional Groundwater Model Update



## What is the problem?

Water is essential to the quality of life in the Twin Cities region, supporting recreation, drinking water, and the economy. However, long-term sustainability of the region's groundwater and connected surface waters is uncertain due to population growth, land use changes, climate variability, and increasing water demand. Water supply planners and providers need reliable data and models to assess impacts and to make informed decisions about sustainable water management.

## Why does the problem matter?

Ensuring a sustainable water supply is critical for public health, economic stability, and environmental integrity. Without a comprehensive understanding of groundwater system dynamics, water resource managers risk overuse, ecosystem degradation, and future water shortages. A regional, integrated approach to water management helps protect water resources and supports informed, data-driven decisions for long-term sustainability.

## Metropolitan Council's role

The Metropolitan Council is responsible under Minnesota Statute 473.1565 for providing technical information to support sound water supply decisions. With a strong history of groundwater modeling – including Metro Model 3 and the daily Soil Water Balance model – the Met Council provides essential data and analysis. We collaborate with key regional partners including the BWSR, DNR, MDA, MDH, MGS, MPCA, USGS, and with local water supply planners, to ensure our work is guided by diverse expertise and the latest science.

Our regional perspective and dedicated resources – staff, consultants, and technical advisory groups – allow us to tackle complex water supply questions that other agencies may not be positioned to address. For example, the Council's responsibilities encompass planning to accommodate for socioeconomic growth, land use, transportation, and water. Our sustainable planning responsibility and lack of a regulatory role allow us to approach technical analyses with the perspective of both communities and water agencies. Finally, our work strengthens the connection between natural resources, water supply operations, and the communities that rely on them – especially as water moves beyond local jurisdictional boundaries.

## What is being proposed to address the problem?

The Metropolitan Council proposes updating Metro Model 3 to evaluate current planning questions, integrate new data, and incorporate advances in groundwater modeling. The updated model will:

- Include both steady-state and transient models that adapt to changing stakeholder needs.
- Assess regional and subregional groundwater budgets under various scenarios.
- Evaluate the impacts of climate change, land use changes, and population growth.
- Incorporate new data from state agencies and research institutions, including geologic mapping, groundwater monitoring, aquifer test data, and climate projections.
- Utilize updated versions of MODFLOW to enhance model functionality and flexibility.
- Engage stakeholders in an iterative process to refine modeling approaches and ensure usability.

## What will be the outcomes and benefits of the proposal?

- More capacity to assess and predict regional groundwater conditions under different scenarios.
- Improved tools for local and regional water planners to evaluate groundwater sustainability.
- Increased stakeholder confidence in groundwater modeling and decision-making.
- Strengthened partnerships and data-sharing among regional water resource agencies.
- Better public access to groundwater information and data through the Met Council's website.
- A framework for exploring "what-if" scenarios.

## What resources are needed?

- *Project Partners:* Continued collaboration with BWSR, DNR, MDA, MDH, MGS, MPCA, USGS, and local water supply planners to refine and apply the updated model.
- *Stakeholder Engagement:* Participation from regional and subregional water planners, state agencies, and local governments to guide model development and ensure relevance.
- *Data Contributions:* New datasets from state and regional partners, including geologic mapping, groundwater monitoring, and climate projections.
- *Funding Support:* Clean Water Fund resources to support model development, stakeholder engagement, and long-term model maintenance.

## When will this work take place?

The detailed schedule will depend on input from project partners and stakeholders. The work is generally anticipated to begin during the first quarter of 2025, with some project deliverables complete by December 2025 (ex: conversion of Metro Model 3 to MODFLOW 6, scenario identification). Subsequent phases, such as advanced scenario analysis, are likely to continue into 2026 and beyond.

## Learn more

To learn more, contact the Met Council project manager Lanya Ross at Lanya.Ross@metc.state.mn.us.

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# INTERNAL MEMORANDUM

**DATE:** April 15, 2025

**TO:** Jen Kostrzewski, Assistant Manager, Water Resources

**FROM:** Lanya Ross, Environmental Analyst, Water Resources; Steve Kloiber, Environmental Analyst, Water Resources

**SUBJECT:** Summary of agency interviews regarding the proposed update of the regional groundwater model

## Purpose

The newly updated regional 2050 Water Policy Plan (which includes the updated Metro Area Water Supply Plan), included regional groundwater modeling as a useful tool to inform several water supply-related questions. The Met Council's 'current' regional groundwater model is now 10 years old, and an update is needed to incorporate new data and technology, and to address new questions.

At joint MAWSAC-TAC meetings on 12/11/2024 and 2/26/2025, the committees prioritized groundwater modeling as a high priority project, along with a portfolio of other projects that help to implement the Metro Water Supply Plan, regional water policy, and support local stakeholder needs.

As a first step, we reached out to key organizations to let them know the Met Council is doing this work and that we are committed to collaborating - we want to take advantage of our partner organizations' great data, expertise, and perspectives. We spoke with twenty people at 7 organizations (Table 1).

This memo summarizes what was shared in the one-on-one and small group interviews.

The Met Council will use responses – along with input from MAWSAC, TAC, and Met Council staff - to identify potential research questions, model scenarios, and context for the groundwater model update. Input will also help us be sure to incorporate the best new data so that our work is credible and builds trust. We also hope to support data-sharing among organizations, so we want to make our data easily usable by our partner organizations.

## Discussion questions

1. How would you describe your role (or your agency's role) in managing or protecting groundwater, and how does groundwater modeling fit into this? How have you used – or would you like to use – groundwater modeling information in your work, and why?
2. What do you see as the most important data inputs for a credible and useful groundwater model? What are the most trusted sources for this info? What data do you use coming out of a model?
3. What file formats will make model datasets as usable as possible?
4. What, if any, concerns or questions do you have about previous metro models and what could we do better this time?
5. Who else should be talking to (in your own or in another organization)?

## Summary of interviews

### Highlights of Metro Model 3

- Compiling and integrating data - Metro Model 3 did a good job of integrating all the different data across the metro area. For example, the calibration dataset is useful as a source of region-wide information in a consistent format – this dataset includes data from many different places and puts it together in a single place where people can grab it.
- Effective use of input data - Metro Model 3 did a good job of incorporating the geologic data appropriately. The documentation has been a useful reference for various other efforts.
- Quality documentation - Metro Model 3 has very good documentation. This is highly valuable and should be a priority to document the updated model as well this time.
- Easy access to project deliverables - Metro Model 3 data and information is readily available online. As the regional groundwater model is updated, make sure that the files and model are accessible and well documented again.
- Metro Model 3 was developed by credible modeling experts. So, even though the visual outputs illustrating results made some people unhappy, Metro Model 3 provided useful technical information.
- Metro Model 3 was a valuable resource as a publicly available and peer-supported best reference for regional-scale information and a good starting point for other efforts, but it requires a process of refinement to make it fit to a particular situation. Examples of how USGS has used Metro Model 3 include:
    - Modeling plumes at TCAAP used Metro Model 3 as a starting place, because the model was readily available and it's internally consistent. The final model includes significantly modified details.
    - Evaluating water levels around Lake Nokomis in Minneapolis used Metro Model 3 as a reference for the hydrogeologic characteristics around the lake.

### A regional groundwater model that supports other modeling work

Similar to Metro Model 3, the updated regional groundwater model should continue to serve as a starting point/resource for other modeling efforts. For example:

- DNR's evaluation of potential local problems with groundwater management, such as groundwater impacts on surface waters (e.g., trout streams, fens, etc.).
- MDH local modeling to support wellhead protection area evaluation and planning
- MPCA local modeling to evaluate and manage contaminated sites.
- USGS subregional and local modeling to understand contamination transport and fate (in bedrock and through groundwater-surface water interaction).

The updated model could also be designed to support potential future uses such as:

- Subregional groundwater modeling around the Vermillion River in Dakota County to understand impacts of pumping on groundwater-dependent surface waters.
- Subregional groundwater modeling to assess cumulative impacts, including future DNR water appropriations, to ensure groundwater dependent ecosystems are not impacted and there is adequate supply for future generations.
- A tool for stakeholder and agency collaboration, to explore 'real-time' model scenarios as part of conversations about cumulative water use and groundwater availability. Modelers in Nebraska have taken an approach like this and talk about how valuable it was to meet with stakeholders (big groundwater appropriator), have them ask a question, and answer that question during the meeting to demonstrate "here's what would happen" as part of the discussion.
- An education tool to support understanding and conversations with groups of groundwater users in the metro area. This would support a slow shift from focusing on assessing DNR water appropriation permits one at a time to a more cumulative approach.
- Being a 'check-point' for more local water transport modeling by providing information that other models could be compared against. The comparison could highlight areas that need further work.
- A screening tool that could be used by MDH staff to quickly look at approximate impacts of proposed new wells, particularly in areas where MDH doesn't already have a model.
- Subregional or local modeling to explore water utilities' different long-range planning scenarios. For example, how might climate change and changes in growth impact the ability for backup supplies to stay sustainable in the future?

## Sharing standard data input and output using open-source formats

### General recommendations for data:

- Package and provide access to all the standard MODFLOW input and output files such as boundary conditions, and calibration targets.
- All inputs and outputs described below should be packaged as region-wide datasets and made available online (in the Minnesota Geospatial Commons as much as possible).
- All data inputs and outputs should include metadata documenting sources, process to review and correct, how data was created/analyzed and why those choices were made, and level and causes of uncertainty.

### Ensuring a credible regional credible regional groundwater model

- **Inputs should be developed using datasets that ideally have a long history** to support trend analysis trends and help to tell the story of regional aquifers. For example, information about depth to groundwater, groundwater contours, and estimates of recharge to groundwaters should be tied into historic rainfall/precipitation data.
- **Update the input data from Metro Model 3** because they are from sources hydrologists turn to and trust – update those parameters with the most recent data, using data from the MN Geospatial Commons as available.
- **Pumping data** from DNR MPARS, which may promote the use of monthly time steps for transient modeling. Carefully consider the time period that is used in the model, as it has a big impact on the model calibration and credibility of the results – choose a time period that does not represent higher or lower than normal pumping. *The modeling team needs to think about how to develop baseline and future pumping use scenarios and have suppliers review and weigh in on these scenarios.*
- **Groundwater level data** compiled from a range of sources including DNR observation well network, city monitoring wells, MWI well logs, MPCA monitoring wells, and perhaps augmented and verified with a USGS-led synoptic water level measurement. Include water level measurements at calcareous fens, trout streams, or other groundwater-dependent surface water features that the model will be used to assess
- **Up-to-date and consistent geologic information across the model domain,** which may require collaboration among groundwater modelers and geologists
    - Incorporating new geologic atlas data might require work to ‘stitch’ together new geologic unit surfaces across the model domain
    - Geologic inputs to a groundwater model should reflect the level of detail that the model is technically/feasibly able to incorporate – the geometry of bedrock and quaternary layers are important as well as understanding the nuances of permeability of top layers
- **Hydrogeologic property data** (including vertical and horizontal hydraulic conductivity for all bedrock units) compiled from a range of sources including DNR/MDH aquifer test database, MGS and USGS research, any MPCA projects, city aquifer tests, and other sources

- **Estimated recharge** – including flow into and through the unsaturated zone (if included in the model). Start with an updated daily Soil Water Balance Model (SWB) based on the soon-to-be released USGS/U of MN updated SWB for Minnesota, but with the potential for different analyses in future phases. This model will use its own range of inputs including:
    - ***Climate data*** from sources such as U of Minnesota CliMAT (based on CMIP6 climate projection data), MESONET sites, gridded PRISM data available through Oregon State, and others
    - ***Land cover and land use*** input should look over the last decades and include projections for continued development into the future
    - ***Soil properties***, from SSURGO and tapping into MDA's work with NRCS soil scientists for the MN Groundwater Protection Rule which generated information about the best soils information to use
    - ***Estimates of evapotranspiration***, including impacts from irrigation
    - ***Topography*** using high-definition DEM/LiDAR data (also useful for estimate stream be elevations because getting stream stage data is a challenge)
    - ***Runoff***
    - ***Baseflow calibration*** using USGS and DNR stream gauge data

- **Fluxes,** particularly information that reflects groundwater discharge to surface waters as baseflow
    - Incorporating ***stream flow*** data from the Met Council, watershed partners, DNR/MPCA cooperative stream gaging program, USGS, and National Weather Service(?)
    - Using information from the ***National Water Inventory System***, which can be used to generate information for the Stream Flow Routing Package using a method developed by USGS
    - Checking predicted fluxes to lakes and other surface waters to see if values fall within a reasonable range.
    - Consider refining with a ***synoptic baseflow measurement in streams***, to ensure that baseflow estimates accurately reflect groundwater discharge to surface waters as well as hydraulic head information

**The following outputs would make model results more useful for partners and stakeholders:**

- **Results of scenarios to inform conversations** among local water suppliers and planners and regulators. Specifically: no-pumping conditions, current pumping conditions, and future pumping conditions to track:
    - Model-predicted aquifer drawdowns around calcareous fens, trout streams, lakes and wetlands
    - Model-predicted aquifer levels compared to DNR's 50% and 25% thresholds at selected locations
- **Information that could help to assess impacts of future pumping, climate, and other changes on backup wells**. For example: what is the viability of using these wells in the future? Are there limits on the flexibility to use these wells?
- **Model results that could be compared to other more local model results** to see where things do and do not match. Where they don't match, modelers should explore why there is a difference and make recommendations to revise analyses.
- **Model-estimated recharge values that could be compared to compare to the updated Minnesota recharge model and with other organizations' modeling work**, to inform

understanding of what is the flux of water at different depths, what is return flow to streams – helping to validate inputs SWAT or other water balance models

- **A geological dataset** with seamless information across county boundaries. This may include a regional dataset of the best 3D points of quaternary soils.
- **MODFLOW head data**
- **MODFLOW cell-by-cell flow data**, as an input for more localized modeling efforts and to support particle tracking
- **Calibrated model estimates of key geologic parameters** such as vertical hydraulic conductivity
- **Information about the sensitivity** of groundwater-surface water interactions and the influence of groundwater on lakes of interest
- **Information that would inform other models** such as a PFAS plume movement model
- **Framework to talk about time** – lag times, travel times in groundwater
- **Evaluation of model results to inform future assessments**
- **Maps and cross-sections** are helpful for the challenge of communicating about abstract models.
- **Consider creating a 3D rendering of the model** so people could 'slice' into it at any location to see the model at different places.
- **Prediction ranges (envelopes) of the capture areas around wells** are helpful for communication. These are based on multiple model runs and can be used to help show people what possible outcomes could be. It allows modelers and planner to explain, "This model isn't exactly right, but we think we're going to be somewhere in this range because all of these things agree."

**The following data formats will make model results easier to use for multiple purposes:**

- If using MODFLOW 6, the **standard raw model files** are fine for modelers.
- **Esri shapefiles and geodatabases, DBF files, and Excel files** are all useful formats, as is anything you can read with ArcGIS and export to models
- **Open-source data** should be used as much as possible - for transferability and to make it easy for people to look at, add to, and modify data. For example:
    - Do not use proprietary software such as Groundwater Vistas. Use open-source options instead such as FlowPy.
    - Open Geospatial Consortium (OGC) GeoPackage files are more universally usable and can be brought into Esri ArcGIS Pro, R, Python, etc. This would give the model development community in the region access to the full model details in a way that they could use as a starting point in their own work. It would also create the capacity for people to update the regional groundwater model together - having the development community able to contribute to model revisions and applications going forward.
- Continue to provide model input and output data as **text files**, because they are easy to download and use regardless of the software program of choice.
- **CSV files** make it convenient to crunch numbers and do post assessment of data
- **Outputs that consolidate consistent information for the entire model domain into single, documented datasets** are useful (geologic interpretations, climate inputs, etc.)

- **Jupyter or Python scripts** would be a big help to allow model data to be updated and shared more easily (example: pulling data from MPARS).
- **For Quaternary units in particular, the modeling team will need to work with MGS to determine the best format,** particularly for buried bedrock valleys. Is there a format that allows modelers to represent the interaction of Quaternary and bedrock aquifers in buried bedrock valleys? Are there some input data that can be simplified?
- Could there be a **simplified version of the model that could be accessed through the web**? Something that could be used interactively with stakeholders to explore different scenarios.
- **Providing information and figures as PDFs** is helpful, particularly model documentation and results
- **Data visualizations of the model and results** can support storytelling, communication, and collaboration with stakeholders.

## The process to update the regional model should incorporate lessons learned from Metro Model 3 and from more recent other modeling efforts

### Outreach and collaboration

- Be open and transparent about the project. Develop a website landing page for sharing updates and communications about the model update project.
- Design the process to give people plenty of time to zoom in and review the model on a more local scale, to identify where things don't make sense and need improvement. The information in Metro Model 3 did not scale down well to reflect more local conditions in certain areas, and this could be done better.
- Design the process to connect regional and subregional modeling – allow for some back and forth to improve both efforts. If there is subregional work that results in refinements, re-incorporate those refinements into the regional model. Smaller scale studies can often identify issues and resolve them.
- To do better, expand on the engagement that was done for Metro Model 3.
    - Continue technical working group to talk about the status of the work and periodically review work.
    - Expand engagement to include more planners and resource managers to help inform decisions about modeling goals and objectives. These people are also a sounding board for the model assumptions and can provide useful guard rails for the work. Talk to people, tell them the assumptions that are being made, and talk about the outputs.
    - Groundwater modeling is inherently technical and complex. Engaging with a diverse array of stakeholders will require a thoughtful outreach plan as well, frequent engagement in dialog, and consistent translation of model results to plain language.
    - Engage with stakeholders by focusing on questions like "What are your growth projections? What is your planned density?" Make sure common assumptions are understood by everyone before running model scenarios. Follow-up by communicating results and verify that that make sense to everyone.

### Model construction and calibration

- Consider using the latest version of MODFLOW (version 6), which would better support using the regional model as a framework for more detailed modeling that might be done by others (like the DNR or MDA) for local purposes or regulatory purposes. Michigan is looking at doing something like this: Ground-water-withdrawal component of the Michigan water-withdrawal screening tool | U.S. Geological Survey and Water Withdrawal Assessment Tool
- Examine the spatial distribution of model calibration residuals. Ensure that every area of the model has some positive and negative residuals. Metro Model 3 calibration was good at a regional scale, but no one area calibrated particularly well.
- When decisions are made about modeling methods and construction, be sure to communicate how these decisions connect to the modeling goals. Don't just focus on the technical capabilities. Explain why they matter.
- Use a better approach to incorporating rivers into the model. Modeling rivers in the same way as lakes in Metro Model 3 was problematic. Consider switching to the Stream Flow Routing (SFR) package, which could be a better solution for representing flow into and out of surface waters and the groundwater system.
- Continue to use the Multi-Node Well Package, because it is helpful in explaining to non-technical audiences how pumping wells are incorporated into the model.

- Use a better approach than the quasi-3D layers in Metro Model 3. The quasi-3D layers are very difficult to explain and work with. This may mean approaching hydraulic conductivity differently (vertical hydraulic conductivity in Metro Model 3 was represented with the quasi-3D approach, which isn't explicit and adds a challenge for translating Metro Model 3 into a finer-scale local models). In the updated regional groundwater model, try to figure out a more explicit way to represent vertical hydraulic conductivity.
- It is desirable to have a model (or a version of the model) that can run quickly and that allows users to interactively run scenarios. The complexity of Metro Model 3 made it hard to run quickly (10-15 minutes to run a single scenario).
    - Make strategic choices about the model grid; only refine the grid for good reasons such as where high concentration or hydraulic gradients are expected. Where there is no pumping or any gradient, the grid doesn't need to be refined.
    - If there is going to be a transient version, also have a steady state version that can run fast.
    - A fast model will better support any optimization modeling (which could tap into PEST++).

### Incorporating updated data

- Commit resources to regularly incorporate updated information and model fixes into the regional groundwater model. Metro Model 3 was not updated for 10 years. Develop a proposed update plan and schedule.
- A lot of new data could be incorporated into an updated model of the metro area. Document new data available. Incorporate new geologic information into the updated groundwater model, particularly for the top of glacial and Quaternary layers where permeability values have implications for model-predicted flow for the recharge rate through these layers.
- Work with MGS to come up with a new process for better mapping hydrogeologic properties into the groundwater model. MDH has a method for generating aquifer property data that does not use MGS data right now and are working with MGS to come up with a new process for mapping.
- Review use of the Metro Model 3. Are there areas where it has worked well or not well? Could this inform where to focus efforts for more updated information? Were there modeling revisions that were useful and where additional information is available that could be incorporated into the model?
- Consider providing input data in as much detail as possible to support more localized modeling. One of the biggest downsides of Metro Model 3 was the large cell sizes (500 meters by 500 meters). However, this would need to be balanced against the goal of having a model that runs quickly and efficiently.
- Consider adding basic water quality information to the model, such as parameters that are sampled and added to the County Well Index (Nitrate and Arsenic). That might allow us to see how that information is moving in the model instead of just the groundwater flow.

### Stakeholder questions that the model could help to address

- There are a lot of stakeholder questions related to the timing of groundwater flow, particularly as it relates to transport of chloride and nitrate. It would be useful to have an updated groundwater model that supports analyses like that. The expectation is not that the updated regional groundwater model would answer those questions, but that it could be developed in a way that would help support that type of follow-up analysis. Example of USGS work on a Wisconsin nitrate decision support tool: Data to support a Groundwater Nitrate Decision Support Tool for Wisconsin | U.S. Geological Survey

- If the regional groundwater model will be used to support transport modeling or particle tracking or even mass transport, this should be considered in the design of the model grid – continuous model layers should be included. MODFLOW 6 has the capability to allow layers to pinch out, which can help reduce the number of active model cells and improve model efficiency. However, this causes challenges with transport modeling.
- If the regional model could provide better information about the amount of groundwater going into and out of surface waters, that would help water resource planners.
- Consider designing the model so that it could be a useful starting place for more localized modeling with domestic wells incorporated more explicitly. It would be helpful to predict aquifer drawdown at domestic wells.
- Be prepared for stakeholder questions about how predictions of water use were made, which happened last time.

## Addressing uncertainty

- When communicating the results of regional groundwater model scenarios, don't just report a single answer.
- Uncertainty quantification has advanced a lot in 10 years, and the regional model update should include new approaches. The tool that the USGS uses is PEST++, which is a way to calibrate models using an ensemble. This can be helpful for communicating that "a single answer produced by the model is probably not what actually happens."
- Consider using a "Forecast first" approach to model development: Start with a draft model to address certain things that we know the model should assess, then use those results to scope improvements in an iterative process. As the project goes forward, the team can backfill and collect data and add more information – keeping an eye on the model results and if it changes. If the model results do change as new information is incorporated, then you know the information is affecting the answer and that the model is sensitive to that information.
- Design the process to periodically compare the regional groundwater model to other modeling efforts such as MPCA PFAS modeling, DNR White Bear Lake modeling, etc. Results should inform updates to either or both models.

*Table 1. People and organizations who shared input with the Met Council regarding the proposed update of the regional groundwater model.*

| Name | Organization | Date |
| --- | --- | --- |
| Glen Champion | DNR | March 7, 2025 |
| Matthew Meyer | DNR | March 7, 2025 |
| Ellen Considine | DNR | March 13, 2025 |
| Andrew Leaf | USGS | March 18, 2025 |
| Jared Trost | USGS | March 18, 2025 |
| Jeff Berg | MDA | March 19, 2025 |
| Reid Christianson | MDA | March 19, 2025 |
| Andrew Retzler | MGS | March 24, 2025 |
| Anthony Runkel | MGS | March 24, 2025 |
| Julia Steenberg | MGS | March 24, 2025 |
| Robert Tipping | MGS | March 24, 2025 |
| Che Fei Chen | SPRWS | March 26, 2025 |
| Richard Hibbard | SPRWS | March 26, 2025 |
| Brian Davis | MPCA | March 26, 2025 |
| Cliford Ndiweni | MPCA | March 26, 2025 |
| Randy Thorson | MPCA | March 26, 2025 |
| Abby Shea | MDH | March 28, 2025 |
| Anneka Munsell | MDH | March 28, 2025 |
| John Oswald | MDH | March 28, 2025 |
| Karla Peterson | MDH | March 28, 2025 |