

LRC Water Use Conflict – STAKEHOLDER BI-WEEKLY MEETING MINUTES

Date: January 22, 2026 8:00 AM

Location: Microsoft Teams

Attendees: Uma Vempati (KH)
 Glen Champion (DNR)
 Jason Moeckel (DNR)
 Randy Klaphake (Baker Lake Nursery)
 Jocelyn Schlichting (Schlichting Farms)
 Brent Beste (DNR)
 Rick McCulloch (LimnoTech)

1. Modeling Discussions

- Preliminary model results (Glen)
 - **Changes Implemented:** Proposed changes were integrated into the model with a default parameterization, and testing is underway to improve its fit. Parameters related to land cover, crops, and crop coefficients are held constant due to external information.
 - **Base Flow Analysis:** Hydrographs from a long-term gauge were presented, showing various base flow filters. Glen emphasized that these filters are less reliable at high flows for isolating groundwater-derived water but become more reliable at declining and lower flows.
 - **Initial Default Runs:** The first default runs showed higher summer base flows compared to the previous model.
 - **Groundwater Evapotranspiration (ET) Adjustment:** A significant difference was identified in groundwater ET. The previous model used "negative recharge" for groundwater ET, while the new SWB model separates soil and groundwater ET. Glen adjusted the partitioning of ET, particularly in wetland areas with shallow water tables, to reflect that groundwater replenishes soil water, leading to more direct ET from groundwater.
 - **Improved Fit:** Increasing groundwater ET in wetlands and along streams significantly improved the model's fit and broad-scale statistics. The Nash-Sutcliffe coefficient is now 0.63 (exceeding the 0.5 goal), and the overall percent bias is 0.6, meeting goals for the entire modeled period.
 - **Winter Base Flow:** The new model shows much improved performance in winter base flows compared to the original model, which tended to model them too high.
 - **Summer Base Flow Discrepancies:** The model still struggles to capture the sharp drop-off in base flows during the summers of 2021 and 2023 as precipitously as measured flows. Glen has ideas to address this. He noted that during these drought periods, the decline in groundwater was steeper than expected from passive drainage, suggesting active water removal, largely attributed to riparian/wetland ET and intensive irrigation pumping.
 - **Model Purpose:** Glen reiterated that the primary goal is to accurately model the *difference* in base flows between scenarios (e.g., with and without groundwater pumping), as this difference has less error than the absolute computed base flow.
 - **Observation Well Comparisons:**
 - ❑ **240th Avenue Well:** The modified model shows better agreement with observed data, particularly in capturing deep dips in the water table, which is attributed to increased wetland ET in this wetland-influenced area.
 - ❑ **Well Nest Near Long-Term Gauge:** The modeled water table is slightly too low but tracks variability reasonably well. However, the buried aquifer well shows issues: modeled heads are too high, and summer drawdowns due to

pumping are too large. Glen believes a stronger connection between the buried aquifer and the water table, and potential adjustments to hydraulic conductivity, could improve this fit.

- **Baseline vs. Reference Condition:** Glen clarified that the "baseline" model represents actual reality with existing groundwater use, while the "reference condition" is a hypothetical "no groundwater use" scenario, which has not yet been generated. The baseline model needs to be stable before the reference condition can be developed.
- Updates to refined irrigated cropping and application rate analyses, QA/QC (Brent)
 - Brent presented an analysis of irrigated cropping and application rates within the Little Rock Creek watershed, covering the period from 2010 to 2024.
 - **Scope and Data Sources:**
 - ❑ The analysis focused on the entire Little Rock Creek watershed.
 - ❑ Irrigation circles were delineated from Glen's modeling input area.
 - ❑ MPARS reports were used for crop-specific irrigation data.
 - ❑ Brent emphasized using data for single-reported crops to avoid complications from multi-crop fields when analyzing irrigation application rates.
 - **Crop Composition and Trends:**
 - ❑ **Corn:** There is more corn being planted annually than previously thought, and irrigated corn acreage is increasing.
 - ❑ **Peas:** Peas were first planted in 2020, so there isn't enough historical data to fully understand their interaction with the system. They are considered a limited opportunity.
 - ❑ **Dried Beans:** Dried beans are planted more frequently than potatoes within the watershed.
 - ❑ **Alfalfa:** While a minor crop in terms of acreage, alfalfa is water-intensive.
 - ❑ **Soybeans:** Corn-soybean rotation is less prevalent in the Little Rock Creek watershed compared to the rest of Minnesota, but it's being monitored to understand changes over time under irrigation.
 - ❑ **Other Crops:** Multi-crop fields or alternative crops are being planted at a similar rate to corn percentages in irrigation reports, which was a surprise.
 - **Data Handling and Integrity:**
 - ❑ Brent removed outliers with application rates over 50 inches per acre, as they were likely inaccurate.
 - ❑ The data is intended to guide future conversations and help field staff, not for decision-making.
 - **Application Rates:**
 - ❑ **Corn:** The average application rate is just under 10 inches per acre. Usage spikes (1-2 billion gallons per year) were observed in drought years (2012-13, 2021, 2023)
 - ❑ **Potatoes:** Show similar trends to corn but on a smaller scale, with a significant spike over 15 inches per acre in 2021
 - ❑ **Dry Beans:** Exhibit similar trends to other crops
 - ❑ **Peas:** Have lower water use due to lower acreage
 - ❑ **Alfalfa:** Has comparatively high application rates, indicating higher water intensity than corn
 - ❑ **Long-Term Averages (2010-2024):** Corn generally falls within the guidance of the 1976 irrigation guide. Dried beans, soybeans, and peas are slightly lower than corn. Potatoes generally fall below the 15 inches per acre recommendation

2. Impoundment Areas and Contact with Stakeholders (Uma)

- Continued investigation of potential impoundment areas and outreach to impacted landowners
 - Phone numbers for some stakeholders were provided, but some were disconnected or unreachable
 - Randy offered to provide contact information for Steve Kahl, Randy Hackett, and Melvin
 - Efforts are ongoing to reach out to stakeholders in the area to explore potential partnerships
- Working to find contact information for stakeholders who own land identified as potentially beneficial for impoundment areas
 - Contacted DNR and Gerry Maciej 12/3
 - Searched using Google and county records
 - Received phone numbers from Jocelyn
 - The following phone numbers (and/or email addresses) are still needed:
 - Jay Golden, Jason & Karla Fleming, David & Myong Wlaznak, Stephen & Joyce Kahl, Melvin Hackett, Randy & Elizabeth Hackett

3. Beaver Dam Analogue Pilot Project

- Updates on conversations with Fish and Wildlife Service (Jason)
- Draft pilot protocol is in development
- Meeting with Dr. Emily Fairfax (UMN/Saint Anthony Falls Lab) on Friday, 1/23. This is the third expert we have spoken with; expert feedback is being incorporated into pilot project considerations.
 - A team member will attend Emily Fairfax's presentation to the MPCA, and a virtual meeting is scheduled with Emily Fairfax to discuss BDAs and seek her guidance on the pilot protocol. Randy also plans to join this virtual meeting.
 - Efforts are ongoing to engage stakeholders to identify potential partners for BDA implementation

4. February 5 Meeting Agenda

- Model updates
- Trout stream designation review
- Review revised SDL assessment based on model recalibration
- Update on investigation of potential impoundment areas and BDAs
- Discussion of BDA pilot project protocol

5. Action Items / Next Steps

- KH – continue outreach to stakeholders with updated contact information

6. Next Bi-weekly Stakeholder Virtual Meeting

- February 19, 2026

7. Potential Next Workshop Meetings

- February 5, 2026 – updated model outputs, beaver dam analogues
- March 12, 2026 (potential) – initial model results on crop rotation and water conservation