LRC Water Use Conflict – STAKEHOLDER BI-WEEKLY MEETING AGENDA

Date: March 5, 2026 8:00 AM

Location: Microsoft Teams

Attendees: Randy Klaphake (Baker Lake Nursery)
Glen Champion (DNR)
Jason Moeckel (DNR)
Brent Beste (DNR)
Hans Holmberg (Limnotech)
Uma Vempati (KH)
Wally Parkins (Royal Farms)
Dean Zimmerman (Irrigator)

1. Modeling Discussions (Glen)

- Update on progress
  - The modeling team has advanced efforts to better fit baseflows during dry summer periods and to improve matches to observation well nests near the stream; initial results indicate the model is close to intended performance but has not yet undergone external review.
  - Edge-case tests were run on 2026-03-04 to assess minor adjustments; these are not expected to produce major changes.
  - Modeling Framework and Process - The overall process involves revising and updating the baseline model to reassess streamflow impacts, recalculate sustainable diversion limits, and test management options. The model integrates various data types to understand the system as a whole.
  - Methodological Changes: Key changes include extending the model period, reassessing irrigation use volumes with improved estimation methods, and updating the groundwater recharge model. The updated recharge model provides more detail on crop rotations and uses satellite-based models for evapotranspiration. For sustainable diversion limits, deciduous trees will replace alfalfa as the reference crop in comparison scenarios.
  - Workflow and Stakeholder Review: The team has been developing initial model results, assessing, reviewing, and refining them to improve data fit. This involves a back-and-forth process with a small stakeholder group and their consultant, Gary Johnson, to tweak the model for realism. They are in the final phase of this refinement, with the goal to finalize the model and complete stakeholder review by summer 2026.
  - Groundwater Evapotranspiration (ET): A significant challenge has been accurately representing the amount of water drawn up by plants from shallow water tables near streams, especially in summer. This process, known as groundwater ET, lowers the water table. Stream gauge data shows daily fluctuations (jagged ups and downs) caused by ET, providing qualitative evidence of its impact. Initial model results underestimated groundwater ET, and the team is working to make its representation more realistic.
  - Baseline v. No-Use Scenario: The baseline model aims to represent actual historical conditions from 2006 to 2024. The "no-use" scenario, however, is designed to isolate the effects of irrigation and other groundwater uses by hypothetically replacing irrigated crops with deciduous trees and removing groundwater use. This is an artificial scenario intended to understand specific impacts rather than a natural land cover.
- Overview of updates to be shared at March 12 meeting
  - The team will present a concise overview of the modeling process on 3/12, including goals, approach, and schedule.

- Objective for 3/12 meeting: provide the broader group with a clear understanding of work to date, rationale behind decisions, and factors contributing to the duration of model development.

2. Questions Posed by Randy Klaphake During Call:

- No-Use Scenario and Diversion: Randy asked if the diversion amount is unknown until the no-use scenario is run. Glen confirmed this, explaining that the current process focuses on establishing a baseline model representing actual history, which then forms the basis for the no-use model by changing land cover and removing groundwater use.
- Daily Fluctuations in Stream Gauge Data: Randy inquired about the "ups and downs" in the stream gauge chart, asking if they were daily evapotranspiration (ET) and where the data came from. Glen clarified that these fluctuations are indeed caused by daily ET, with water levels rising at night and falling during the day. He explained that the data comes from 15-minute stream stage measurements at the upstream gauge.
- Source of ET Measurements: Randy further asked if these were actual measurements from gauges and if they reflected what was happening with trees along the creek. Glen confirmed they were actual measurements and attributed the ET to trees, wetland plants, and other vegetation along the creek and floodplain. He explained that when the water table is shallow, the drying soil draws groundwater up, causing these observed fluctuations.
- Quantifying ET from Data: Randy questioned if the amount of ET could be quantified from this data. Glen stated that while it's a clear qualitative signal, precise quantification would be very rough due to varying timings of impact from vegetation at different distances from the stream, and the blending of ET with other factors causing gradual groundwater decline (pumping, drainage).
- No-Use Scenario and Tree Extension: Randy asked how the no-use scenario would handle existing trees, specifically if they would be "extended out." Glen explained that the no-use scenario focuses on the effect of irrigation and other groundwater uses, not all land cover choices. Therefore, only irrigated crops are replaced with deciduous trees, while other existing land cover remains as is. He acknowledged this is an artificial scenario designed to isolate irrigation impacts.
- Modeling Beaver Dam Analogs (BDAs): Randy asked if BDAs could be modeled to estimate changes before installation. Glen affirmed that it's an area needing discussion among experts due to the small-scale, localized complexity of BDAs, which is different from the large-scale groundwater use modeling. He suggested that a field experiment with data collection would be helpful to guide the modeling approach.
- Bypassing BDA Modeling for Site Selection: Randy then asked if, given the modeling challenges, the team would simply look for easily accessible and suitable sites for BDAs. Glen agreed that this is a practical first step, hoping that such initial installations could also serve as experiments to gather data for future modeling.
- Benefits of the Project: Randy expressed concern that stakeholders don't see the benefits of the project beyond statutory compliance, asking "what's the gain?" Glen, Jason, and Wally explained that the gain is maintaining current water allocations and avoiding statutory non-compliance, which could lead to reduced allocations and impact farming profitability.
- Focus Area: Randy conveyed that people in Morrison County feel singled out, despite the statutes applying statewide and the county not being the highest in irrigation intensity. Glen, Brent and Jason explained that focus areas are chosen based on factors like irrigation density, proximity to sensitive water resources, and water quality impairments, and that the agency has to triage its limited resources. He also provided examples of other active efforts across Minnesota to demonstrate that Little Rock Creek is not the only focus.

3. **Beaver Dam Analogue Pilot Project Update**
   - KH will conduct site visits during the morning of March 12. We will collect creek width/depth measurements and georeferenced site photos to aid in pilot protocol development and model inputs.
     - Baker Lake Nursery (identifying potential locations for BDAs for pilot)
     - Sieben property (marking off ditch that should not flood)
     - Kloss property (marking off live beaver dam that should not flood)
     - Schwab property (identifying potential BDA locations; gathering input from Chad)
     - Potential: Rice Area Sportsman's Club property (awaiting confirmation from Jeff Popp and other Club members after their March 4 meeting)
   - KH Next Steps:
     - A draft protocol for the BDA pilot has been developed and will be reviewed with Emily Fairfax for her comments.
     - KH Team members are scheduled to conduct site visits on the morning of March 12th to gather information before the open house.
     - Randy has assisted by connecting the team with neighbors, which is facilitating the process.
     - After gathering site-specific information, the team plans to consult with Emily Fairfax again to discuss observations and next steps. The overall approach is to gather as much expert input as possible for the BDA projects to ensure the best available information guides their implementation.

4. **March 12 Meeting Agenda**
   - See attached

5. **Action Items / Next Steps**
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6. **Next Bi-weekly Stakeholder Virtual Meeting**
   - March 19, 2026

7. **Next Workshop Meetings**
   - November 2026 (date TBD)