WSF 2025 Annual Report

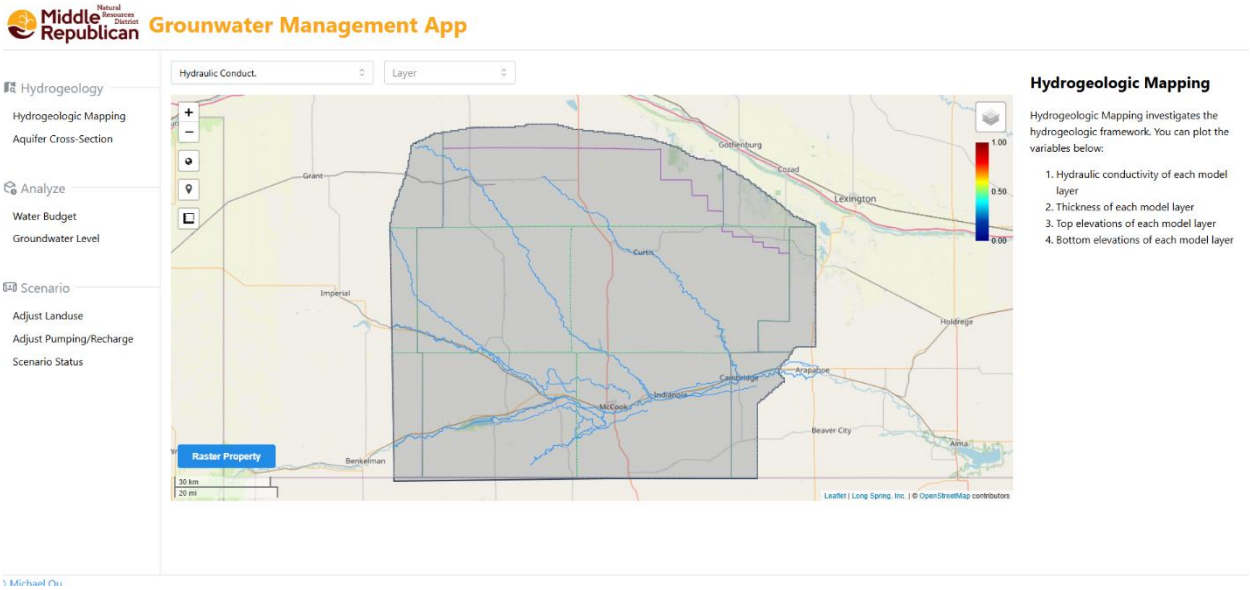
Grant Application No. 5249

Titled: MRNRD Hydrogeologic Mapping

Grant Amount: $785,764.80

Project Progress:

Phase I of the modeling is nearly completed. All calibrations to the model without AEM have been completed and a GUI (graphical user interface) has been developed.



Jesse Korus with UNL has all the AEM data complete that we will input into this model. Our consulting firm is currently inputting the AEM data into the model and will begin to recalibrate the model with the new data. Since the model was completed, we expect this to be a seamless process that will require as little rework of the model as possible. Jesse has done an initial assessment of the AEM data compared to our current knowledge of the aquifer. The assessment has shown that in certain areas the aquifer is modeled at +/- 60ft difference in saturated thickness. Our hope is that the modeled results will reflect this change and give us a better product.

Project Activities for coming year:

Activities for the upcoming year will include model calibration of phase II of the project and assessment of the accuracy of the groundwater model with AEM data included. We will then determine the value of using AEM surveys to develop groundwater models by comparing

scenarios run in each version of the model. We hope to finalize this project in the coming months.

Reassessment of the Project Benefits:

Given the initial assessment of the AEM data compared to our phase I model, we think the benefits of using AEM data have already played an important role of aquafer mapping and modeling. As the project moves forward, we think those benefits will become more and more apparent.

Summary:

The MRNRD basin model has been completed to approximately 90% completion. The GUI tool has also been complete, and we are being trained in the uses and abilities of this tool. We look forward to seeing how AEM compares traditional model development techniques and the additional impacts they have on making water management decisions.