

## WSF 2025 Final Report # 10020

**PROJECT:** Lower Loup NRD Buffalo County Area Groundwater Model  
– WSF Application #10020 (awarded October 19, 2022)

**DATE:** MARCH 31, 2025  
(FIRST ANNUAL REPORT DUE ON  
OR BEFORE APRIL 1, 2025)

### **See Application 10020, Part 7 For Project Tasks Summary and Timeline**

#### PROJECT PROGRESS UP TO APRIL 2025:

LLNRD hired consultant, LRE Water, to complete the Buffalo County Area Groundwater Model (BC Model). This calibration of the localized water model, development of inflow estimates for the streamflow-routing package (SFR) package, and identification of major stream gages for this calibration. A five-layer model grid was created in Leapfrog Works and incorporated into Groundwater Vistas. Adjustments to the SFR were made based on historical stream gauge readings. A first draft of the “Buffalo County Area Groundwater Model Report” was submitted for review to LLNRD staff on December 24, 2024. In this document, 3 example management scenarios were used to test the groundwater model including: 1) stream diversion into an identified managed aquifer recharge area, 2) a theoretical pumping capacity increase on an area industrial well, and 3) a change in pumping allocations on all irrigation wells within the modeling area. Each of these scenarios gave LRE Water an opportunity to document how the model analyzed the theoretical management changes and examined the results which provided considerations and limitations for LLNRD staff to consider going forward. On January 23, LRE Water presented the model and results of the various scenarios to the staff and Board of Directors. The final report was delivered to LLNRD in January 2025 and all invoices were submitted by March 2025.

#### ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2025:

The project is considered complete for this annual report. A revised final report was submitted to the LLNRD, and a presentation was given to the Lower Loup NRD Board of Directors at their January Board Meeting. All modeling files have been shared with LLNRD staff for their use.

#### ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

The LLNRD paid \$275,000 to LRE Water (Inc) for WSF Grant Assistance Services including modeling figures from AGF AEM data.

The first reimbursement request was submitted in March 2024 for the 1<sup>st</sup> half of the project. The reimbursement total was for \$109,562.68 and includes both 40% sponsor share (\$43,825.07) and 60% WSF share (\$65,737.61).

The second reimbursement request is submitted in March 2025 for the 2<sup>nd</sup> half of the project. Reimbursement total was for \$165,437.32 and includes both 40% sponsor share (\$66,174.93) and 60% WSF share (\$99,262.39).

**\$0** – The LLNRD and WSF have paid all remaining funding obligations towards this project under grant #10020.

#### LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 10020 WILL BE REALIZED:

The project tasks have been completed as scheduled. Based on previous experience with working through the WSF, the project achieved all benefits described in the original application.

Staff at the LLNRD and LRE Water are available to discuss this project further, should the need arise.