

## WSF 2021 Annual Report #5243

Project: **Lower Elkhorn Natural Resources District's District Wide Groundwater Model – WSF Application #5243**

Date: 3/30/2022

### PROJECT PROGRESS TO DATE:

#### Lower Elkhorn Model – Phase 2B

- The project team worked with NeDNR to obtain data from the Lower Platte Missouri Tributaries (LPMT) watershed model to assist with the transient model calibration. Obtained Version 8.0 LPMT watershed model data from NeDNR and The Flat Water Group.
- NeDNR accepted the steady state model, allowing construction to begin on the transient model in January 2021.
- The steady state model was complete as of December 2020. Model files were provided to NeDNR.
- LRE Water Inc. completed the construction of the hydrogeologic framework, and migration of data files into LEAPFROG.
- Upon receipt of the LEAPFROG data files, Long Spring Consulting accelerated their progress on the construction of the LENRD transient state groundwater model. LRE Water Inc. delivered the final version of the Hydro Assessment Map Book Report to the LENRD on July 7, 2021.
- Long Spring Consulting, in cooperation with NeDNR, conducts some calibration tests of the LENRD transient state groundwater model, and provides feedback to all project partners.
- LENRD staff conduct field observations at several locations within the modeling area to “ground-truth” stream segment flows to compare with model outputs.
- After consultation with project partners, calibration adjustments are refined to better represent observed conditions
- Final draft of the Lower Elkhorn Natural Resources District Groundwater Model Report is provided to the LENRD in February 2022.
- Suggestions for edits were provided by the LENRD, and were integrated into the final draft, before sharing with NeDNR for their consideration.
- Model construction is complete, and the only remaining step will be final approval of the model report.
- Multiple full and partial group meetings were conducted with the project team (JEO, LRE Water Inc., and Long Spring Consulting), LENRD, and NeDNR since the last report and were scheduled to provide both quarterly updates, and on an as needed basis. The group utilized Microsoft Teams to conduct these conversations virtually, which provides many scheduling benefits.

### Model Application Tool

- As of February 2021, the project team has worked with LENRD to move the GUI to a cloud-based platform, rather than the desktop-based application that was originally scoped.
- Work began on the Graphic User Interface (GUI) in December 2020 including a prototype of the cloud-based GUI was shared with the team.
- Customization of GUI to meet LENRD water management needs and provide contract modification for cloud space purchase and GUI O&M.
- On February 23, 2022, Long Spring Consulting provided a virtual training of the GUI to LENRD, NeDNR, and UNL Conservation & Survey staff members. The consultant provided an overview and demonstration of the available tools and options, and requested feedback for adjustment and/or improvement.
- March 7, 2022 – feedback on the GUI has been provided to Long Spring Consulting, and the partners are awaiting the updated version.

### Final Report and Hydrogeologic Framework Report

- The final hydrogeologic assessment report text was provided to the LENRD staff in July 2021.
- March 24, 2022 - JEO has submitted the final project invoice to the LENRD for payment, and a check will be remitted to the consultant upon satisfaction of any remaining tasks.

### ANTICIPATED ACTIVITIES FROM April 1, 2022 – June 30, 2022:

#### Lower Elkhorn Model

- NeDNR is currently reviewing the final model report and upon receipt of any suggestions for edits the final report will be submitted to the LENRD (estimated no later than May 1, 2022).

#### Model Application Tool

- The cloud-based GUI has been provided to the LENRD and NeDNR, and Long Spring Consulting is reviewing feedback and suggestions for improvements (estimated completion – within 60 days).

#### Final Report and Hydrogeologic Framework Report

- A final deliverable will include the final model report, and modified graphic user interface (GUI). All cross-sections and maps have been received.

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

- To date, \$179,496.00 in grant funds and \$119,664.00 in LENRD matching funds have been expended for a total of \$299,160.00. The remaining \$22,104.00 in grant funding and \$14,736.00 in match is anticipated to be spent before the close of the fiscal year (no later than June 30, 2022).

LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 5243 WILL BE REALIZED:

- It is expected that all the original project benefits will be achieved as described in the application in addition to the benefit of a cloud-based GUI.