WSF Final Report #5243

Project: **Lower Elkhorn Natural Resources District's District Wide Groundwater Model – WSF Application #5243**
Date: 3/29/2023

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
- First 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.
- July 2022 – The final version of the Lower Elkhorn Natural Resources District Groundwater Model Report is delivered by Long Spring Consulting, prepared in partnership with JEO Consulting Group (JEO) and Leonard Rice Engineers (LRE).

Model Application Tool – Graphic User Interface (GUI)

- 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.
- August 2022 – Long Spring Consulting provides the final version of the GUI to the LENRD. A staff training exercise was conducted, which allowed for the testing of the GUI for comparison purposes.
- November 2022 – An additional virtual training exercise was facilitated by Long Spring Consulting with LENRD staff.

Final Model 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.

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).
- July 2022 – Receipt of Final Model Report

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).
- February 2022 – Virtual Training of cloud-based GUI
- August 2022 – Modified version of GUI is made available to LENRD staff, and a virtual training exercise is facilitated by Long Spring Consulting
- November 2022 – Additional virtual training is facilitated with LENRD staff to explain model scenario outputs

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.

FINAL REIMBURSEMENT SUBMITTED:

- The remaining $20,844.00 in grant funding was submitted for reimbursement on March 28, 2023 to close out the grant. Bringing the total amount requested to $201,600.00.

BENEFITS PROJECTED IN APPLICATION 5243 WERE REALIZED:

- All the original project benefits, as described in the application, in addition to the benefit of a cloud-based GUI, have been realized.