Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee

From: Paul W. Woodward, PE, Groundwater Management Engineer

Date: July 7, 2022

Re: Water Sustainability Fund Grant Application for the Lower Platte NRD's AEM Groundwater Modeling

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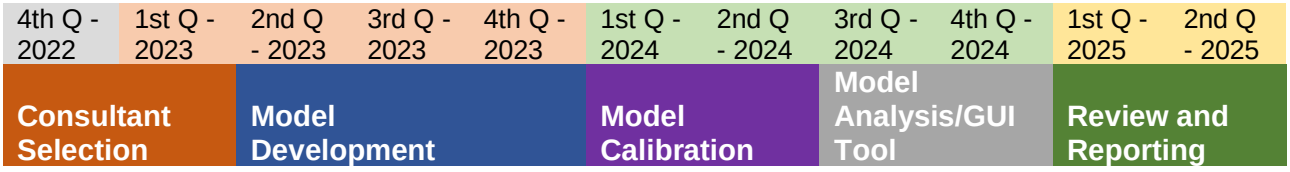
In 2021, the P-MRNRD in cooperation with Lower Platte North NRD received a WSF grant for $168,000 to complete a 3D hydrogeologic framework using all available AEM data within our collective NRDs. This project helped convert AEM data into geologic layers that can be feed into groundwater modeling software and used to improve the accuracy and results of regional groundwater models. Results from this framework project were completed in early 2022. Lower Platte South NRD has now received a separate WSF grant and plans to have their AEM data ready for groundwater modeling in 2023.

The Lower Elkhorn NRD has used their AEM data for this purpose and is in the process of completing a groundwater model for their entire NRD. Nebraska DNR is participating with the LENRD in this modeling process as an update to their Lower Platte-Missouri Tributaries groundwater model (which did not incorporate any AEM data). Staff from the Lower Platte NRDs have met and coordinated with NDNR and believe that developing a similar groundwater model(s) for the three NRDs will vastly improve the hydrologic assessment used by NDNR to determine hydrologically connected groundwater and surface water. An accurate groundwater model(s) based on AEM data will also be very useful for each NRDs internal processes and future assessments.

NRD staff has contacted the consulting team who developed the LENRD model (JEO Engineering in association with LRE and Long Spring Consulting) and they have prepared a preliminary scope of work and cost estimate for all three NRDs to: 1) Develop one or two 3D geologic models, 2) Calibrate each model to historic data, 3) Complete a regional stream depletion analysis, 4) Develop a GUI interface that will allow NRDs to effectively modify and utilize the models in the future, and 5) Provide a full report of the methods and outcomes. The estimated costs based on this preliminary scope for all three NRDs is $660,000 (including a 10% contingency) and a preliminary schedule is shown below:



The group of Lower Platte NRDs and NDNR are recommending a joint WSF grant application be submitted for this modeling project by the end of July. NDNR has also agreed to support the grant application and provide funding equal to that of the combined NRDs funding. The PMRNRD would serve as the primary applicant for the grant and handle administrative duties as part of a future interlocal agreement.

The projected cost-share for the grant application is:

NRD	Total	NDNR	WSF Balance	WSF	NRDs
Papio	$ 220,000.00	$ 62,833.33	$ 157,166.67	$ 94,300.00	$ 62,866.67
LPS	$ 220,000.00	$ 62,833.33	$ 157,166.67	$ 94,300.00	$ 62,886.67
LPN	$ 220,000.00	$ 62,833.34	$ 157,166.66	$ 94,300.00	$ 62,886.66
Total	$ 660,000.00	$188,500.00	$ 471,500.00	$ 282,900.00	$ 188,600.00
	% Share	28.6%		42.8%	28.6%

Staff recommends that the subcommittee recommend to the Board of Directors that the General Manager be authorized to execute and submit a Water Sustainability Fund application for the Lower Platte NRD's AEM Groundwater Modeling project, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.