

Agenda Item: 8.

## Memorandum

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

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

**Date:** July 7, 2017

**Re:** Review and Recommendation on the Water Sustainability Fund Grant Application for ENWRA Airborne Electromagnetic Surveys

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The District has been a partner of the Eastern Nebraska Water Resources Assessment (ENWRA) project for 10 years. During this time, ENWRA projects have provided valuable insight into the complex geology found in Eastern Nebraska and our District. Airborne Electromagnetic Survey (AEM) flights completed in the spring of 2015 included several cross sections flown in western portions of our NRD shown as red lines in Figure 1. Last year, the District along with support from ENWRA and a Water Sustainability Fund (WSF) grant completed a detailed AEM survey in Sarpy County, shown as a grey shaded area in Figure 1.

Now with the Interlocal Agreement extended through 2022, the ENWRA long-range plan identifies future objectives and projects to be collectively completed through ENWRA in each of the NRDs. One such project area in the P-MRNRD is to map the extents of the paleovalley that exists in the southern half of Washington County from near Arlington to the edge of the bluffs at the Douglas/Washington County line. A three mile grid of this area would provide the minimum cross sectional data necessary to determine the extents of these sand and gravel deposits. Extending the grid into northern and western Douglas County will provide tie-ins to previous AEM surveys and help map geology in areas before they become urbanized and can no longer be flown. This proposed survey, shown as green lines in Figure 1, is estimated to cost approximately \$230,000.

ENWRA is currently in the process of preparing one large Water Sustainability Fund application for all six of the NRDs to complete AEM surveys in their Districts. The total anticipated project cost is \$3,280,000, including the P-MRNRD's \$230,000. The application would request 60% from WSF or \$1,968,000 and the remaining \$1,312,000, or 40%, would come from each of the Districts based on their survey costs. Therefore, the P-MRNRD's required contribution would be \$92,000 broken up over fiscal years 2018, 2019, and 2020 with \$138,000 available from the grant.

**Staff recommends that the subcommittee recommend to the Board of Directors that the General Manager be authorized to execute and submit a joint Water Sustainability Fund application through ENWRA for 60% of eligible project costs necessary to acquire the proposed AEM survey data for southern Washington County and northern and western Douglas County, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.**

# Figure 1 - Proposed 2018 AEM Survey

Included as part of  
ENWRA WSF Grant  
Application

**Legend** Valley

- 2015 AEM Survey
- 2016 AEM Survey
- Paleovalley
- Proposed AEM Survey

