

WSF 2021 Annual Report # 4164

PROJECT: Nebraska GeoCloud (NGC) and Airborne Electromagnetic (AEM) Data Integration – WSF Application #4164 (awarded December 2016)

DATE: MARCH 24, 2021
(ANNUAL REPORT DUE ON OR BEFORE APRIL 1, 2021)

See Application 4164 Section D #2 For Project Scope Summary, Timeline and Acronyms

PROJECT PROGRESS APRIL 2020 TO APRIL 2021:

Continued the advancement of the back and front ends of the Nebraska GeoCloud (NGC) tailored to the unique characteristics of Nebraska data and the needs of stakeholders using I-GIS' development and software services. Uploaded statewide AEM datasets and supporting geologic data (boreholes, shapefiles, 2D grids etc.) to the Nebraska GeoCloud Platform. Established the Geoscene3D Nebraska Portal Viewer license which pulls data from the NGC in a standardized environment for 3D visualization and made it available to the project stakeholders. CSD and USGS completed collaborations on borehole, groundwater, and AEM datasets and documenting recommended methods and procedures for hydrogeological mapping with AEM in Nebraska. **Guidelines** for *Airborne Electromagnetic (AEM) Surveys, Data Integration, and Hydrostratigraphic Modeling in Nebraska* and **Standards** for *Data and Model Reporting in the Nebraska GeoCloud* are now available online on CSD's Nebraska GeoCloud webpage (<http://snr.unl.edu/csd/geology/nebraskageocloud.aspx>). The **Guidelines** and **Standards** for the NGC were also presented in a webinar on July 1, 2020 (<https://youtu.be/8YrPwk6lIm8>). The NGC platform went live in July 2020 and a "how to" webinar was provided on August 27, 2020 (<https://youtu.be/xk09q4wJX3k>). A 9-person advisory group made up of project partners was formed to steer the continued use and further development of the NGC. Additionally, the 10 participating NRDs signed a two-year extension to the interlocal agreement for maintaining and developing the NGC through June 30, 2022.

ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2022:

Continued presentations, collaborations and use of the data through the Nebraska GeoCloud are anticipated. Additionally, upload of the newest AEM datasets collected in the summer of 2020 in Nebraska (WSF#5238 in the P-MRNRD, #5249 in the MRNRD and #5255 in the NNRD) are also planned for upload in 2021.

ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

Claims 1-8 so far have totaled \$230,971.12 received from WSF on the project. One more claim, claim #9, requesting the last **\$16,466.48** of the total \$247,437.60 project award (60% of the \$412,396 project expenses not including USGS coop funds) is anticipated in 2021 before the end of the next reporting period.

LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 4164 WILL BE REALIZED: Based on the **Guidelines** and **Standards** postings and NGC platform accessibility (statewide AEM datasets and supporting geologic boreholes, shapefiles, reports, and grid files) now available at: <http://snr.unl.edu/csd/geology/nebraskageocloud.aspx>, the project achieved the benefits as described in the application. Over 25,000 line miles (40,000 line kilometers) of statewide subsurface AEM data has been inventoried and secured in a digital archive for long-term data security. The creation of the live NGC Platform and 3D visualization Portal Licenses will facilitate collaborative characterization of Nebraska's groundwater resources and provide long-lasting statewide benefits.