

MINUTES
ENWRA Technical Committee Meeting
Thursday, July 23, 2020 3 to 5 pm
Virtual Zoom meeting
Eastern, Nebraska

Attendees (~17):

Annette Sudbeck (Lewis and Clark NRD [LCNRD]), Myles Lammers (LCNRD), Amanda Flynn (US Geological Survey [USGS]), Jesse Bradley (Nebraska Department of Natural Resources [NeDNR]), Jesse Winter (NeDNR), Chuck Wingert Nemaha NRD (NNRD), Brian Bruckner (Lower Elkhorn NRD [LENRD]), Dan Schulz (Lower Platte South NRD [LPSNRD]), James Cannia (Aqua-Geo Frameworks, LLC [AGF]), Jared Abraham (AGF), Daryl Andersen (Lower Platte North NRD [LPNNRD]), Dana Divine (University of Nebraska-Lincoln, School of Natural Resources, Conservation and Survey Division [UNL CSD]), UNL CSD field laptop user, Matt Joeckel (UNL CSD), Jesse Korus (UNL CSD), Paul Woodward (Papio-Missouri River NRD [P-MRNRD]), Katie Cameron (Eastern Nebraska Water Resources Assessment [ENWRA] Coordinator/UNL CSD)

Technical Packet Review (see attached PDF for background detail on discussion topics):

Budget: Updates reviewed, no comments

AEM Updates [see critical email communications the week of August 3, 2020]: **UPDATE:** August 13th 2020 flights began in NNRD, August 17th 2020 crews moved to P-MRNRD, and flights wrapped up August 23rd 2020 in P-MRNRD. Preliminary profiles and 3D fence views were provided by AGF and are loaded on the ENWRA Dropbox.

Data Management: Flight line renaming shapefile deliverable for each NRD was going to be for both the Nebraska GeoCloud (NGC) as a shapefile product and for each of the NRDs to use to find all available flight line report pages for certain areas. Coordinator will run complexities/ramifications of attributing, clipping and buffers with Darcy's datasets, as flown datasets, and data deliverables in a consistent manner by Shaula and/or Chris Poole. AGF also offered up doing the flight line shapefile work since they already have programming that can generate shapefiles directly from the data. Coordinator will check with NGC advisory group on methods preferred for the NGC – maybe will need to be two separate products: one of NRDs, one for NGC. The LENRD indicated their district buffer was 5-miles for the groundwater model work. Visited the ENWRA website to show the data management links on screen and to point out other updates made to the website. Draft tutorials for using the AEM Google Earth datasets are ready for the technical committee to review and consider if we need to pay for better screen share software (planned as live link buttons that take you to the videos – they are in 3 short parts).

Pilot Study Sites: Papio-Missouri River is working with contractor for other wells needing repairs in the district and will make repairs on ENWRA Ashland site wells (like an extension of that \$20,000 from last fiscal year where around \$7,000 was spent with the well replacement work after FEMA aid, ENWRA reimburses PMRNRD by check for Ashland pilot site work).

Water Sustainability Fund (WSF) Natural Resources Commission (NRC) Projects: Status due in March 2021

- Award **#4125** – Secondary Bedrock Sampling and Age Dating: Amanda Flynn of the USGS provided an update to the group. The draft report and associated presentation should be ready by the end of September 2020 to close out the Water Sustainability Fund (WSF) grant.
- The Award **#4164**- the Nebraska GeoCloud (NGC): Jesse Korus gave update on upcoming August 27th, 2020, how to access the Nebraska Viewer [15 licenses – one for each interlocal NRD plus agencies], GeoCloud and guidelines and standards – consider them ready to cite in upcoming contracts (they will

evolve but are ready now - <https://snr.unl.edu/csd/geology/nebraskageocloud.aspx>). Paul Woodward indicated that PMRNRD was planning to include language in a potential contract for his July 2020 WSF application project.

ENWRA Partner Agency Updates and Proposed Activity Discussions:

- **NeDNR** –Jesse Bradley expanded on the NeDNR stream gage software with unused ports available for data storage and serving that could be used for handling some groundwater time series data NRDs are collecting (APIs can handle telemetry). LENRD indicated they are working on a radio based telemetry system (includes an ENWRA Oakland well location) but having issues with antennae access and signals for the whole District coverage. There was discussion on understanding how the NeDNR API works with telemetry networks and depending on the level of interest from the NRDs, down the road the website could be developed to accommodate the NRD data.
- **AGF** – suggested packaging each NRD’s AEM like was done for LCNRD and providing a Dakota bedrock aquifer package (interpreted products for the NGC like provided in previous reports but specifically for the Dakota - features of resistive sediment packages and indications of salt water both pop-out in the AEM data). Jim and Jared provided more details and answered questions. Paul Woodward indicated his district would be interested since they have many private domestic wells installed in the Dakota. Dan indicated the LPSNRD has Dakota interests also. There was discussion from Jesse Korus and Matt Joeckel indicating pitfalls with interpreting the complex stratigraphy of the Dakota and careful use of the word delta because many of the eastern Nebraska Dakota deposits are incised valley fills and some are bayhead delta deposits. Also, the bayhead delta setting predicts different facies changes compared to incised valley fills so Matt and Jesse offered up their expertise for consultation where the stratigraphy is concerned. Additionally, CSD test hole efforts on the Dakota was reviewed with the group. Several test holes are still in evaluation and scheduled for advancement in the Dakota across ENWRA with one core completed in the LPSNRD last year and potentially others planned (cautions were also mentioned on CSD coring deep through the Dakota). AGF indicated they would put together a menu of scope details with costs for the partners to review.
- **USGS** - proposed next steps to the Age-dating project using the AEM data existing for the ENWRA area in conjunction with existing quality and age parameter data. This would be a seed money idea around \$25,000 ENWRA funds similar to the episodic recharge project but developed from the results observed with the Age-dating project getting all of ENWRA classified into low, moderate and high vulnerability categories using the AEM data and observing how well it aligns with actual lab data existing for those three area types. Amanda provided more detail regarding how the Dakota, Niobrara, and Paleozoic aquifers differed in chemistry from the WSF project showing trends and patterns and answered questions regarding what it might tell us regarding recharge. There was specific discussion on horizontal recharge and what the chemistry results evaluated with the AEM defined low, moderate and high classes for the area will tell us about recharge. Possible examples: results observations match or don’t match predictions, patterns pop out with certain parameters showing up with high concentrations in certain settings, or new boundary conditions are apparent, or results data suggests previously unknown flow/influence directions etc. – more detail to come in September).
- **Long Range Plan (LRP)** - LRP shortfalls? – we update every 2 years and have made much progress with Objective #2 (former AEM mapping list) over the last 3 updates. Coordinator completely missed reviewing of this topic after skipping to upcoming meetings review. Example slide was included in the packet after USGS summary showing a potential layout of

tracking LRP objectives with time (schedule with LRP objective codes on the left side [not filled in on the example but it would be]). **[Update:** coordinator could compile summaries from each NRD on “how districts are using ENWRA” on a routine basis like we do the LRP updates every other year (maybe more often than every two years – timing suggestions?). NRDs could use the updates to tie in what we have done with where we are going as a group with their own district plans – would help not lose our identity as a group and inform NRDs what others are doing related under ENWRA which they could evaluate better than the LRP document format as it currently is set-up]. **Suggestions/Comments?** [UPDATE after meeting comments just pick something and get started or will get behind because funding is delayed].

Upcoming Meetings/Discussions schedules:

- ENWRA update to each of the ENWRA NRD boards (ENWRA cycles these every two years). Scheduling preferences discussed:
 - LCNRD was for March 2020 but still thinking it could be combined with AEM report from 2018 flights with AGF (no rush to jump ahead on the list, thinking no sooner than Sept or Oct, could be open to a Zoom type presentation, would discuss)
 - PMRNRD would like after the 2020 flights are done, water committee
 - LENRD - after PMRNRD, LENRD doing in person meetings at this stage but LENRD board liked the Zoom format
 - Nemaha NRD – after the flights in the Nemaha, meetings are spaced out in person, Bob is retiring in March
 - LPSNRD – schedule with annual report meeting
 - LPNNRD Feb/March time frame (just did last update at end of Feb 2019 – last of the previous cycle)

Adjourn