Attachment 3
Nebraska’s Top 10 Water Challenges
(Source: Nebraska Water Center, rev. 8/21/15)

This listing is unranked. It also recognizes that several challenges may fit into more than one of the three sub-categories (e.g., challenge #7 - monitoring system, also has immediate water quantity implications, and #8 also poses water quality challenges); K-12 education/outreach are inherent and very important needs in all of these challenges:

**Water Quantity**

1. Effects of water consumption and conservation practices on instream-flows, groundwater recharge and water supplies, including ethanol production; realizing the maximum water use efficiency for irrigation (e.g., changing from gravity flow to center pivot) is a key factor.

2. Invasive species (e.g., purple loosestrife, salt cedar, Phragmites), particularly in riparian buffer strips and in stream channels.

3. Climate change, especially the impacts of global warming and increased climate variability, particularly the frequency and severity of droughts and floods on water availability.

**Water Quality**

4. Nitrate, uranium, arsenic, and pesticide contamination of drinking water supplies, and nitrate contamination of irrigation sources.

5. Non-point source (NPS) nutrient and sediment inputs in lakes, streams and reservoirs, including toxic algae treatment and prevention, and establishing maximum contaminant loadings (MCLs) for nutrients in Nebraska.

6. Potential surface and groundwater contamination by emerging contaminants (including endocrine disrupting compounds), such as steroid hormones, antibiotics, pesticides, surfactants, nanomaterials, and disinfectants, from grain and livestock production, biosolids application, biofuel production, and municipal/residential wastewater sources.

**Water Institutions**

7. Creating and supporting more comprehensive, ongoing, real-time water monitoring, including stream gauging and cyberinfrastructure networks linked to predictive models, readily accessible to the public and coupled with smart decision-support tools. Understanding the connection between surface and groundwater is especially important.

8. Aging water infrastructure, including drinking water distribution systems (especially in small rural communities), wastewater treatment, storm runoff, irrigation systems, dams, levees, and canals.

9. Water economics and water policy, including establishment of water markets and water banking, and recognition and development of water resources as a natural resource amenity for recreational use (including greater public access) and wildlife habitat.

10. Creation of effective social systems to influence individual and institutional behavioral change for sustainable management of water resources, including a viable legal framework, ongoing financial support, new water management systems, and increased collaborative solution development.