University of Nebraska Water Resources Advisory Panel – 2009 Priorities in Ranked Order (#1 being highest priority)

Water Quantity/Management Priorities

1. Develop methods to monitor and measure the consumptive use of water and develop methods to maintain beneficial use but reduce non-beneficial consumptive use
2. Study current water management concepts in Nebraska and research options for improving the relevance, efficiency, and effectiveness of current approaches
3. Identify methods to recognize the value of water for uses not easily monetized, such as recreation, aesthetic and wildlife uses
4. Identify methods to establish fair and equitable water market systems
5. Determine the impacts of climate change on Nebraska's water resources, especially in areas where demand is greater than supply, and increase understanding of these impacts. Develop an approach to identify actions that mitigate the potential impacts of climate change that may also have other supplemental water management benefits.
6. Identify effective social systems that achieve sustainable water resource management
7. Create and support more comprehensive, ongoing, real-time water monitoring protocols to ensure comparability and QA/QC of data
8. Study water and energy production connections - whether energy is produced by conventional steam plants, or by harvesting the sun in biomass, water and energy production are closely linked. A thorough understanding of this linkage, and the interactions and trade-offs to be considered in decision and policy making, is needed to ensure sound management of both energy and water resources.

Basin-specific Priorities

1. Quantify water supply and water demands for each Nebraska basin, beginning in the west
2. Identify opportunities for the conjunctive management of water, especially where surface water could be stored as groundwater until needed for compliance with surface water compacts
3. Determine the inter-relationship between surface water and groundwater supplies
4. Assess the impact of cyclical water supply (i.e., drought and wet weather) and identify better management options to reduce these impacts

Water Quality-related Priorities

1. Developing realistic Nebraska standards for Total Maximum Daily Loads (TMDLs) for nutrients in flowing waters
2. Managing the risk (mitigating) water contamination from livestock manures and land application areas – (contaminants: nutrients, microbial contaminants, hormones, pharmaceuticals, antimicrobial resistance genes, and other emerging contaminants)
3. Evaluating and measuring the effectiveness of riparian buffer strips (RBS), incl. narrow grass hedges, setbacks, wellhead protection areas and waterways, at reducing contaminants (incl. sediments) [note: a subset of ag contamination bullet]
4. Managing the risk (mitigating) water contamination from agricultural production (e.g., fertilizers, pesticides, herbicides, erosion, etc.)
5. Evaluating and measuring the effectiveness of wetlands and wetland vegetation on reducing water contamination
6. Other drinking water contaminants (of human health concern): nanomaterials, arsenic, uranium, pathogens, hormones, and pharmaceuticals
7. Human Dimensions of Water Quality – Developing and Implementing Effective Outreach Efforts and Measuring Their Impact
8. Water Quality in Urban Settings

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