

EXPERTISE

Nebraska Water Science Center

Real-Time and Laboratory Analyzed Water-Quality Monitoring

Surface water and groundwater monitoring:

- Ensure water used for consumption meets drinking water standards.
- Ambient monitoring of streams, rivers, and lakes.
- Monitoring of nitrates, pesticides, bacteria, sediment, other pollutants, and water-quality parameters.
- Instantaneous results available to the public through NWISweb. (National Water Information System; <http://waterdata.usgs.gov>)



Modelling

Groundwater and surface-water models including:

- Advanced regional and local numerical groundwater models which run on an extensive computer array.
- Multi-dimensional and steady and unsteady flow models.
- Flood inundation maps and flood insurance studies.
- Empirical and theoretical run-off models.
- Innovative and complex numerical optimization and parameter estimation techniques.



Sonar, Geophysical, and LiDAR Surveys

Advanced multibeam echosounder sonar unit:

- Hydrographic surveys, river and lake assessments.
- Rapid data collection and processing of data sets.

Geophysical surveying:

- Geologic framework, levee seepage and integrity, and canal leakage studies.
- Extensive datasets enhance groundwater models and geological framework studies.

Ground-based LiDAR:

- Rapid topographic and structures, and quantity surveying.



Sediment Transport/Geomorphology

- Monitoring and assessment of geomorphic change and sediment transport in constructed river side-channels and chutes.
- Empirical and theoretical sediment transport studies.
- Hydroacoustic streamflow measurement and sediment transport.



Mobile Laboratory

Advanced laboratory which includes

- Gas chromatography–mass spectrometry (GC-MS).
- Sample processing and analysis capabilities.