Approved: 3/10/2010
Date

MINUTES OF THE SENATE NATURAL RESOURCES COMMITTEE

The meeting was called to order by Chairman Carolyn McGinn at 8:30 a.m. on February 26, 2010, in Room 144-S of the Capitol.

All members were present except:
Senator Abrams - excused

Committee staff present:
Kristen Kellems, Office of the Revisor of Statutes
Corey Carnahan, Kansas Legislative Research Department
Raney Gilliland, Kansas Legislative Research Department
Grace Greene, Committee Assistant

Conferees appearing before the Committee:
Tracy Streeter, Kansas Water Office
Brownie Wilson, Kansas Geological Survey, University of Kansas

Others attending:
See attached list.

Tracy Streeter, Kansas Water Office, provided a briefing regarding the importance of geographic information systems (GIS) and light detection and ranging (LiDAR) data.

Brownie Wilson, Kansas Geological Survey, University of Kansas (Attachment 1) presented an informational presentation on geospatial data for decision makers and LiDAR. Mr. Wilson discussed the structure of the Kansas GIS initiative, LiDAR progress and examples, water rights data (WRIS), and the WIZARD database, which measures water levels, and provided examples of GIS-based data and applications.

Mr. Wilson stated that Kansas does not have a comprehensive, single source inventory of freshwater wells and a possible solution would be to create a master groundwater well inventory to index the independent well databases into a single accessible source.

Mr. Wilson took questions from the Committee.

Chairperson McGinn brought the minutes from February 11 and 12 to the Committee for approval. Senator Lee made a motion to approve the minutes. Senator Teichman seconded the motion. The motion carried.

The next meeting is scheduled for March 4, 2010.

The meeting was adjourned at 9:13 a.m.

SENATE NATURAL RESOURCES COMMITTEE

Guest Roster

Feb. 26. 2010
(Date)

Levi Henry	Sandstone Group LLC
Earl Lewis	KWO
Leigh Keck	Hein Law Firm
Brownie Wilson	Kansas Geological Survey
Paul Graves	Kansas Dept. of Agriculture
Ashley Doprita	Pinegar, Smith + Assoc.
John Donley	KLA

Please use black ink only!!

Geospatial Data for Decision Makers

Examples of GIS-Based Data and Applications

Kansas Senate Natural Resources Committee
February 26, 2010

Brownie Wilson
Kansas Geological Survey
University of Kansas

Kansas GIS Initiative- Structure

Kansas GIS Policy Board
Tracy Streeter – Chairperson
Director, Kansas Water Office
Denise Moore – Vice-Chairperson
Executive Branch CITO

State GIS Director – Ivan Weichert
Division of Information Systems & Computing (DISC)

Technical Advisory Committee
State, federal, & local government, regents institutions, and private sector

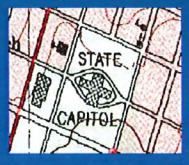
Data Access & Support Center
Kansas Geological Survey
University of Kansas

Planning Committees
Combination of GIS staff & discipline experts

Committees include:
- Elevation data committee
- Imagery data committee
- Water data committee
- Land surface, geology, soils data committee
- Height Modernization team

LiDAR Elevation Data

- LiDAR = Light Detection and Ranging
- Generally airborne
- Measures the elevation of underlying objects
- High data resolution



7.5 Minute USGS Topographic Map with 10' contours

Raw LIDAR points capable of producing 2' contours
Source: Kansas State University, 2008

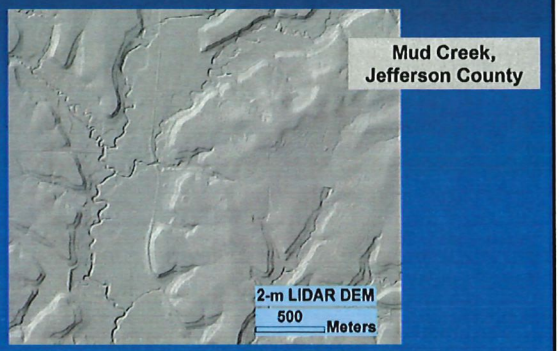
LiDAR Progress

Source- Kansas Water Office

LiDAR- Application Example

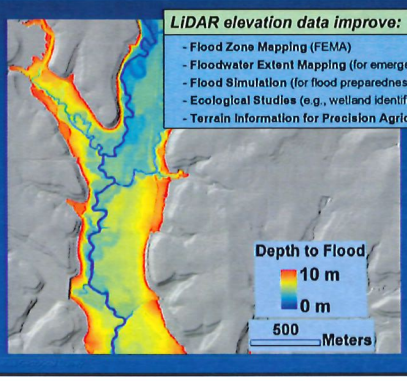
- Kansas Biological Survey's (KBS) Flood Inundation Mapping Project
- Identifies flood prone areas based on river flood stages and land surface elevation
- Not intended to replace traditional surveying methods
- For more information contact Jude Kastens at jkastens@ku.edu

KBS Flood Inundation Mapping Project

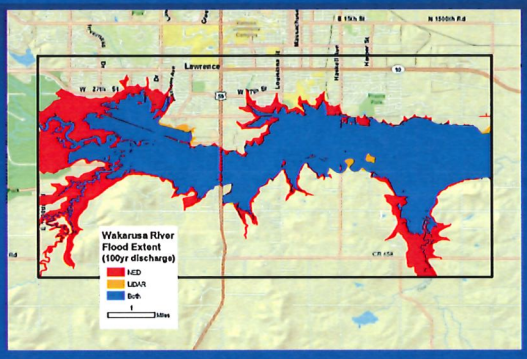


SENATE NATURAL RESOURCES
2-26-10
Attachment 1 – 1

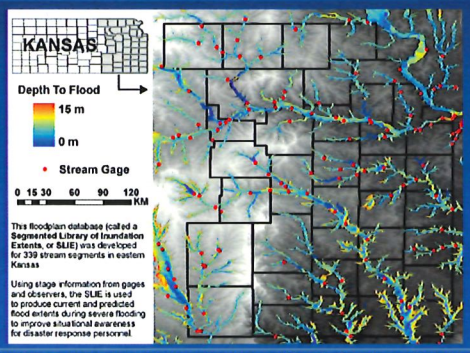
KBS Flood Inundation Evaluation



KBS Flood Inundation Evaluation



KBS Flood Inundation Mapping Project



http://www.kars.ku.edu/geodata/maps/depth-flood-eastern-kansas/

ImageServer

- DASC archives over 5 terabytes (5,000 gb) of aerial and satellite imagery
- Serves the data over the Internet
- Includes both state-wide and local sources
- Support for multiple software platforms

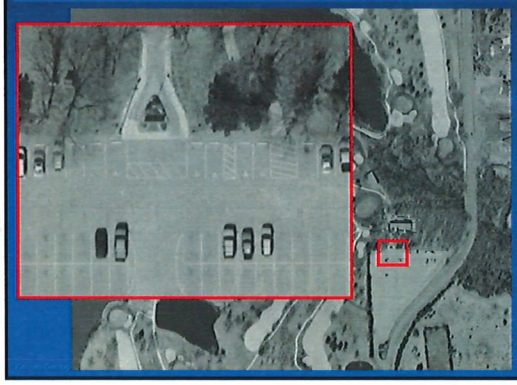
ImageServer- Black and White

ImageServer- Color

ImageServer- Infrared

ImageServer- Local (Shawnee County)

ImageServer- Local (Shawnee County)



Power of the Point

Most aquifer properties and characteristics are estimated from point-based sources (e.g., ground-water wells)

Kansas Primary Ground-water Well Repositories

WWC5

- Kansas Department of Health and Environment
- Water Well Records, lithologic logs
- Required submission by drilling companies since 1974
- Currently, the most comprehensive inventory

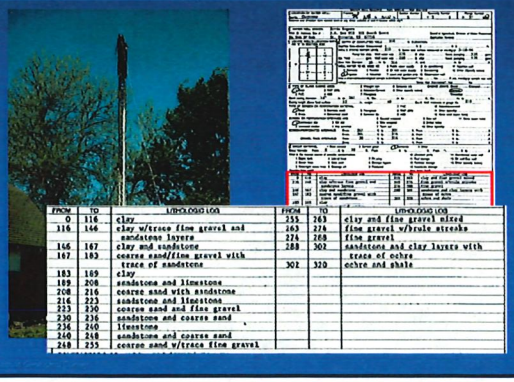
WRIS (WIMAS)

- Kansas Department of Agriculture, Division of Water Resources
- Water Rights Information System
- Water right allocations and historic water use

WIZARD

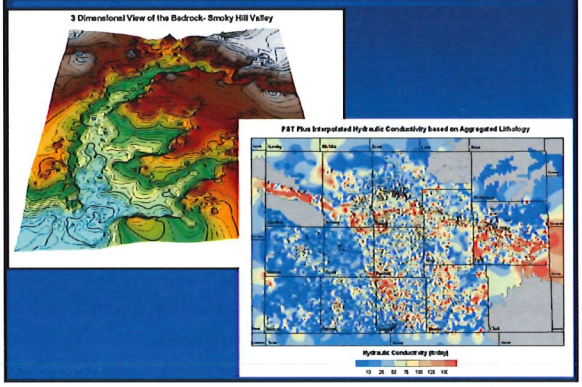
- Kansas Geological Survey
- Water Information System and Retrieval Database
- Database of depth to water measurements

WWC5- Lithology Data

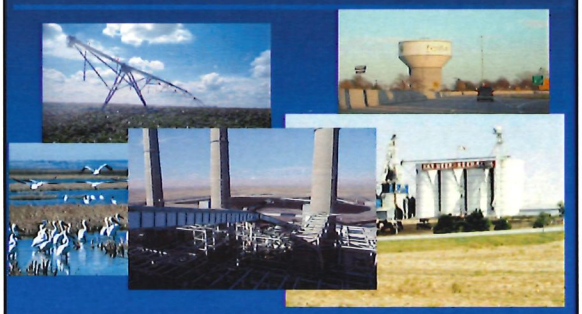


FROM	TO	LITHOLOGIC LOG
0	116	clay
116	146	clay w/trace fine gravel and sandstone layers
146	167	clay and sandstone
167	183	coarse sand/fine gravel with trace of sandstone
183	189	clay
189	208	sandstone and limestone
208	216	coarse sand with sandstone
216	223	sandstone and limestone
223	230	coarse sand and fine gravel
230	236	sandstone and coarse sand
236	240	limestone
240	248	sandstone and coarse sand
248	255	coarse sand w/trace fine gravel
255	263	clay and fine gravel mixed
263	274	fine gravel w/brwn streaks
274	288	fine gravel
288	302	sandstone and clay layers with trace of ochre
302	320	ochre and shale

WWC5- Applications

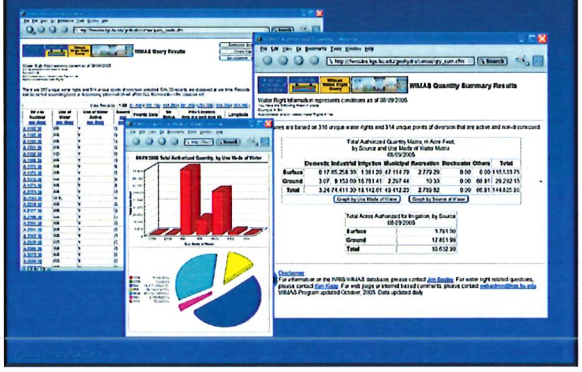


WRIS- Water Rights Data

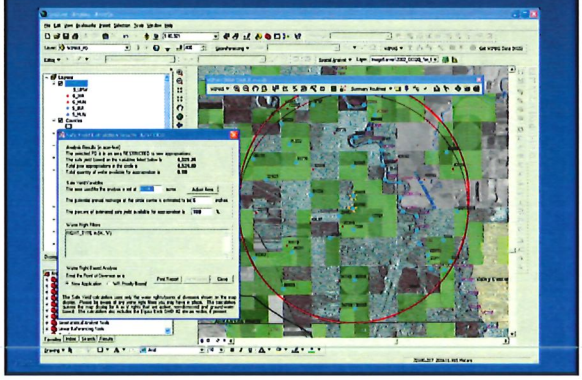


Water rights are highly regulated in terms of authorized amounts, places of use, reported usage, etc…

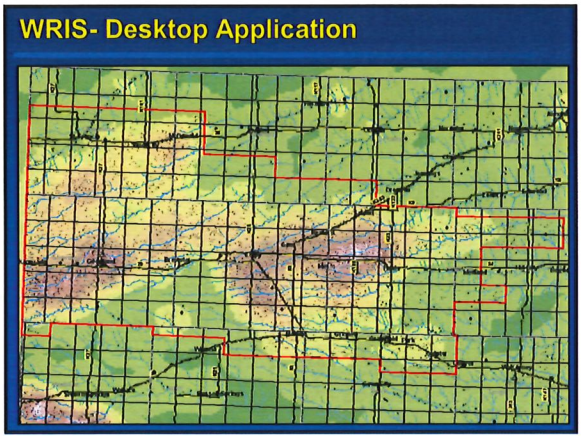
WRIS- WIMAS Web Application



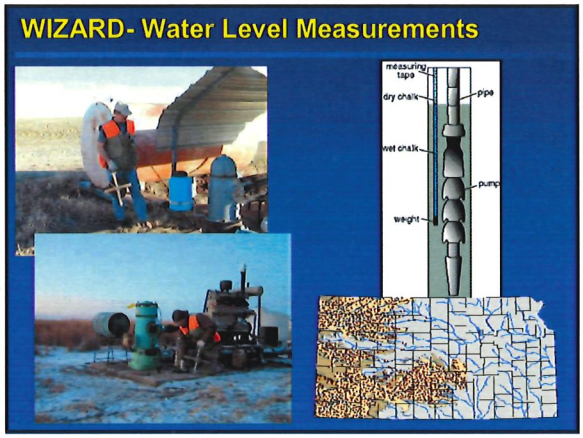
WRIS- Desktop Application



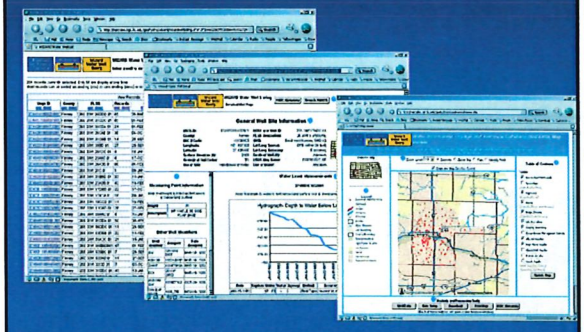
WRIS- Desktop Application



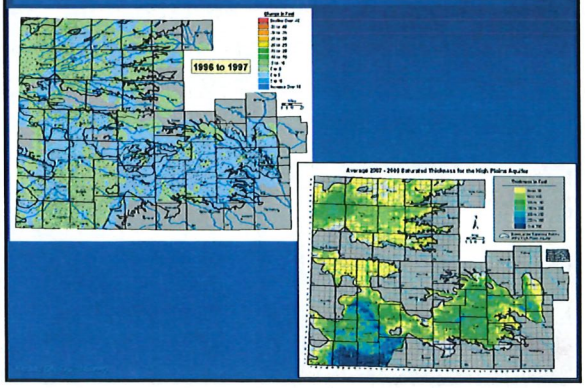
WIZARD- Water Level Measurements



WIZARD- Web Application



WIZARD- Desktop Applications



Master Well Inventory- The Issue

Kansas does not have a comprehensive, single-source inventory of freshwater wells in the state.

- State, Local, and Federal agencies independently maintain their own databases
- Each database is attributed with information relevant to the agencies' mission and responsibilities
- Single well locations are replicated across databases without coordination

A Possible Solution

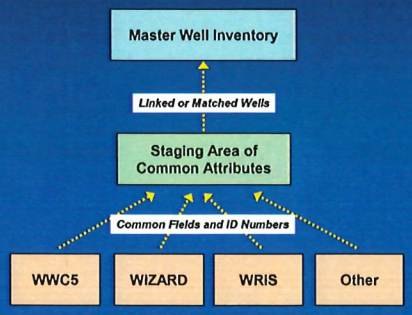
Kansas does not have a comprehensive, single-source inventory of freshwater wells in the state.

- State, Local, and Federal agencies independently maintain their own databases
- Each database is attributed with information relevant to the agencies' mission and responsibilities
- Single well locations are replicated across databases without coordination

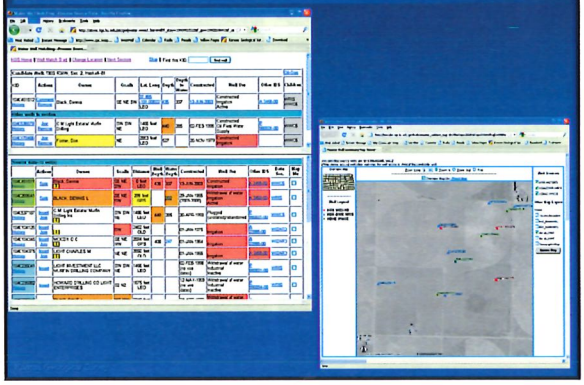
Create a stand-alone, master ground-water well inventory that indexes the independent well databases into a single accessible source.

An Example

Well Matching Methodology



Master Well Inventory- Matching Interface



Concluding Remarks

- Kansas is GIS data rich because of the foundation laid by the GIS Policy Board and State Water Plan Fund
- DASC is the State's GIS repository archives and serves massive amounts of spatial data
- In the hands of GIS professionals, this data can readily be turned into information

Questions????

Kansas Geological Survey/
Data Access and Support Center
1930 Constant Ave
Lawrence, KS 66047
785-864-2118

Visit our site at

http://www.kgs.ku.edu

http://www.kansasgis.org/