

MINUTES OF THE SENATE NATURAL RESOURCES COMMITTEE

The meeting was called to order by Chairman Carolyn McGinn at 8:30 a.m. on January 22, 2009, in Room 446-N of the Capitol.

All members were present except:

Senator Steve Morris- excused

Committee staff present:

Alissa Vogel, Administrative/Committee Assistant
Corey Carnahan, Kansas Legislative Research Department
Raney Gilliland, Kansas Legislative Research Department
Jason Thompson, Revisor of Statutes Office

Conferees appearing before the committee:

Terry Holdren, Kansas Farm Bureau
Rick Brunetti, Director of the Bureau of Air and Radiation, Kansas Department of Health and Environment
Miles Stotts, Environmental Scientist, Monitoring and Planning Section of the Bureau of Air and Radiation, Kansas Department of Health and Environment
Tracy Streeter, Director, Kansas Water Office; Chairman, GIS Policy Board
Ivan Weichert, GIS Director, Kansas Information Technology Office
Ken Nelson, Manager, Kansas Data Access and Support Center, Kansas Geological Survey

Others attending:

See attached list.

Terry Holdren, Kansas Farm Bureau, requested a bill introduction that would establish the Surface Owners Notice Act. The bill would require a minimum of 5-days notice to the surface owner prior to a major oil and gas operation on the surface real estate and includes a provision for a waiver. A motion was made by Senator Bruce to introduce the bill. Senator Taddiken seconded the motion, and the motion carried. (Attachment 1)

At the request of the Committee, Rick Brunetti, Director of the Bureau on Air and Radiation, provided a report on air regulations the Bureau presently has in progress. (Attachment 2) He introduced Miles Stotts, Environmental Scientist for the Monitoring and Planning Section of the Bureau of Air and Radiation, who oversees the updating of air regulations. Mr. Stotts presented a summary of the report and addressed questions Committee members had regarding the content of the report.

A majority of air regulations in progress are updates or implementations of federal requirements and regulations. They include regulations relating to: Kansas City ozone, updates to federal requirements, permitting (construction and operating), transportation conformity and acid rain.

The Bureau on Air and Radiation has submitted a maintenance plan in order to maintain the air quality at acceptable levels in the Kansas City area. The regulations target nitrogen oxide reductions in two main areas including: point sources with greater than 100 tons emissions per meter and mobile sources, specifically idling reductions of large, heavy duty diesel engines.

They have adopted many regulations, by reference, in order to maintain the integrity of the state program against the federal program. The Bureau of Air and Radiation has modified the definition of Commercial Chemical Plant that will increase the level of emissions from ethanol plants from 100 to 250 tons per year as a threshold for a Federal Prevention and Significant Deterioration (PSD) permit. In terms of operating a state air quality program, the Bureau is required to adopt, by reference, EPA revisions of regulations including: New Source Performance Standards (NSPS), National Emissions Standards for Hazardous Air Pollutants and Maximum Achievable Control Technology (MACT) standards from July 1, 2005, through June 30, 2008.

CONTINUATION SHEET

Minutes of the Senate Natural Resources Committee at 8:30 a.m. on January 22, 2009, in Room 446-N of the Capitol.

The Bureau of Air and Radiation is working to implement streamlining for routine permitting activity to point resources to match emissions. The proposed permitting rule package includes: updating definitions and lists to be consistent with federal requirements, streamlining public notice requirements for nonmajor sources, clarifying notice requirements for major sources and streamlining both construction and operating (major and nonmajor) permit and approval processes.

In terms of transportation regulations, updates are needed to ensure that state requirements match federal requirements, ensuring availability of federal transportation funds, particularly in the Kansas City metropolitan area.

Acid rain regulations are largely administered by the EPA. The Bureau of Air and Radiation updates and adopts federal acid rain permitting requirements and is responsible for oversight of state agencies' compliance with federal regulations.

Mr. Stotts stood for questions. A request was made for a report on regulations included in the Sheltered Boiler Initiative; a voluntary inventory in which all major operating sources emitting over 25,000 tons submitted estimates of greenhouse gas emissions.

Tracy Streeter, Director of the Kansas Water Office and Chairman of the GIS Policy Board, provided an overview of the State of Kansas Geographic Information Systems (GIS) Initiative. ([Attachment 3](#)) The GIS Policy Board, established in 1989, has led the initiative in creating a network for agencies to consolidate and coordinate GIS practices at the state and federal level. The policy board establishes standards for GIS technology in an effort to save resources and reduce costs that would be involved if each agency developed its own technology independently.

The GIS Policy Board is comprised of members from both the state and federal government, city officials, universities, tribal institutions and private industry.

Mr. Streeter introduced Ivan Weichert, GIS Director of the Kansas Information Technology Office and Ken Nelson, manager of the Kansas Data Access and Support Center, who explained the GIS Policy Board's strategic planning recommendations. Mr. Weichert explained their strategy was to communicate with local governments and state agencies the most important issues facing the state of Kansas regarding GIS technology, emphasizing the need for local, rather than federal data. Local imagery is capable using Light Detection and Ranging Imagery (LIDAR). The LIDAR technology was developed to increase accuracy of imagery capturing the earth's surface. The objective is for local agencies to collaborate in data acquisition, rather than opting for a more costly statewide imagery project.

The GIS Policy Board is currently applying for funding from the United States Geological Survey (USGS) to improve accuracy of image acquisitions by increasing the number of control points located in Kansas. The control points act as reference points that send and receive signals from satellites in order to determine the height, latitude and longitude of a location on the earth's surface.

Ken Nelson, manager of the Data Access and Support Center (DASC) at the Kansas Geological Survey, explained to Committee members the importance of DASC as a centralized data access and support center. Services include: archival and distribution of data, quality assurance and control, web applications, technical assistance and collaboration with local governments. Data available at DASC relates to the following: administrative and political boundaries, elevation, environmental resources, geodetic control, imagery/raster, land surface/geology/soils, transportation and water resources. This service is free and open to the public.

Mr. Nelson highlighted agencies currently utilizing GIS technology including: Kansas Bureau of Investigation (KBI) and their use of a web-based mapping application to determine location of registered offenders, Kansas Department of Health and Environment (KDHE) and their mapping system for environmental review audits and Kansas Biological Survey (KBS) in their creation of flood models that can predict flood zones and flood damage assessments using LIDAR terrain models.

Mr. Nelson stood for questions.

CONTINUATION SHEET

Minutes of the Senate Natural Resources Committee at 8:30 a.m. on January 22, 2009, in Room 446-N of the Capitol.

A motion was made by Senator Bruce to approve the minutes from January 16, 2009. Senator Lee seconded the motion, and the motion carried.

The next meeting is scheduled for January 29, 2009.

The meeting was adjourned at 9:30 a.m.

SENATE NATURAL RESOURCES COMMITTEE

Guest Roster

Thursday Jan. 22, '09
(Date)

CV Cotsovaldis	KDA
Steve Swaffar	KFB
JOSHUA DECHANT	KGFA
Jerry Forst	KGFA
TROY COON	II
Jeff NoySmith	KGFA
Kevin Dieckmann	KARA
Ron Sothers	KGFA
Kyle Sorensen	KGFA
Craig White	KARA
Kevin Lueger	KGFA
Ryan Gale	KARA
Ron Seehar	KARA/KGFA
Mark Salan	Sunflower
Meghan Walsh	Interh
Wally Moses	KARA
Tom Morey	KDA
Rick Brunetti	KDHE
Miles Stotts	KDHE
Rex Buchanan	Ks. Geological Survey
Tracy Street	Ks Water Office
IAN WEICHERT	GIS Policy Board
Ken Nelson	Ks Geol. Survey / D&E
Wleigh Keck	Plain Law firm
Mike Beam	Ks. Livestock Assn.
TERRY HOWEN	KS Farm Bureau

Please use black ink only!!

Be it enacted by the Legislature of the State of Kansas:

Sec. 1. Sections 1 through 7, and amendments thereto, may be cited as the Kansas surface owner's notice act.

Sec. 2. As used in this act:

(a) "Agricultural surface use" means the use of the surface estate for pasture, livestock, cultivation, harvesting, growing of crops, timber, grasses and other vegetation, woodlands and hunting, including any improvements, fresh water and soil used for these purposes;

(b) "commission" means the state corporation commission;

(c) "oil and gas" means crude oil, natural gas, casinghead gas, condensate, or any combination thereof, inclusive of shale or coal bed methane;

(d) "oil and gas operations" means those operations, which require entry upon the surface estate, including geophysical operations, drilling operations, completion operations, production operations, plugging and abandonment operations, and restoration of the surface estate;

(e) "oil and gas operator" means the person or such person's representative who is responsible for or conducts or controls the physical operation of a well and who conducts oil and gas operations on its own behalf or on behalf of others on a surface estate pursuant to an oil and gas lease or other agreements or contracts;

(f) "person" means any natural person, partnership, governmental or political subdivision, firm, association, corporation or other legal entity;

(g) "surface" or "surface estate" means a specific tract of land and improvements thereon created by and held in fee or other legal title under a deed or other instrument of conveyance, or equitable title under a recorded contract for deed, by a person other than the

Terry Holdren
Senate Natural Resources
January 22, 2009
Attachment #1

United States, a state, an Indian tribal organization or any agency, instrumentality or subdivision of any of the foregoing, regardless of whether such person also owns or otherwise holds interest in the mineral estate underlying the surface estate; and

(h) "surface owner" means any person who holds or owns legal title to the surface estate or an interest therein as shown on the records of the register of deeds for the county where the surface estate is located, and who is assessed real estate property taxes in accordance with the records of the county treasurer, except that surface owner shall not include a tenant, or persons whose only rights to use that surface estate are based upon an easement, right-of-way, license, mortgage lien, severed mineral interest or any non-possessory interest in the surface.

Sec. 3 (a) An oil and gas operator shall notify the surface owner, in accordance with the provisions of this section, not more than 180 days nor less than five (5) business days prior to the commencement of the following oil and gas operations on the surface estate and expressly or impliedly allowed pursuant to an oil and gas lease or other contract governing the use of the surface estate:

- (1) Well site preparation or the drilling of a new well;
- (2) the construction of roads, but not including repair or maintenance of such roads;
- (3) the plugging of any well;
- (4) the installation, removal, replacement, relocation or substantial repairing of a pipeline or an electrical line;
- (5) the installation of a tank battery;
- (6) geophysical operations to determine the potential for oil and gas operations; and

(7) the construction, expansion, installation or reworking of any other facility, structure or operation which substantially disturbs the surface or substantially expands the use of the surface from conditions existing prior to such operations.

(b) With regard to each proposed oil and gas operation requiring notice in accordance with subsection (a):

(1) Each such specifically identified oil and gas operation shall be noticed on a form prescribed for such purposes and adopted by the commission prior to the commencement of such operation, except that the oil and gas operator may combine all or some of the required notices of oil and gas operations into a single notice if such operations shall be completed within six months from the initial date of entry upon the surface estate for the conduct of such oil and gas operations;

(2) in accordance with subsection (c), the oil and gas operator shall provide a copy of the prescribed and completed form to the surface owner not more than 180 days nor less than five (5) business days prior to the commencement of such oil and gas operations, unless otherwise agreed to in a writing acknowledged by both parties pursuant to section 4 of this act;

(3) the oil and gas operations form prescribed by the commission shall include a general description of the proposed location and the planned oil and gas operations to be conducted and shall specifically provide that the surface owner may contact the oil and gas operator through its representative designated on such form to discuss the proposed operations, and shall include the designated representative's address and telephone number and shall also include an electronic mail or facsimile address if available;

(4) in determining surface ownership the oil and gas operator shall be entitled to rely solely upon the property ownership records maintained by the treasurer for the county where the relevant surface estate is located; and

(5) in the case of drilling operations, a copy of the approved intent to drill shall be posted on the commission website for the surface owners to access or it may be obtained by the surface owners from the oil and gas operator upon written request, including via electronic mail or facsimile.

(c) Unless otherwise waived pursuant to section 4 of this act, the oil and gas operator shall give the notice required under subsection (a) to the surface owner either:

(1) By certified, first class, express or overnight mail addressed to the surface owner at the address obtained from the county treasurer for the county where the surface estate is located and such notice shall be mailed within the notice period provided in Sec. 3 (a) prior to commencement of the oil and gas operations required to be noticed on the prescribed commission form; or

(2) by personal delivery by the oil and gas operator to the surface owner at the address obtained from the county treasurer for the county where the surface estate is located not less than ten days prior to commencement of the oil and gas operations required to be noticed on the prescribed commission form.

(d) When notice is provided by mail, the notice period provided in Sec. 3 (a), shall commence on the date of the postmark on such notice.

(e) Notice by the oil and gas operator to the surface owners of record, as provided under this section, shall be deemed conclusive notice to all persons having any legal or equitable interest in or to the surface estate.

(f) Notice by the oil and gas operator to the surface owner shall contain a general description of the proposed location and the planned oil and gas operations.

(g) So long as the oil and gas operator has complied with the notice provisions of this Sec. 3, and amendments thereto, the oil and gas operator shall be entitled to enter upon the surface owner's land and conduct the oil and gas operations in accordance with the terms and conditions of any lease or other existing contractual or lawful right.

(h) The oil and gas operator shall deliver to the surface owner a copy of the well plugging application contemporaneously with the filing of such application with the commission.

Sec. 4. The surface owner and the oil and gas operator may, by an agreement separate and apart from an oil and gas lease, alter or waive, in whole or in part, their respective rights and obligations under Sec. 3, and amendments thereto, provided such alteration or waiver conspicuously and expressly acknowledges that such agreement alters the provisions of Sec. 3, and amendments thereto. Such agreement shall only be enforceable for one year and must be renegotiated annually.

Sec. 5. Notwithstanding any provision of this act to the contrary, no notice shall be required in any exigent or emergency situation which requires that an oil and gas operator immediately access the surface estate and conduct activities that are reasonably necessary to protect health, safety, or the environment or that are reasonably necessary to protect or safeguard the oil and gas operator's equipment; provided the oil and gas operator shall provide the surface

owner with the information required under Sections 3(b)(1) and 3(f) above within forty-eight (48) hours from entry under such exigent or emergency situation.

Sec. 6. (a) Jurisdiction to implement and enforce the provisions of this act is hereby conferred on the commission, except that nothing in this act shall be construed to divest the district courts of Kansas of jurisdiction to determine the issues relating to private contract rights or in any way limit or effect the rights or remedies which are otherwise available or permitted by law to either surface owners or oil and gas operators.

(b) The commission, with input from the advisory committee on regulation of oil and gas activities authorized under K.S.A. 55-153, shall adopt such rules and regulations deemed necessary to carry out the provisions of this act, including provisions for administrative penalties for failure to comply with this act.

Sec. 7. This act shall take effect and be in force from and after its publication in the statute book.



Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

**Air Regulations in Progress
Kansas Department of Health and Environment
Bureau of Air and Radiation**

**Presented to
Senate Committee on Natural Resources**

**By
Rick Brunetti and Miles Stotts**

January 22, 2009

Chairwoman McGinn and members of the committee, I am Rick Brunetti, Director of the Bureau of Air and Radiation within the Kansas Department of Health and Environment. At your request, we are present today to discuss regulations the Bureau presently has in progress.

At this time, I wish to introduce Mr. Miles Stotts. Mr. Stotts is an Environmental Scientist with the bureau and has the responsibility of overseeing the updating of air regulations.

Kansas City Ozone

Nitrogen oxide and idle reduction rules developed to address ozone issues which are causing nonattainment designation in the Kansas City metropolitan area:

- KAR 28-19-712. NO_x reduction rule will affect largest sources of nitrogen oxides:
Electricity Generating Units and glass plant.
- KAR 28-19-713. Idle reduction rules are for large, heavy duty diesels (not passenger cars or pickups).

Updates to Federal Regulations -

Adopted by reference (after staff and legal review)

- KAR 28-19-350. Ethanol - Adopts revisions to federal Prevention of Significant Deterioration (PSD) regarding ethanol production facilities (definition of Commercial Chemical Plant).
- KAR 28-19-720, 735, 750. NSPS & MACT - Adopts New Source Performance Standards (40 CFR 60), National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) and Maximum Achievable Control Technology (MACT) standards from July 1, 2005, through June 30, 2008.

Permitting (construction and operating)

Implements streamlining for routine permitting activity to point resources to match emissions, i.e. de-emphasize minor sources. (These rules will be submitted as a package.)

- KAR 28-19-200, 201. Updates definitions and lists to be consistent with federal regulations
- KAR 28-19-204. Streamlines public notice requirements for nonmajor sources and clarifies notice requirements for major sources.
- KAR 28-19-300, 301, 302, 303, 304. Streamlines construction permit and approval processes; incorporates new source review (NSR) reform changes; creates registration process for minor sources.
- KAR 28-19-500, 501, 502, 510, 511, 513, 513a - e, 514, 515, 518, 540 – 546. Clarifies and streamlines the operating permit and approval processes for Class I (major) and Class II (nonmajor) sources.

Transportation Conformity

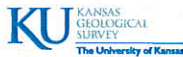
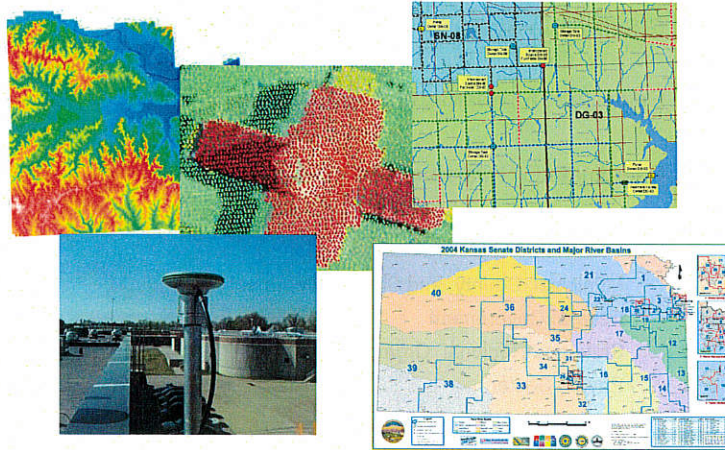
KAR 28-19-801. Updates are needed to ensure that state requirements match federal requirements; essential component to ensure availability of federal transportation funds, particularly in the KC metropolitan area.

Acid Rain

KAR 28-19-276. Update and adopt federal acid rain permitting requirements.

Mr. Brunetti and I will now stand for questions.

STATE OF KANSAS GIS INITIATIVE



KANSAS GIS POLICY BOARD

- Established in 1989 by Governor Hayden
- Executive Order – Objectives:
 1. Coordinate the implementation and use of GIS technology by participating agencies.
 2. Provide an opportunity for prompt access to GIS technology by all participating agencies and other potential users.
 3. Promote compatibility and standards for geographic information.
 4. Promote sharing of computerized, geographically referenced data.
 5. Reduce the costs that would be involved if each agency developed its own GIS capabilities independently and networking did not take place.
 6. Enhance the information analysis and decision making process of participating agencies through the use of GIS technology.
- The Executive Order has been reestablished by each administration since Governor Hayden.

.....KANSAS GIS POLICY BOARD – DATA ACCESS & SUPPORT CENTER – KANSAS GEOLOGICAL SURVEY.....

Tracy Streeter
Senate Natural Resources
January 22, 2009
Attachment #3

GIS POLICY BOARD ACTIVITIES

- GIS Initiative Strategic Planning

- Guidelines, Standards, and Policy Development

- Coordinate GIS Database Development

- Multi-Participant Coordination:
 - Municipal, County, and State Government
 - Federal Government
 - State and Regional Organizations
 - Private Sector

.....KANSAS GIS POLICY BOARD – DATA ACCESS & SUPPORT CENTER – KANSAS GEOLOGICAL SURVEY.....

GIS POLICY BOARD MEMBERSHIP – JANUARY 2009

Tracy Streeter, Board Chairman
Director, Kansas Water Office

Denise Moore, Board Vice Chairperson
Executive Branch CITO

Joseph W. Arri,
Area Manager-OSP Planning, AT & T

Walt Aucott, District Chief
United States Geological Survey
Water Resources Division

Dr. Eric Bernard, Professor
Kansas State University

Major Gen Tod Bunting, Adjutant General
Kansas Adjutant General's Dept

Linda Buttron, County Clerk
Jefferson County

Constantine Cotsoradis, Asst Secretary
Kansas Department of Agriculture

Peter Davis, GIS Supervisor
Property Valuation Division
Kansas Department of Revenue

Greg Foley, Executive Director
State Conservation Commission

Kathleen Gosa, IT Director
Department of Education

Bill Harrison, Director
Kansas Geological Survey

Donald Heiman, Legislative Branch CITO
c/o Legislative Administrative Services

Jeff Lewis, Chief Information Officer
Kansas Department of Human Services

Brian Logan, Cartography/GIS Manager
Kansas Department of Transportation

Dr. Edward Martinko, Director
University of Kansas
Kansas Biological Survey

Gary Middleton, Director
Kansas Emergency Management Assco.

John W. Mitchell, Director
Environment Division, KDHE

Gregg Noland, Senior Manager
Westar Energy, Inc.

Kelly O'Brien, CITO
Judicial Branch

Wayne Page
Kansas Corporation Commission

Murray L. Rhodes, Owner
Rhodes Surveyors, PA

John Rogers, GIS Manager
Sedgwick County

Travis Rome
United States Department of Agriculture
Natural Resources Conservation Service

Mark Runge
Emporia State University

Dr. Tom Schafer, Assistant Professor
Fort Hays State University

Keith Sexson, Assistant Secretary
Kansas Department of Wildlife & Parks

Kyle Tjelmeland, GIS Manager
City of Topeka

Matthew Veatch, State Archivist
Kansas State Historical Society

Robert Waller, Chief Administrator
Kansas Emergency Medical Services

Bettejane M. Wooding, Cartographer
Barton County Appraiser's Office

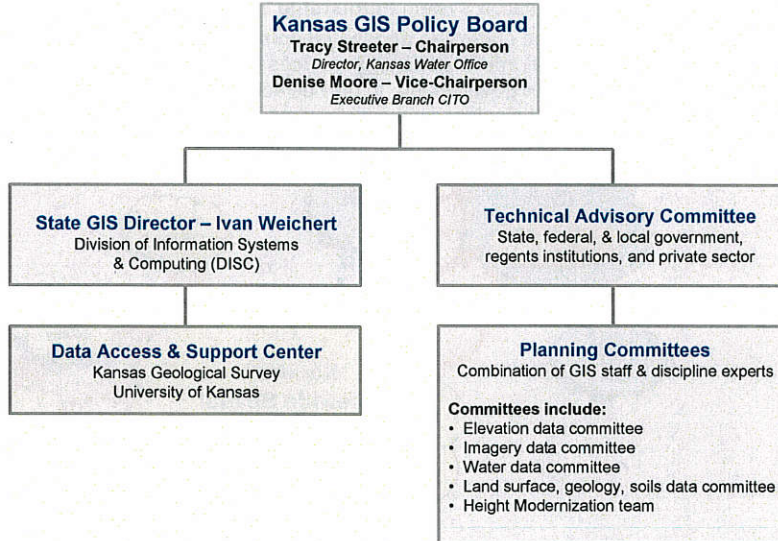
STAFFING:

Ivan L. Weichert, State GIS Director
Kansas Information Technology Office

Ken Nelson, Manager
Kansas Data Access and Support Center
Kansas Geological Survey
University of Kansas

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KANSAS GIS INITIATIVE – ORGANIZATIONAL STRUCTURE



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STRATEGIC PLANNING EFFORTS:

Followed the NSGIC strategic planning process and templates – modified as necessary to meet our needs

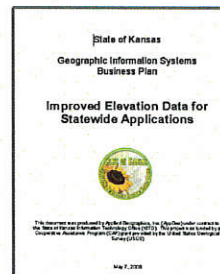
One Strategic Plan, potentially many Business Plans

Strategic Plan:

- What and Why**
- Vision & Goals
- The “big picture” and overall context

Business Plan:

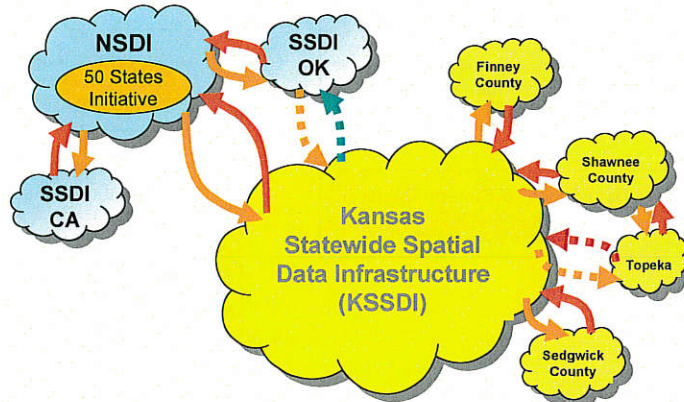
- How, When, and How Much**
- Aimed at those that approve and fund
- Details of initiative(s) emerge
- Presented as a business case



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STRATEGIC PLAN – VISION STATEMENT

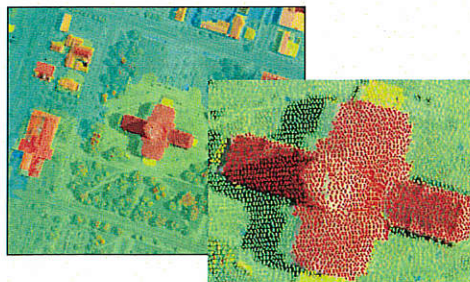
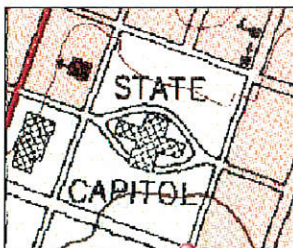
The Kansas Geographic Information System **Partnership** initiative will be a **collaborative effort** among the **statewide geospatial community** that delivers robust, map-based, **geospatial information and services** to support policy and decision making at **all levels of government**, to provide access to **public information** and to **enhance** the safety, economy, environment and **quality of life** in Kansas.



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ELEVATION DATA BUSINESS PLAN

- **Programmatic Goal for Business Plan:** Develop improved statewide elevation data that supports high resolution contours and detailed topographic mapping necessary for a multitude of critical applications and risk determination.
- There is a big need for improved elevation data. The "best available" state and/or national data is mediocre and does not support many important applications.
- The existing statewide elevation data is mostly derived from 20 year old USGS Topographic Maps with a 10-foot contours.



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APPLICATIONS & BENEFITS OF IMPROVED ELEVATION DATA

- **Flood Prediction and Mitigation**
 - Floodplain delineation
 - Flood prone properties
 - Risk determination & insurance assessment
 - Flood flow characterization (i.e., direction, velocity, depth)
 - Flood preparedness
 - Evacuation planning
 - Reverse E-911: proactive notification
- **Transportation**
- **Precision Agriculture and Soil Mapping**
- **Habitat Characterization**
- **Urban Planning**
- **Watershed Analysis and Delineation**
- **Emergency Response**
- **Orthorectification of Aerial Imagery**

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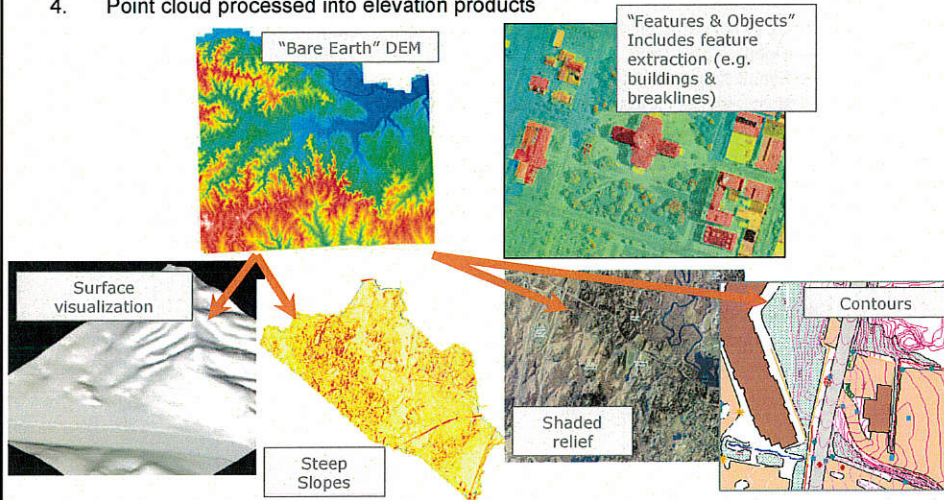
REPRESENTATIVE STATE LIDAR PROJECTS

- **North Carolina:** ~48,000 sq. miles
 - Need driven by hurricane planning
 - Received FEMA Cooperative Technical Partner's Program funding
 - Divided state into three segments
 - State and local governments have benefited
- **Iowa:** ~53,000 sq. miles
 - Funding from DOT, DNR and NRCS
 - Project planning identified potential cost savings:
 - DNR: \$390k/year from avoided planning level survey
 - DOT: \$10M+/year from cut-and-fill, preliminary planning, road grading, line-of-site
 - NRCS: \$3-5M/year from Water Quality Best Management Practices (BMPs)
 - Divided state into three segments
- **Kansas:** ~82,000 sq. miles

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LIDAR PROJECT PROCESS & PRODUCTS

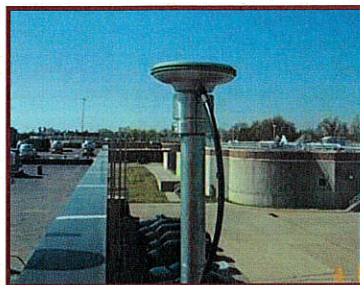
1. Aerial overflight
2. Laser scans earth and records returns
3. Raw returns are processed into a "point cloud"
4. Point cloud processed into elevation products



.....KANSAS GIS POLICY BOARD – DATA ACCESS & SUPPORT CENTER – KANSAS GEOLOGICAL SURVEY.....

HEIGHT MODERNIZATION

- Height Modernization (HM) is the establishment of accurate, reliable heights using GPS technology in conjunction with traditional leveling, gravity, and modern remote sensing.
- Continuously Operating Reference Stations (CORS) - A nationwide network providing GPS data for a variety of post-processing uses.



.....KANSAS GIS POLICY BOARD – DATA ACCESS & SUPPORT CENTER – KANSAS GEOLOGICAL SURVEY.....

HEIGHT MODERNIZATION

- **Outcomes:**
 - A denser, more accurate, 3-D (latitude, longitude, and height) geodetic control network
 - A statewide network of continuously operating and transmitting GPS reference stations
- **NOAA Grant Program to help states implement HM programs:**
 - Announced in June, 2008 – search Grants.gov (CFDA 11.400)
 - Funding limits \$100K - \$1.2 Million (\$400-\$500K average)
 - Multi-year funding available – 1-5 years
 - States currently receiving HM funding include: Alabama, Arizona, California, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Washington, Wisconsin

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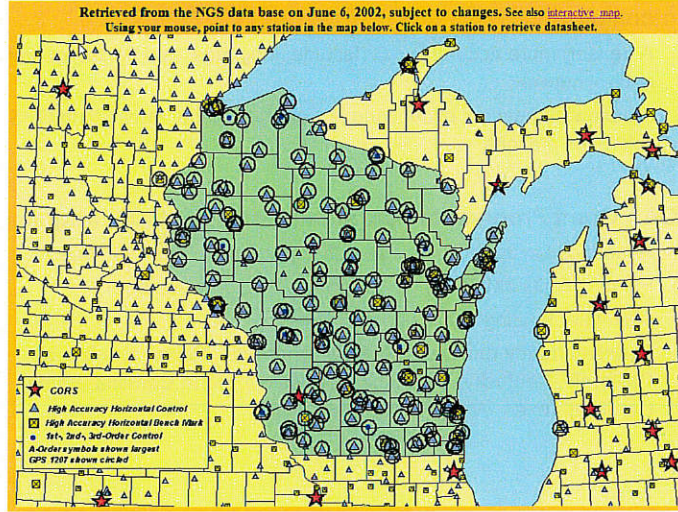
HEIGHT MODERNIZATION BENEFITS

Primary project goal - "The development of the CORS network in Kansas will significantly increase the vertical accuracy of elevation measurements, while also densifying high accuracy horizontal positions to provide an improved foundation for positioning and mapping applications."

- Lower the costs of surveying, mapping, and aerial photography throughout the state
- Improved elevation for:
 - Floodplain mapping & mapping high water marks
 - Subsidence monitoring
 - Precision agriculture
 - Transportation planning, construction, and maintenance
 - Reservoir and well monitoring
- Arizona sites these cost savings:
 - Over \$1 million annual savings on aerial mapping project contracts by local, regional and state governments
 - Over \$600,000 annual savings on planning and construction costs to Phoenix District of the Arizona DOT
 - Over \$4 million annual savings to Arizona citizens for reduced surveying costs

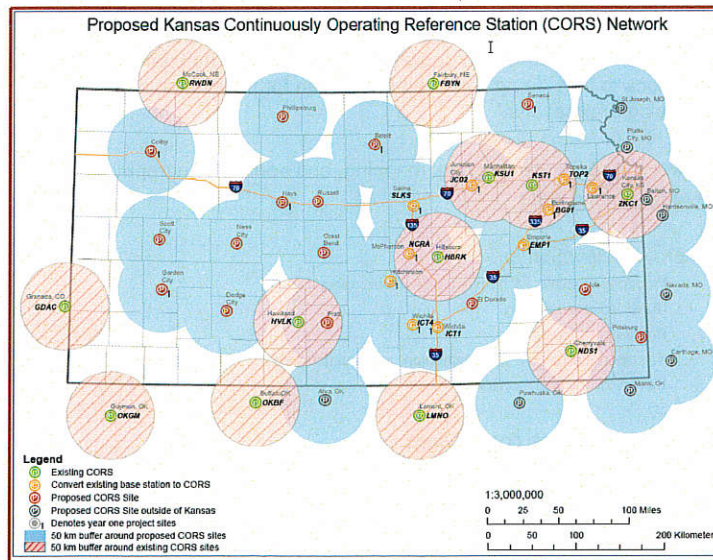
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WISCONSIN GEODETIC CONTROL NETWORK



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HEIGHT MODERNIZATION



.....KANSAS GIS POLICY BOARD – DATA ACCESS & SUPPORT CENTER – KANSAS GEOLOGICAL SURVEY.....

SUMMARY OF RECENT PLANNING ACTIVITIES:

- GIS Initiative Strategic Planning:
 - State of Kansas GIS Strategic Plan – May, 2008
 - State of Kansas Elevation Data Business Plan – May, 2008
- Kansas Height Modernization Proposal – NOAA/NGS – August, 2008 – currently under review by NGS.
- Formation of a GIS Strategic Plan Implementation Committee in July, 2008, to act on the task items identified in the strategic plan.
- Formation of an Elevation Data Committee in November, 2008, to refine the Elevation Data Business Plan and work towards implementation of the plan.

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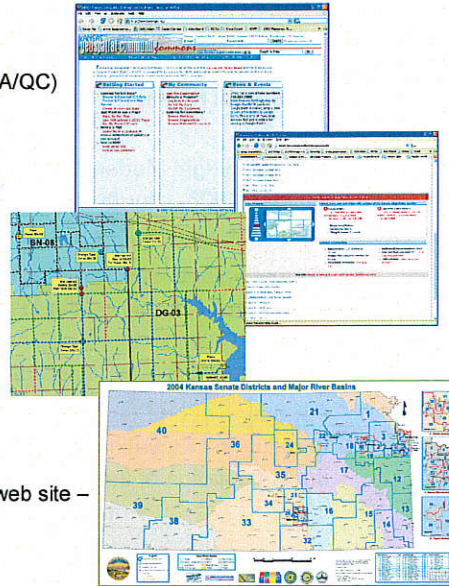
DATA ACCESS & SUPPORT CENTER (DASC)

- Established by the GIS Policy Board in 1991
- Central repository of GIS databases of statewide/regional importance
- Designated as an National Spatial Data Infrastructure (NSDI) clearinghouse node in 1997
- Located at the Kansas Geological Survey at the University of Kansas
- Web site – <http://www.kansasgis.org>

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DASC SERVICES

- Database archival and distribution
- Database quality assurance/quality control (QA/QC)
- Technical assistance
- Geospatial metadata development assistance
- Web application development and hosting
- Database development & integration
- State & Local Government Coordination
- Cartographic development
- Promotion of the Kansas GIS Initiative
- Development and maintenance of the DASC web site – www.kansasgis.org



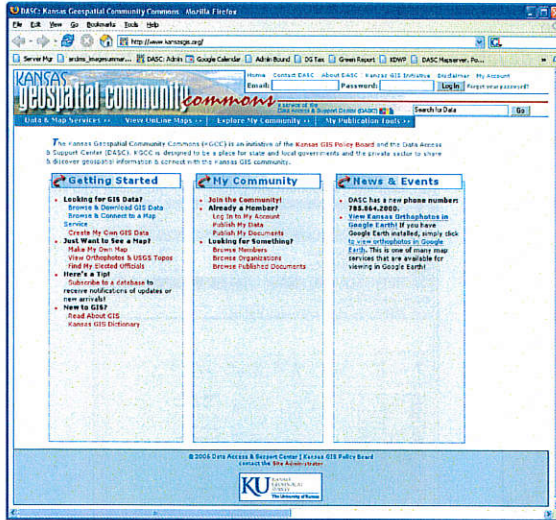
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KANSAS GEODATABASE CATALOG

- Administrative/Political Boundaries** – county boundaries, incorporate areas, agency district boundaries, Public Land Survey System (PLSS)...
- Applications** – desktop and web-based applications...
- Elevation** – Digital Elevation Models (DEM) and hypsography...
- Environmental Resources** – endangered species, riparian area inventory, designated critical habitat, stream evaluation...
- Geodetic Control** – GPS base station data...
- Imagery/Raster** – Orthorectified aerial photography (various dates and resolutions), Landsat imagery, satellite derivative products...
- Land Surface/Geology/Soils** - land cover, GAP land cover, detailed surface geology, soil surveys (SSURGO)...
- Transportation** – roads, highways, railroads...
- Water Resources** – streams, water bodies, aquifers, wetlands, rural water districts and distribution infrastructure, water well locations and water level data, watershed boundaries...

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DASC WEB SITE – HTTP://WWW.KANSASGIS.ORG



- Online resource for GIS data, documentation, standards, and web services

- GIS Community directory provides contact information for over 900 organizations and over 2000 members

- Provides access to a variety of web-based mapping applications

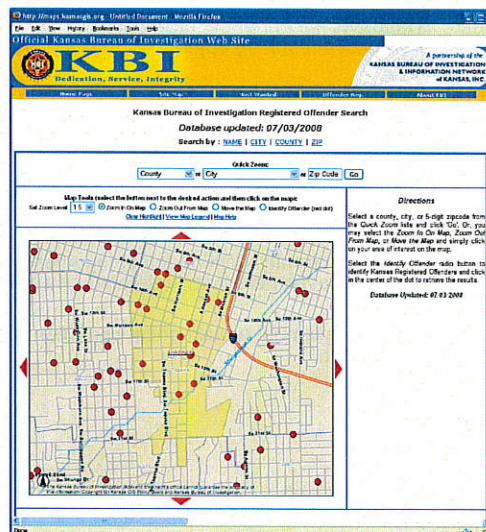
- Serves as the central hub for the Kansas GIS community

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PROJECT HIGHLIGHT - KBI REGISTERED OFFENDERS REGISTRATION

KBI Registered Offenders v1.0:

- Original web site was developed in 2002 in conjunction with KBI and Kansas.Gov.
- All aspects of the mapping component – layout, navigation, functionality – resided on DASC's servers and were not well integrated into the main registered offenders site.
- This "black box" design made changes difficult. Application developers at KBI or Kansas.Gov had no direct access to the mapping application.

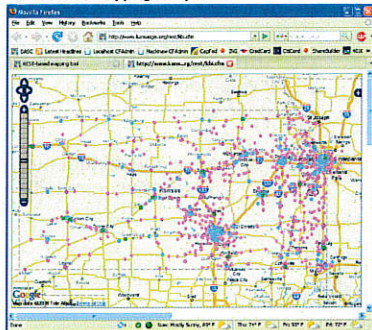


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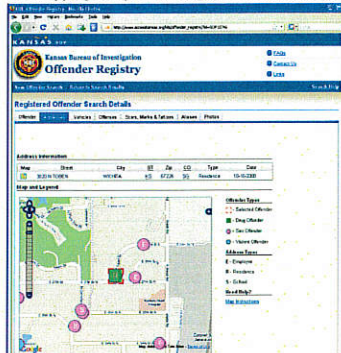
PROJECT HIGHLIGHT - KBI REGISTERED OFFENDERS V2.0 – MAPPING COMPONENT

- The interactive mapping component for the KBI Registered Offenders site is delivered via a REST-based web service
- This type of architecture allows developers at Kansas.gov to easily integrate the interactive map into any part of the web site without any direct involvement from DASC
- The REST interface is very simple, yet provides all of the required functionality

Generic KBI Mapping Component:



KBI Mapping Component integrated into Kansas.gov web site:



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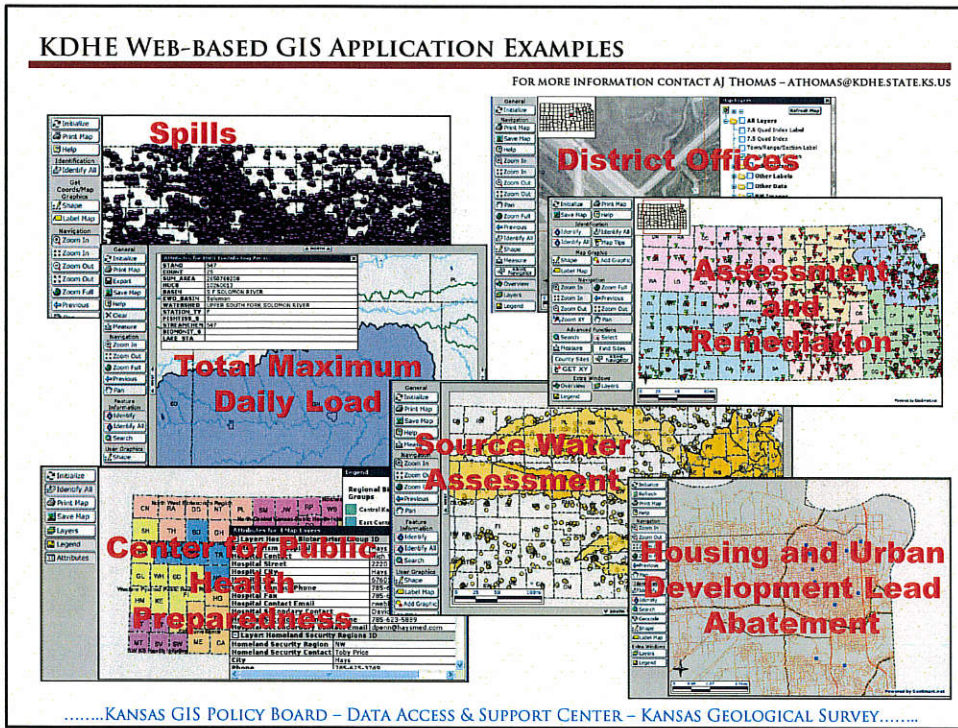
GIS SERVICE ORIENTED ARCHITECTURE (SOA) VISION

- The development of the new KBI mapping component is a prototype for future web-based mapping application development efforts.
- Rather than building a unique, custom web-site for each application, we will create a generic framework that enables other developers to easily integrate map viewers and the Kansas Geodatabase into their web site.
- The web-mapping component will be accessible via simple web service protocols.
- DASC is currently working to put together a focus-group of GIS professionals and web developers from state agencies to help guide this development.
- We will implement a build-once, use-often model to maximize the return-on-investment.

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KDHE WEB-BASED GIS APPLICATION EXAMPLES

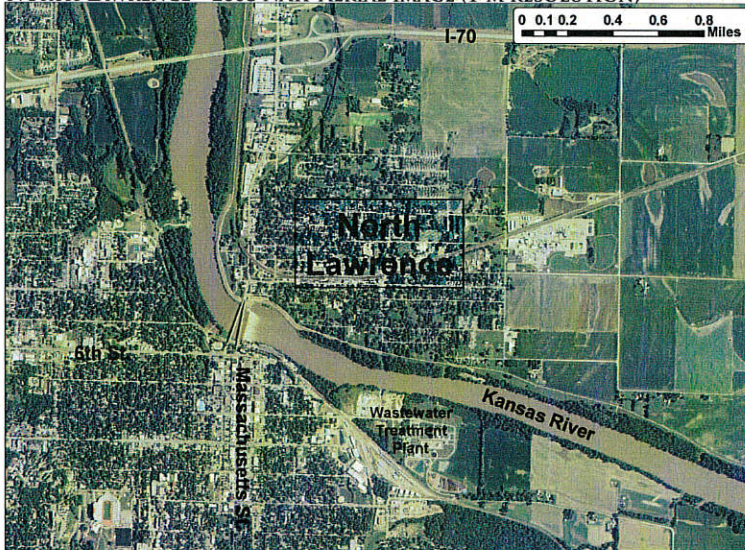
FOR MORE INFORMATION CONTACT AJ THOMAS - ATHOMAS@KDHE.STATE.KS.US



KBS FLOOD INUNDATION MAPPING PROJECT

FOR MORE INFORMATION CONTACT JUDE KASTENS - JKASTENS@KU.EDU

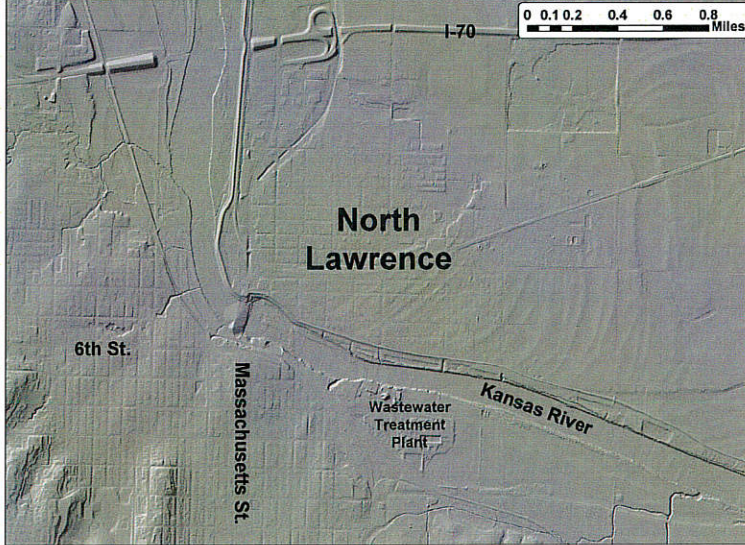
NORTH LAWRENCE - 2008 NAIP AERIAL IMAGE (1-M RESOLUTION)



KBS FLOOD INUNDATION MAPPING PROJECT

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NORTH LAWRENCE - LIDAR ELEVATION (2-M RESOLUTION)

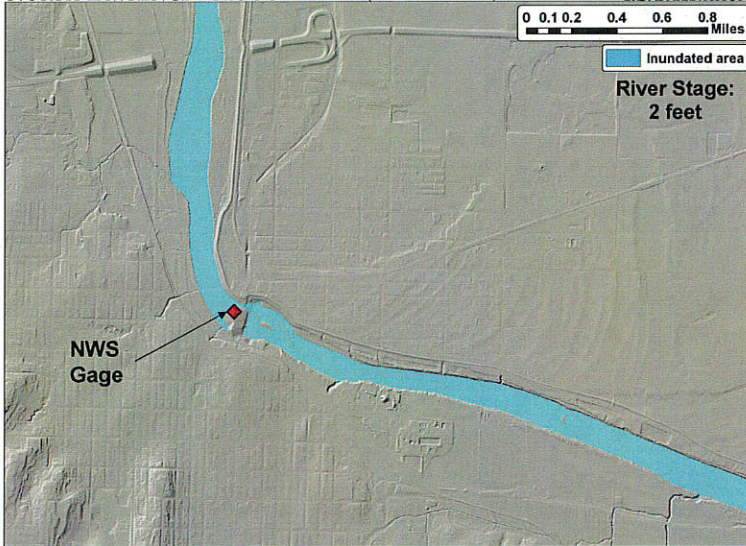


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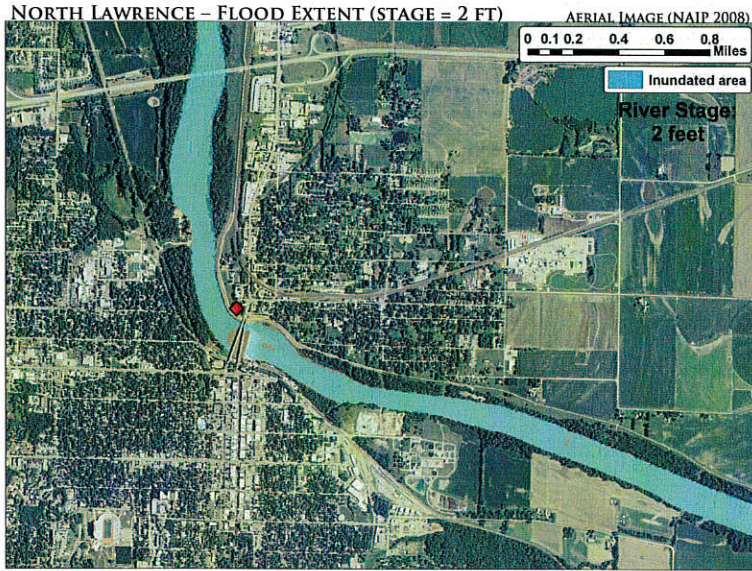
NORTH LAWRENCE - FLOOD EXTENT (STAGE = 2 FT)



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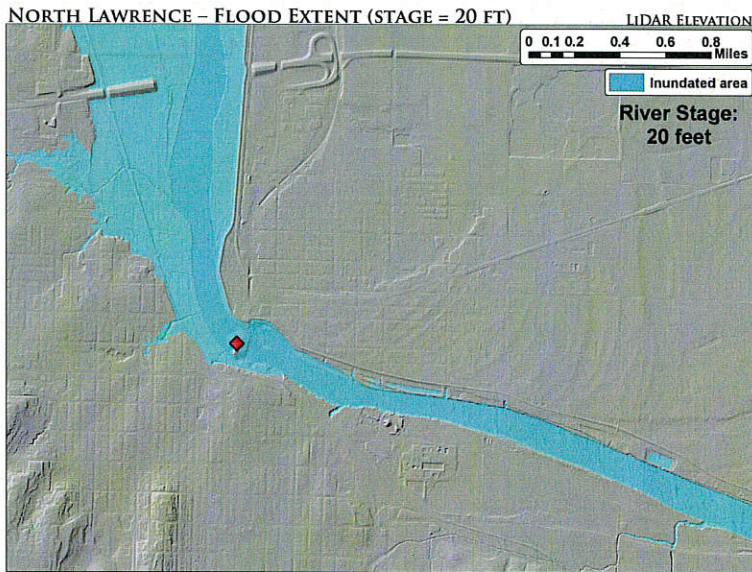
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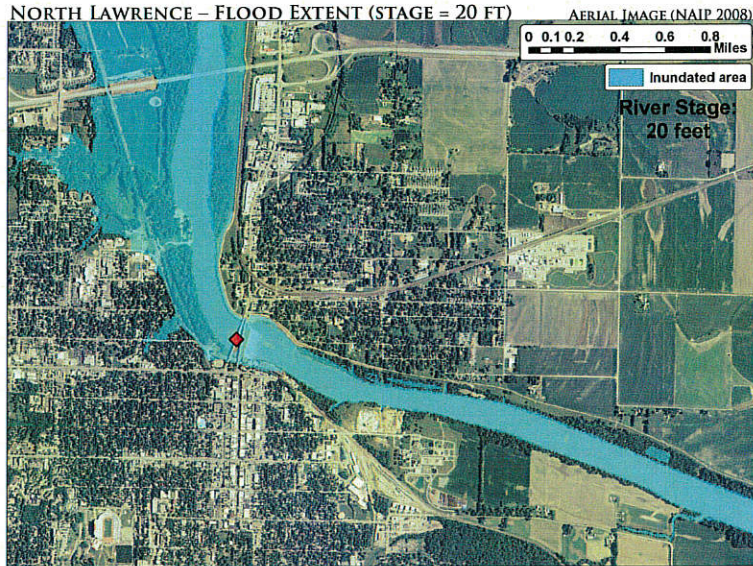
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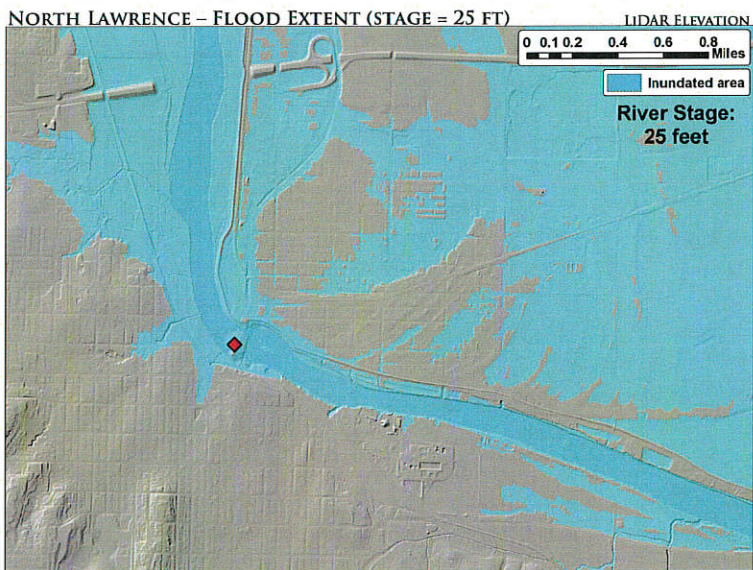
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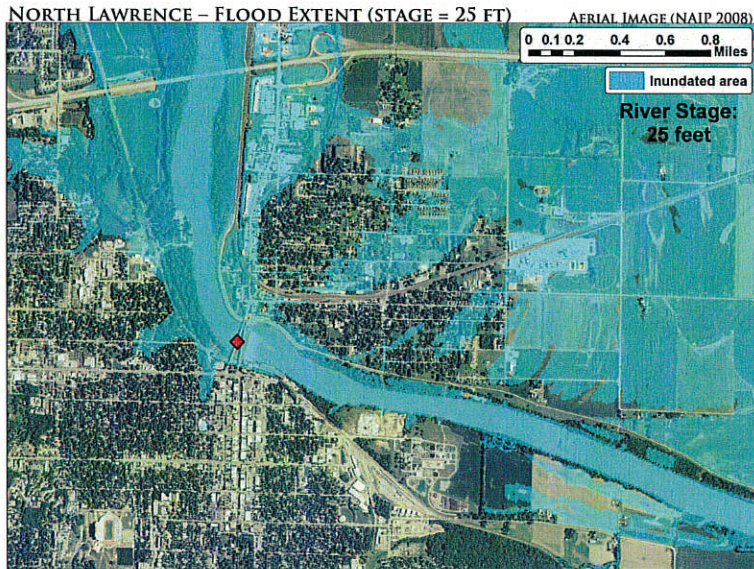
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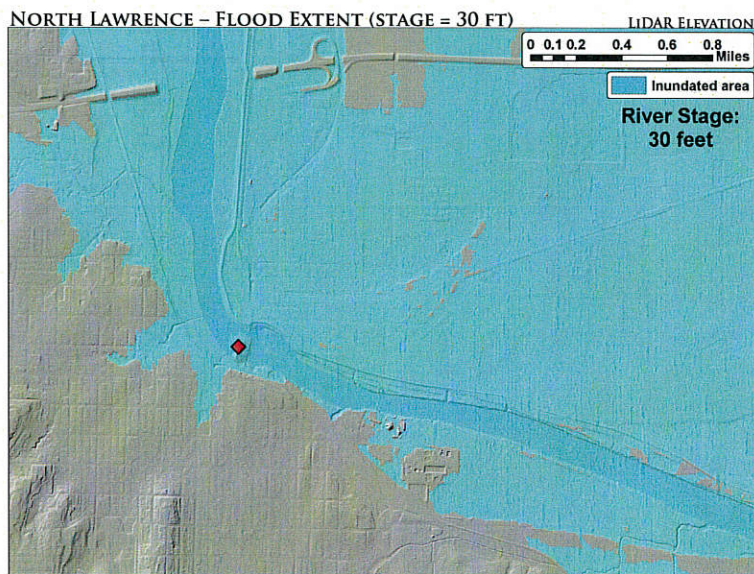
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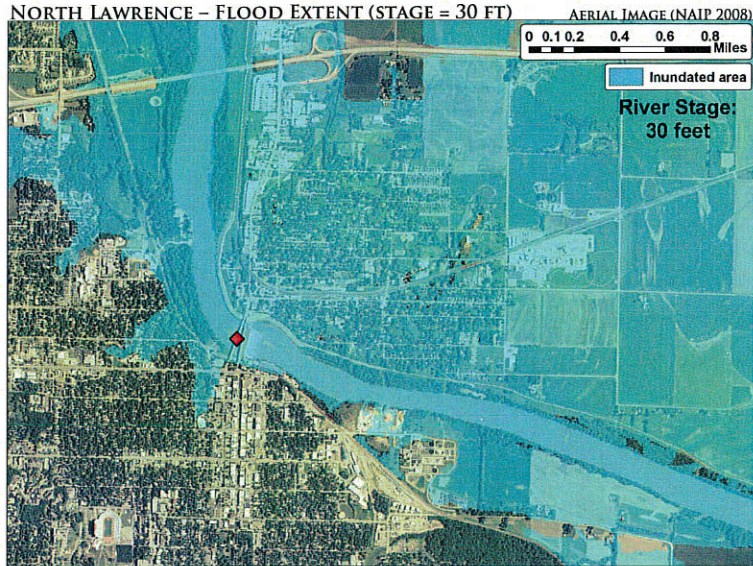
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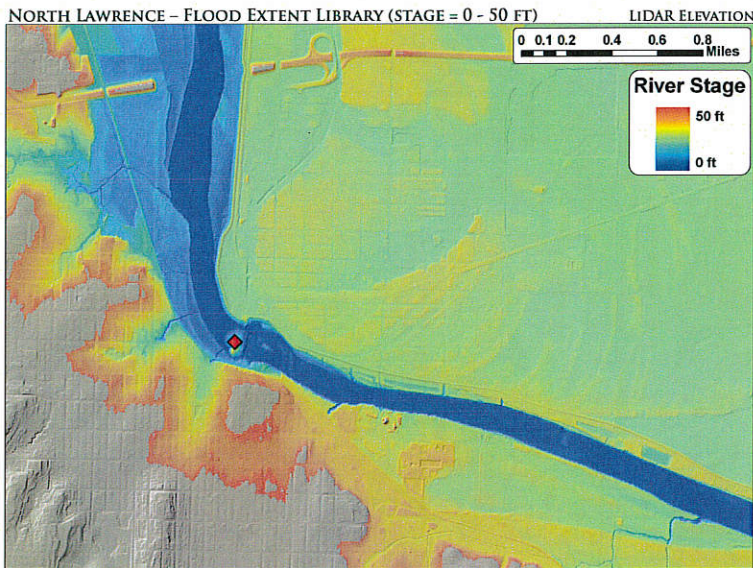
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