THE VALUE OF GIS IN LEGISLATIVE INFORMATION

Kansas Legislature

Kansas Legislative Research Department

House Standing Committee on Government Efficiency

Jim Geringer

Esri

Wyoming Governor 1995-2003

Wyoming Legislator 1983-1995

January 17, 2012

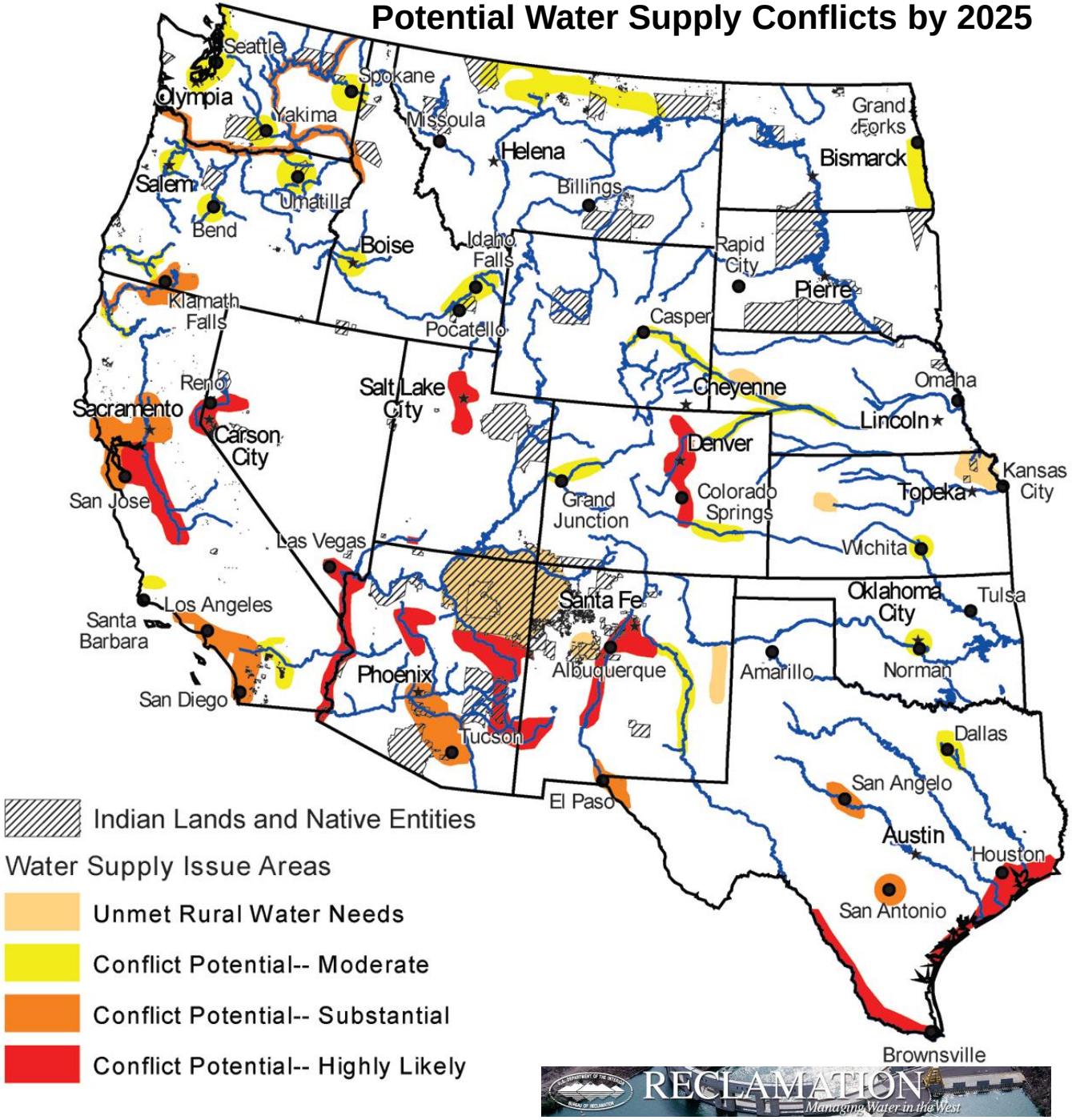
Wyoming

esri

Today's Thoughts - More Than A Map – Connecting People, Places and Policy

- Data and Information Management
- Information in context
  - Top issues
- GIS as a powerful tool
  - for Decision Makers
  - for everyday activities
  - Ever increasing public participation
- Information Integration – Not an option but a necessity
  - Cross-boundary Collaboration, Planning, Modeling, Action
  - Increasing presence on the Web

Potential Water Supply Conflicts by 2025



water availability and seasonal stress will lead to greater competition among agricultural, urban, industrial, and ecosystem water needs

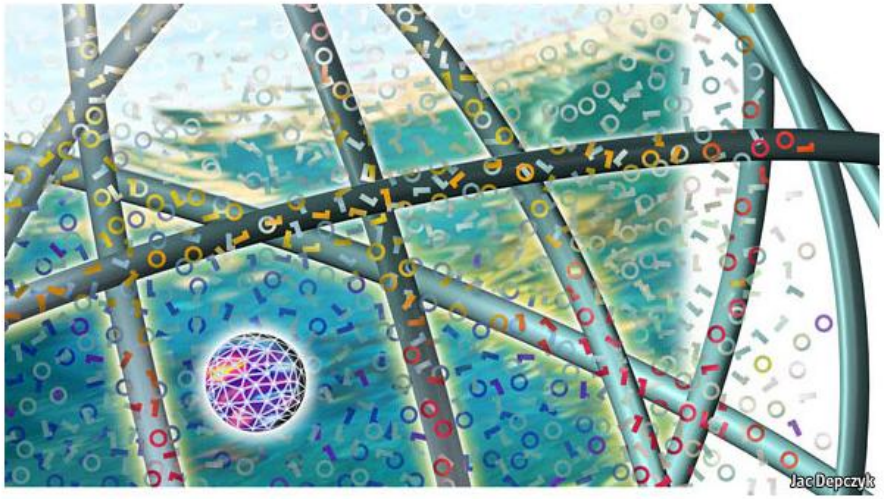
RECLAMATION
Managing Water in the West

A special report on managing information

Data, data everywhere

Information has gone from scarce to superabundant. That brings huge new benefits, says Kenneth Cukier (interviewed here)—but also big headaches

Feb 25th 2010 | From *The Economist* print edition



WHEN the Sloan Digital Sky Survey started work in 2000, its telescope in New Mexico collected more data in its first few weeks than had been amassed in the entire history of astronomy. Now, a decade later, its archive contains a whopping 140 terabytes of information. A successor, the Large Synoptic Survey Telescope, due to come on stream in Chile in 2016, will acquire that quantity of data every five days.

Such astronomical amounts of information can be found closer to Earth too. Wal-Mart, a retail giant, handles more than 1m customer transactions every hour, feeding databases estimated at more than 2.5 petabytes—the equivalent of 167 times the books in America's Library of Congress (see article for an explanation of how data are quantified). Facebook, a social-networking website, is home to 40 billion photos. And decoding the human genome involves analysing 3 billion base pairs—which took ten years the first time it was done, in 2003, but can now be achieved in one week.

All these examples tell the same story: that the world contains an unimaginably vast amount of digital information which is getting ever vaster ever more rapidly. This makes it possible to do many things that previously could not be done: spot business trends, prevent diseases, combat crime and so on. Managed well, the data can be used to unlock new sources of

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In this special report

Information has become superabundant
Too much data
Information is changing business
How internet companies profit from online data
Governments are becoming more open about data
News ways of showing data
The uses of information about information
New regulations
How machines deal with information
Sources and acknowledgments
Offer to readers

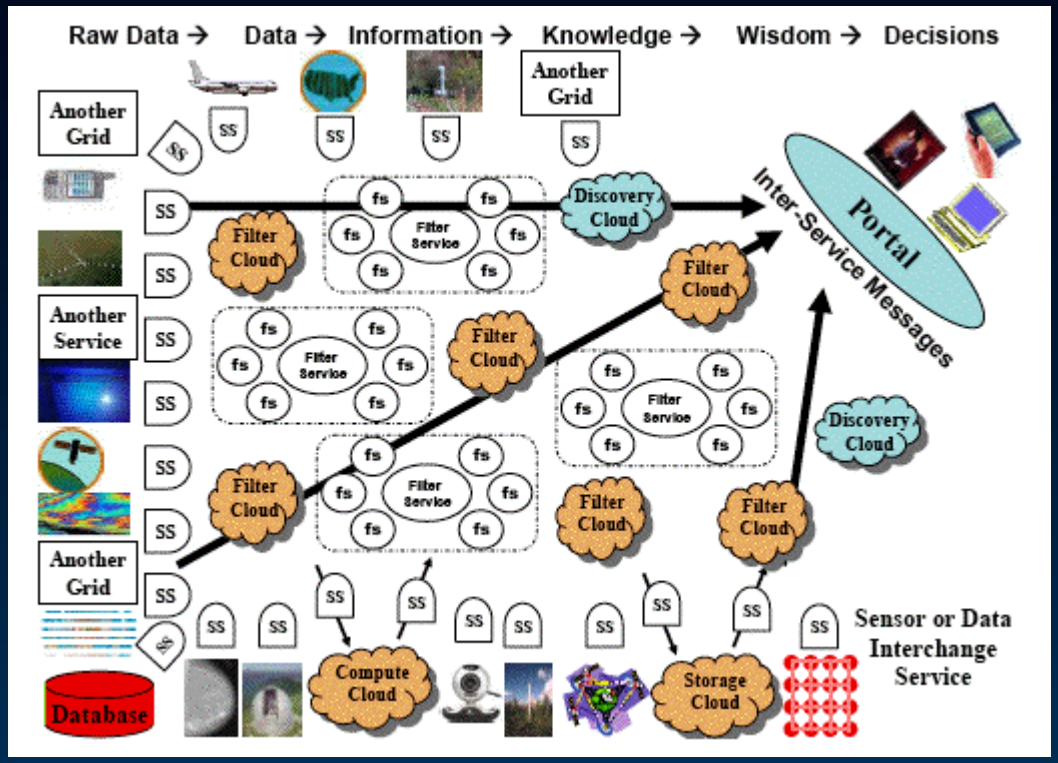
From *The Economist*

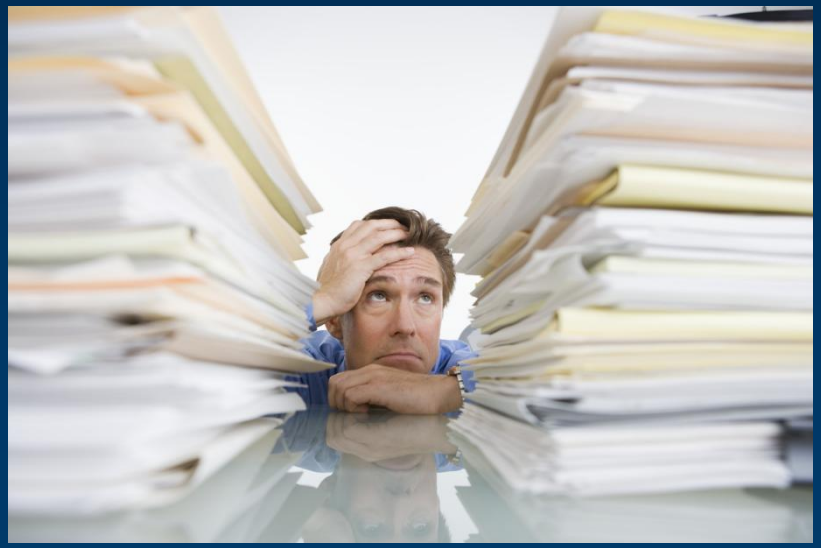
Too much data
Feb 25th 2010

The data deluge
Feb 25th 2010

The Data Deluge

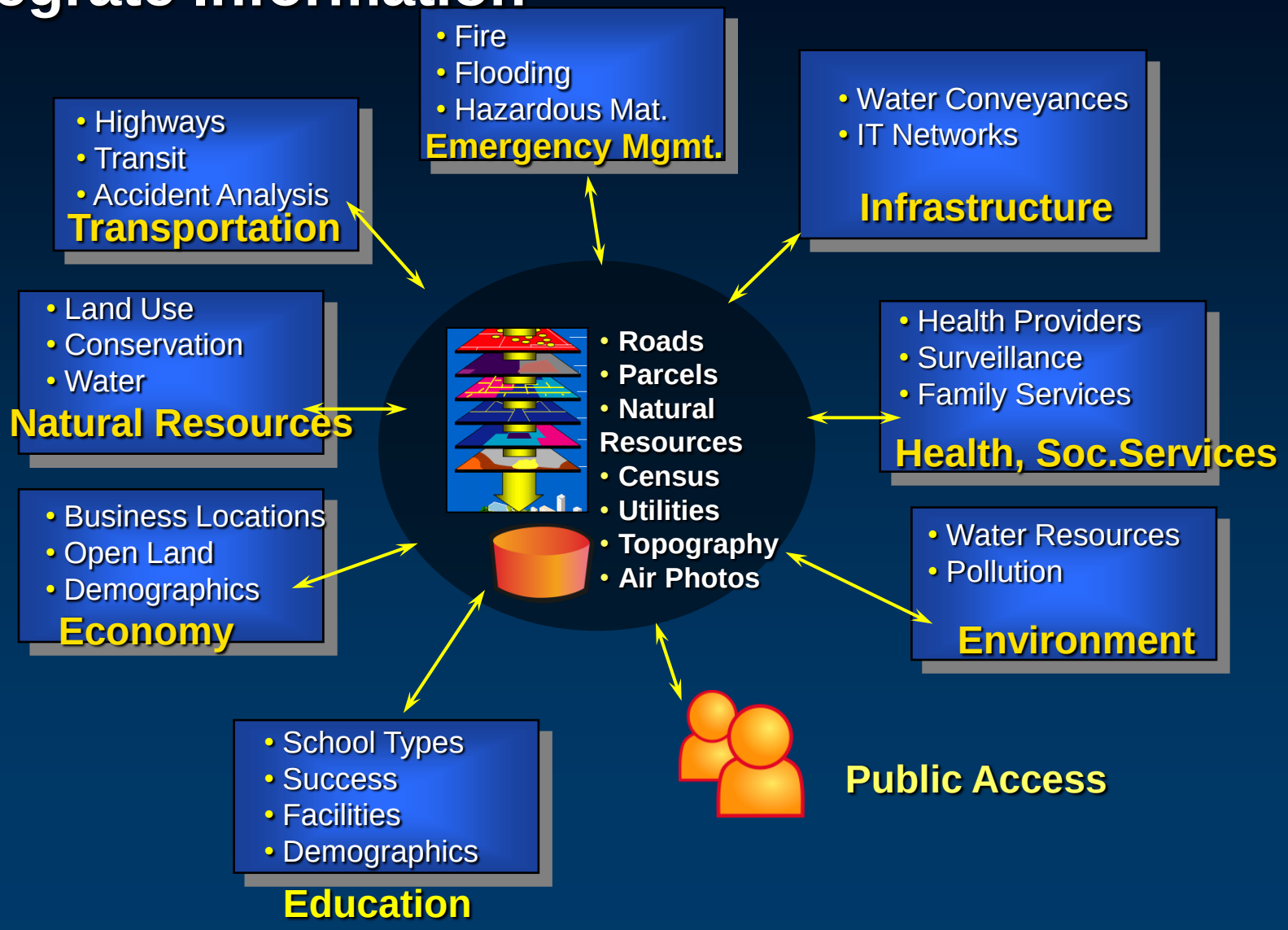
Too Much Data





When Is "Good Enough" Good Enough

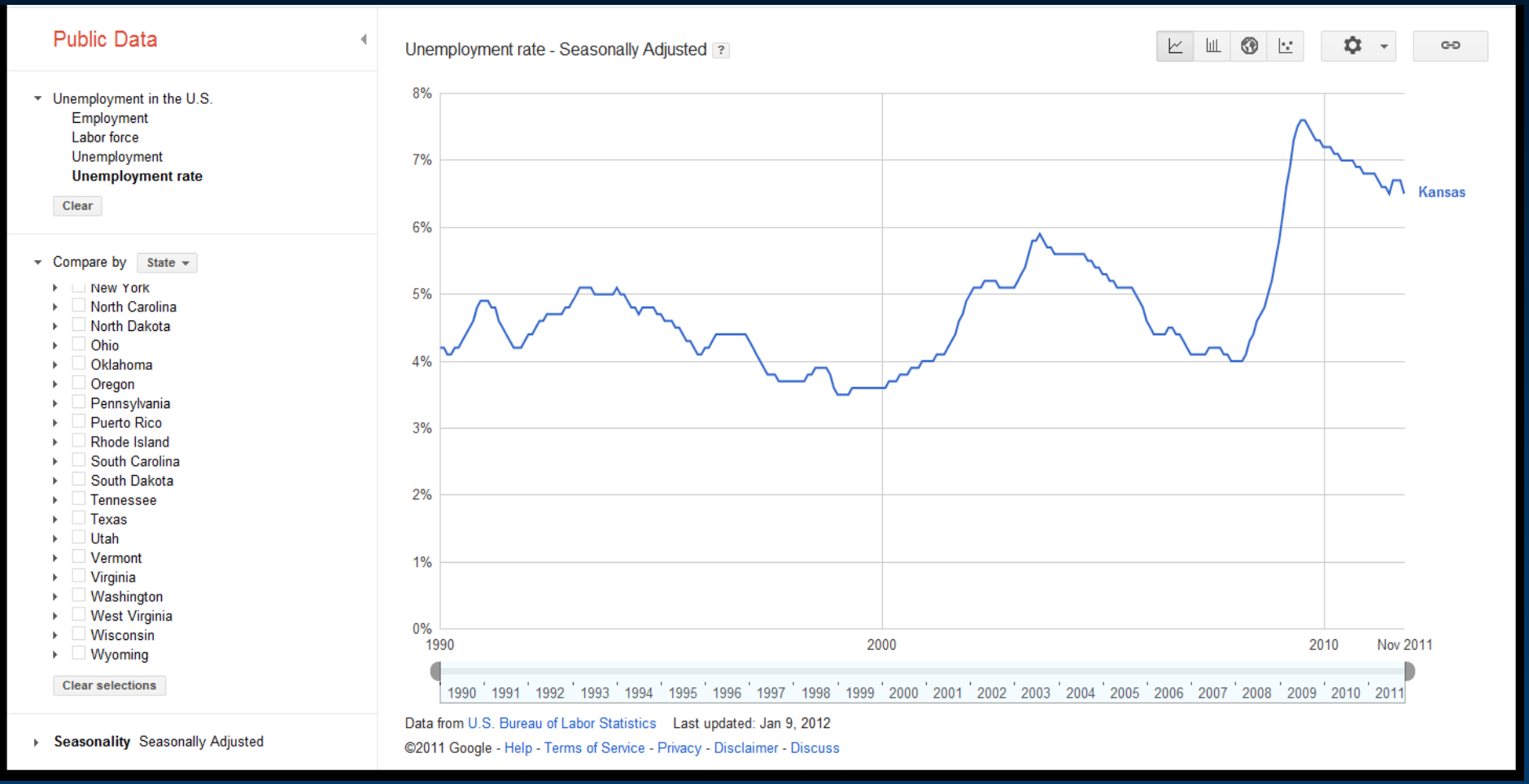
The Vision: Using Place As A Framework to Integrate Information



Typical Top 10 (or so) Issues

Everything we do is somewhere – and affects something else

- The Budget – Crunch is an Understatement
- Health Care
  - The aging population
  - Health Reform, Medicaid
- Economy, Jobs, Competitiveness, Recovery
- Education
  - K-12 Funding, Standards
  - Higher Ed, Access, Cost
- Energy/Environment – Cost, Alternatives
- Disasters, Weather (Fire, Drought, Tornado
- Transportation/Infrastructure
- Local Government Funding
- Public Safety – Corrections, juvenile justice
- Broadband Coverage


Public Data
Unemployment in the U.S.
Employment
Labor force
Unemployment
Unemployment rate
Clear
Compare by
State
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Puerto Rico
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
Clear selections
Seasonality Seasonally Adjusted
Unemployment rate - Seasonally Adjusted
8%
7%
6%
5%
4%
3%
2%
1%
0%
1990
2000
2010
Nov 2011
Kansas
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Data from U.S. Bureau of Labor Statistics Last updated: Jan 9, 2012
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Public Data

- Unemployment in the U.S.
  - Employment
  - Labor force
  - Unemployment
  - **Unemployment rate**

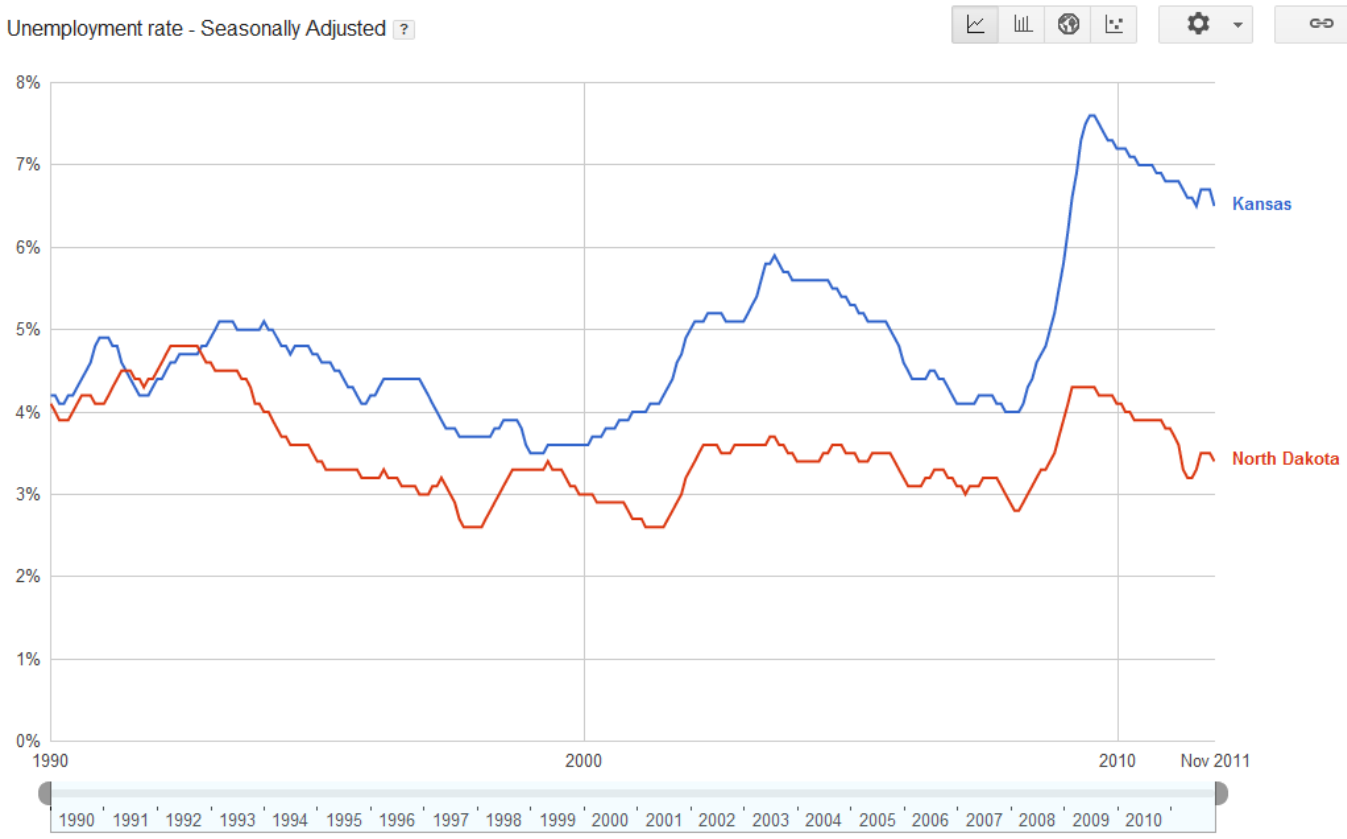
Clear

Compare by State

- New York
- North Carolina
- **North Dakota**
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Puerto Rico
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

Clear selections

Seasonality Seasonally Adjusted



Data from U.S. Bureau of Labor Statistics Last updated: Jan 9, 2012

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Public Data

- Unemployment in the U.S.
  - Employment
  - Labor force
  - Unemployment
  - **Unemployment rate**

Clear

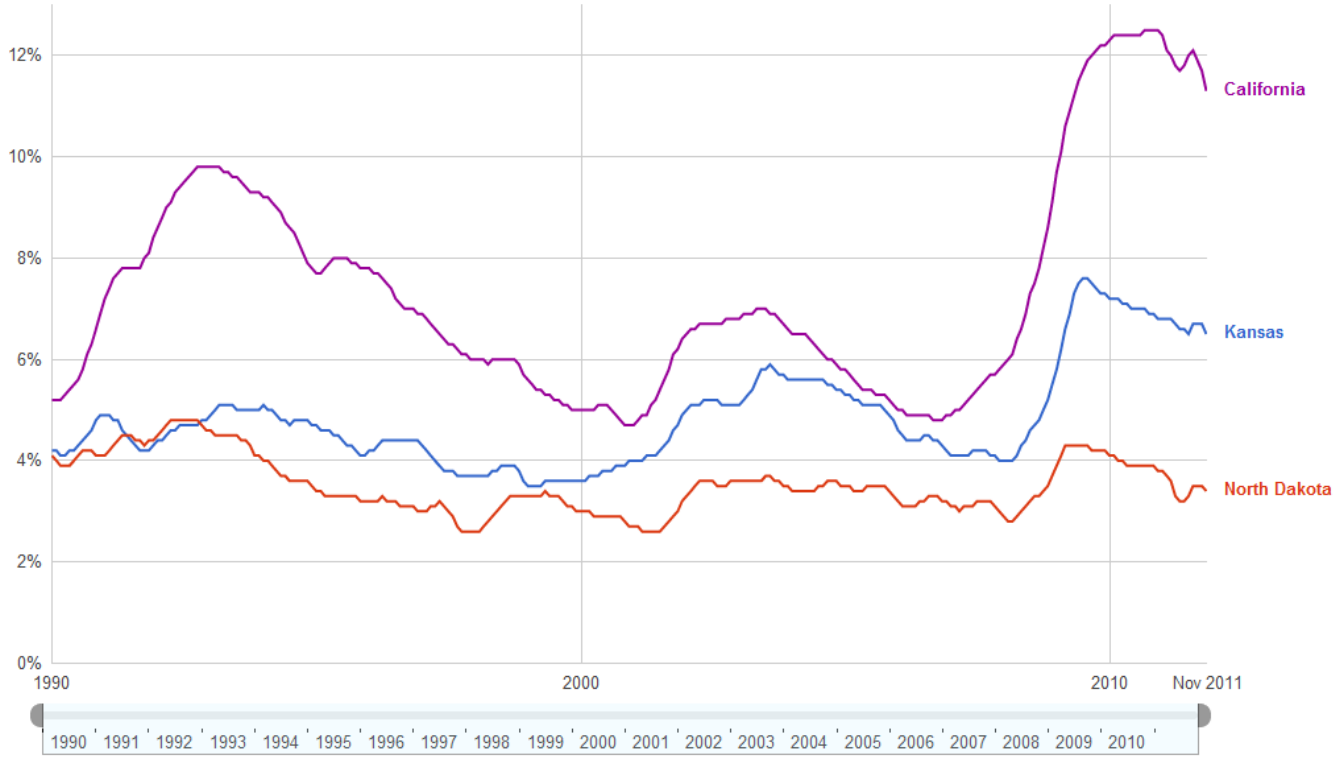
Compare by State

- Iowa
- ☑ **Kansas**
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- ☑ **North Dakota**

Clear selections

Seasonality Seasonally Adjusted

Unemployment rate - Seasonally Adjusted



Data from U.S. Bureau of Labor Statistics Last updated: Jan 9, 2012

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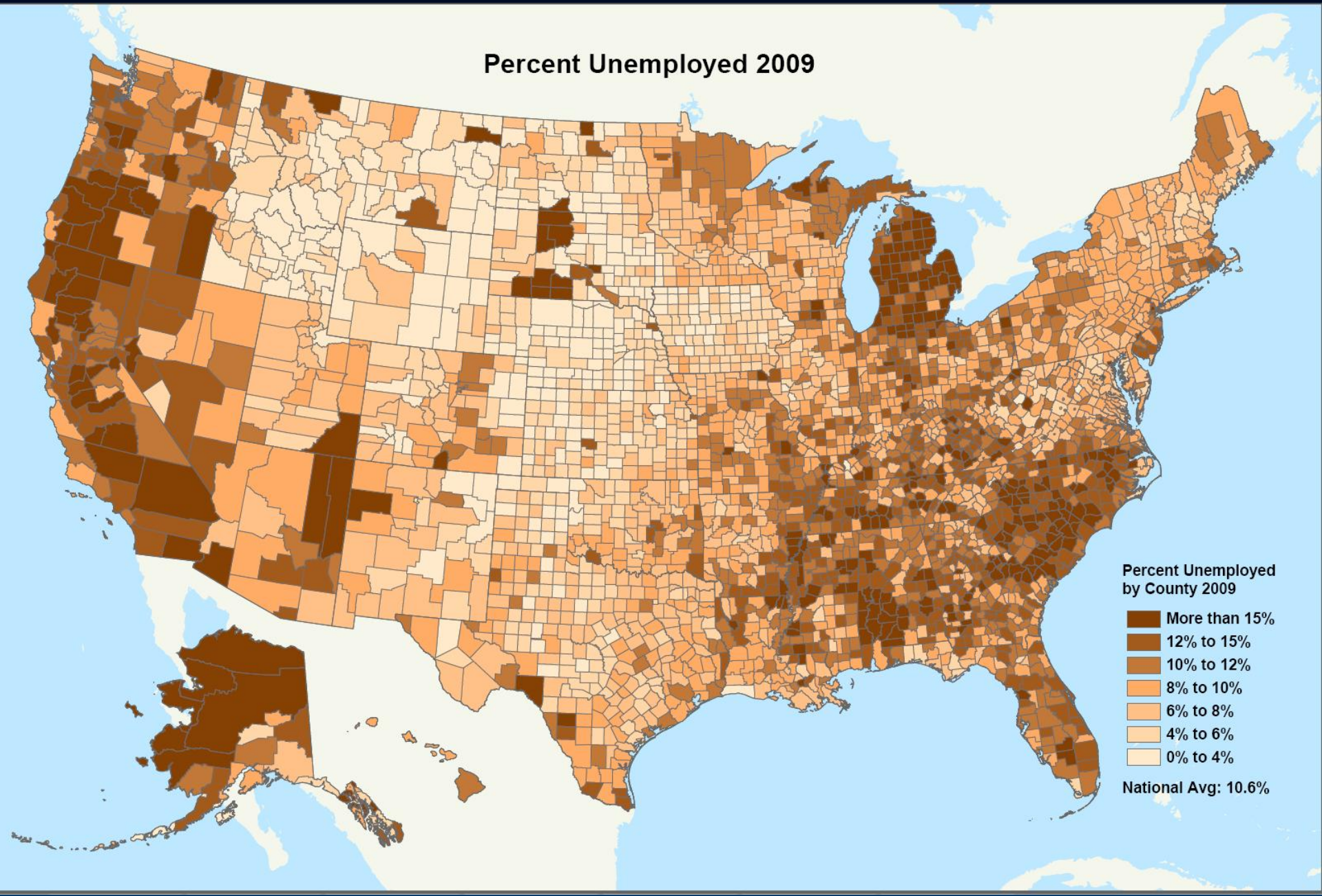
Percent Unemployed 2009



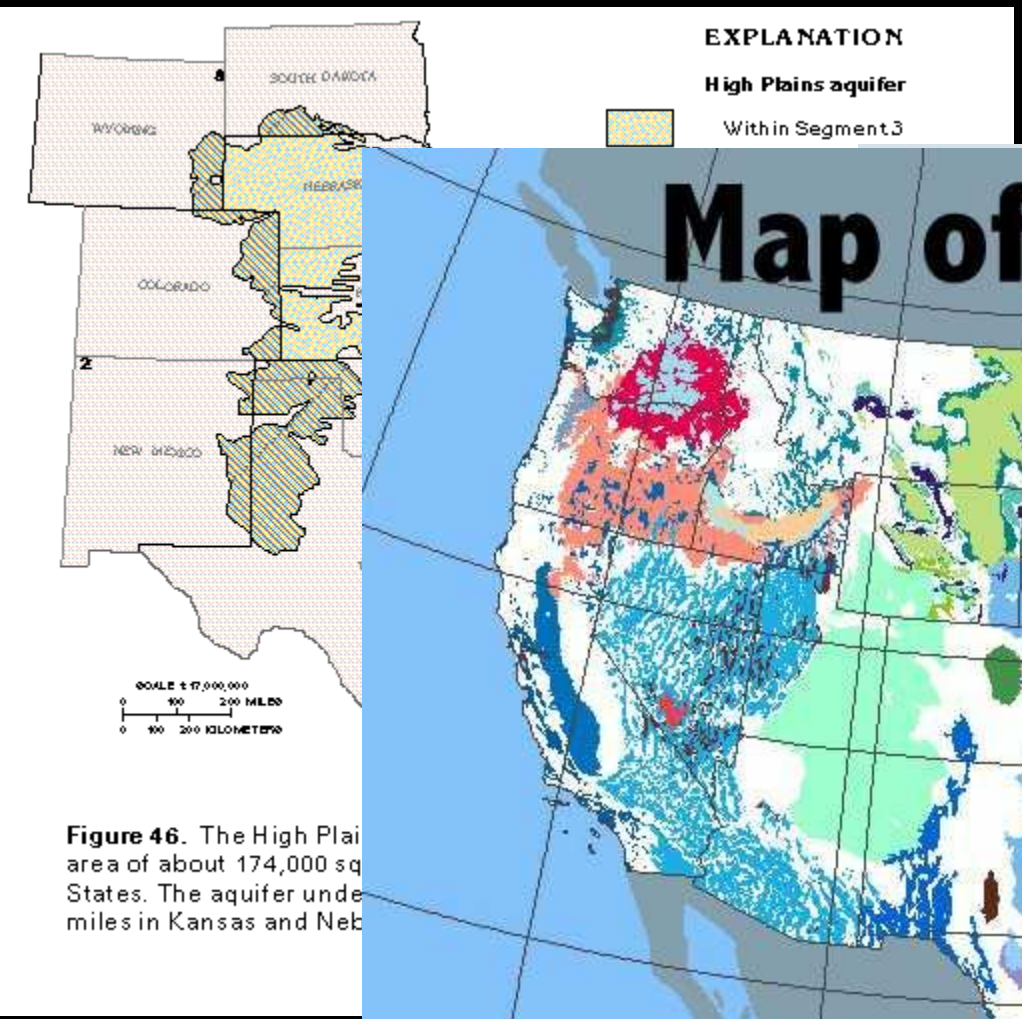


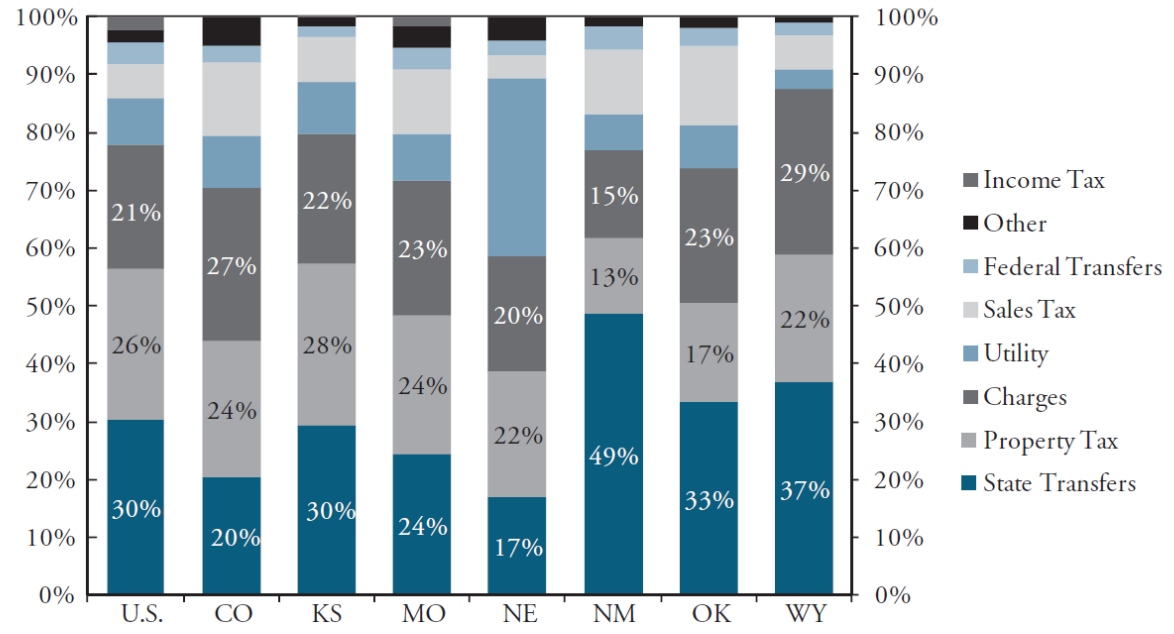
Figure 46. The High Plai
area of about 174,000 sq
States. The aquifer unde
miles in Kansas and Neb

Map of US Aquifers

National Atlas of the United States

Federal Reserve Bank of Kansas City, Tenth District

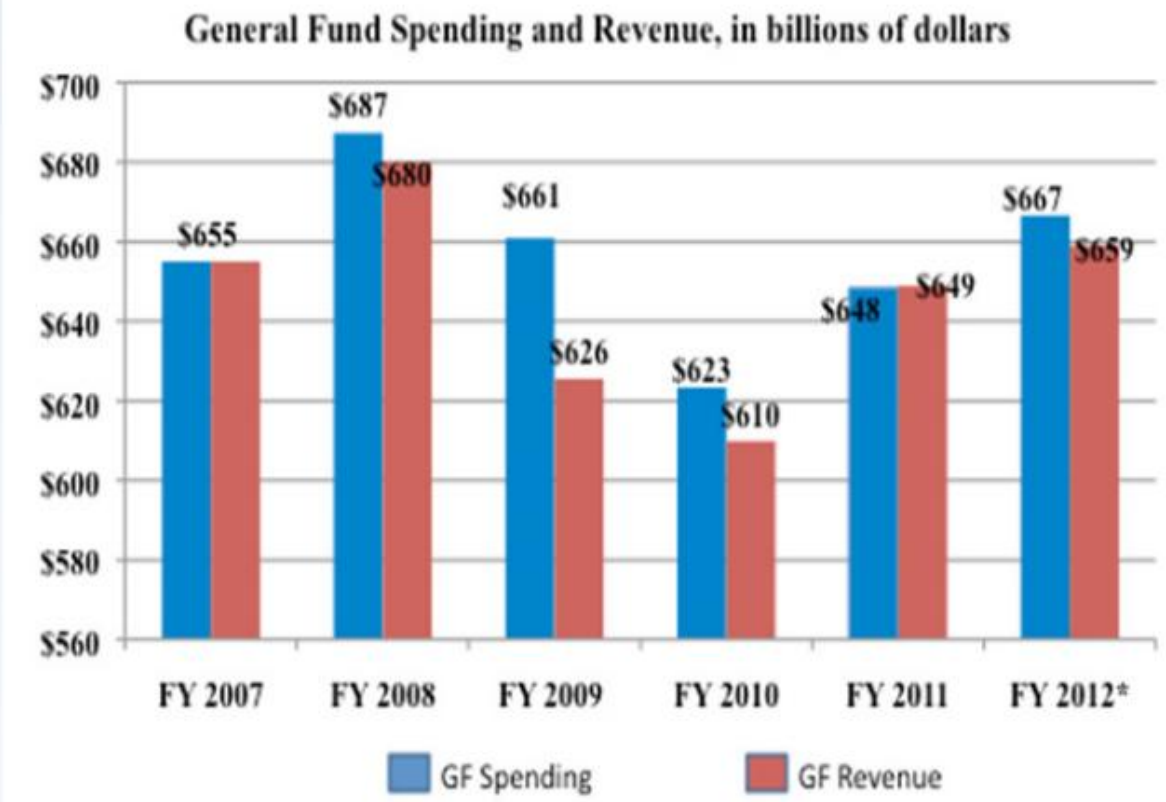
THE COMPOSITION OF LOCAL GOVERNMENT REVENUES, FISCAL YEAR 2008



Source: U.S. Census Bureau

Property taxes are the second largest source of revenue for most local governments.

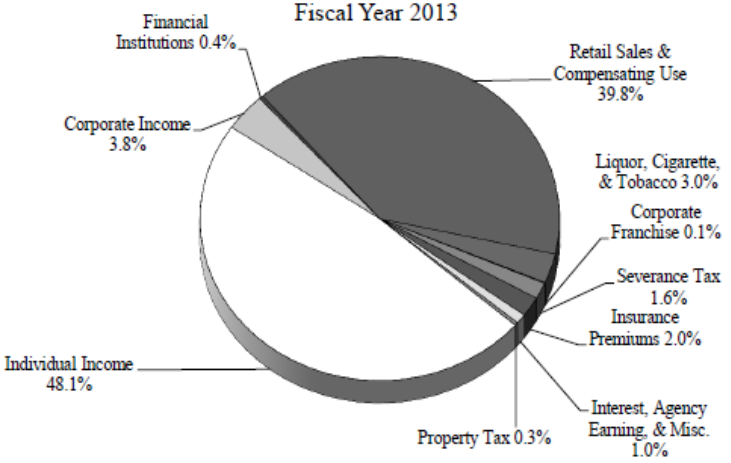
FY 2012 Spending and Revenue: Increasing but Still Below FY 2008



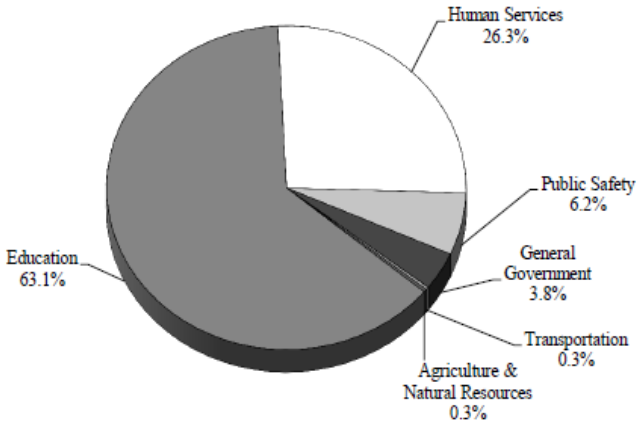
* FY 2007 – 2010 are actual, FY 2011 is preliminary actual and FY 2012 is enacted.

Kansas Budget Report 2013 – Gov Brownback

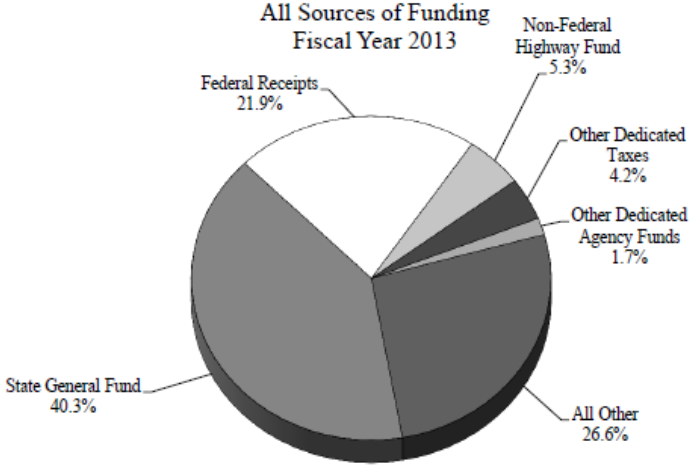
Where State Dollars Come From
State General Fund
Fiscal Year 2013



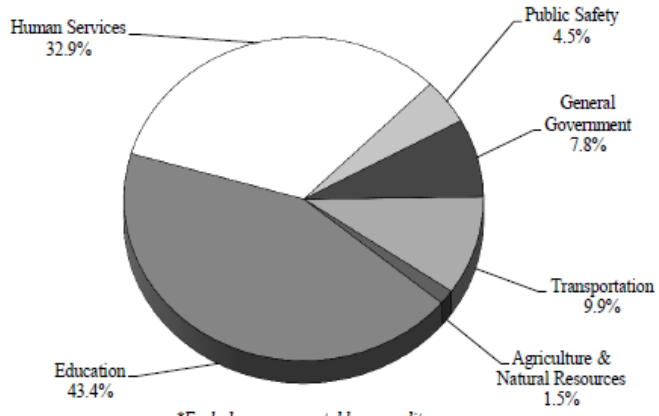
Where State Dollars Go by Function
State General Fund
Fiscal Year 2013



How the All Funds Budget Is Financed
All Sources of Funding
Fiscal Year 2013



Where State Dollars Go by Function
All Sources of Funding*
Fiscal Year 2013



Excludes non-reportable expenditures

- Increase in net personal income
- Increase in private sector employment
- Increase in the percentage of 4th graders reading at grade level
- Increase in the percentage of high school graduates who are college or career ready
- Decrease in the percentage of Kansas' children who live in poverty

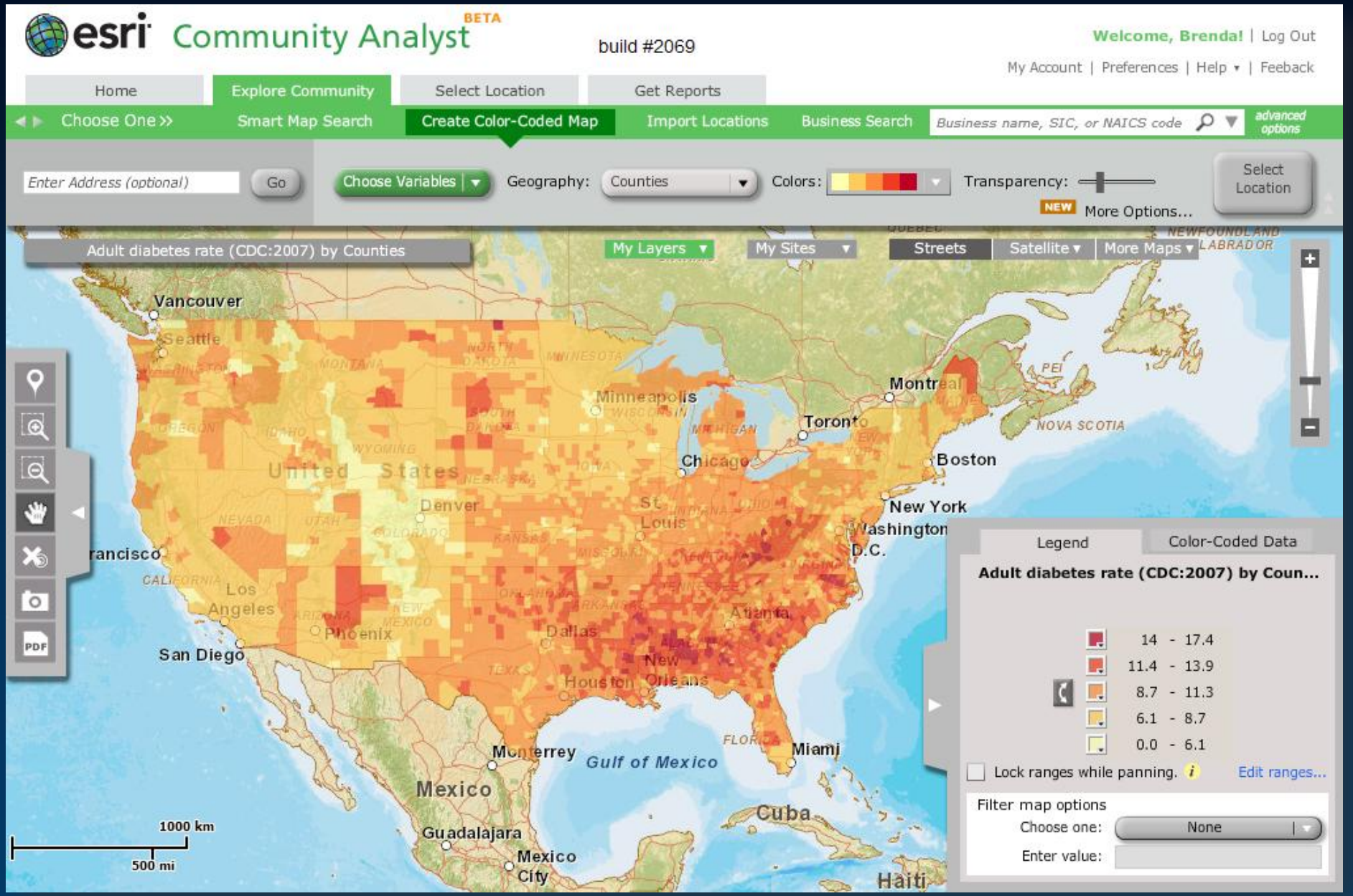
Roadmap for Kansas: Report Card

BigTicket Areas in the Budget

- Education
- Health
- Family Services
- Corrections and Public Safety

- Typically these four receive 85% t0 95% of the General Fund allocations

Map of Diabetes Rates by County



Gov’t Transparency, Accountability & Citizen Engagement

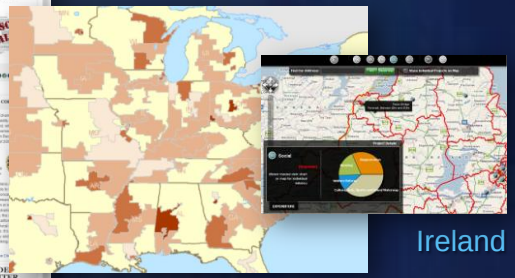
State Budget

Maryland

Stimulus Funding

Recovery.gov

eServices



United States

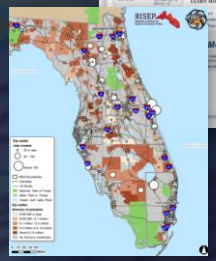
Ireland

E 311

New Jersey

Lithuania

Job Creation



Florida

Government Portals

Data.gov, USA

Lombardy, Italy

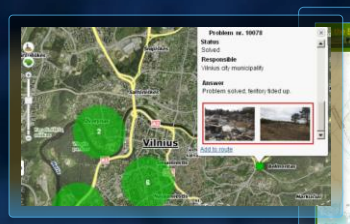
Geodata.gov

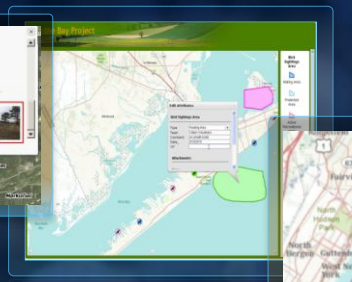
School Evaluation

Abu Dhabi

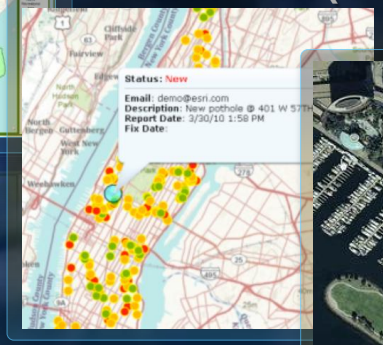
People Are More Involved: Crowd Sourcing & Social Media

Creating New Sources of Information and Interaction

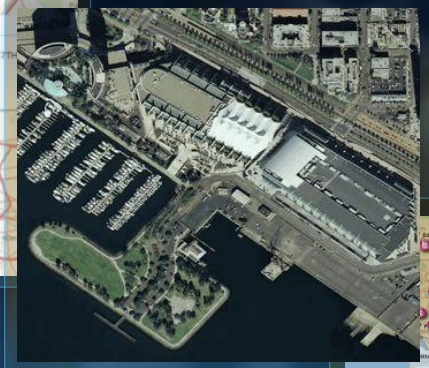




Volunteered Geographic Information (VGI)



Twitter



Social Media

Community Awareness

Situation Awareness

Analysis

- Texting
- E-mail
- Twitter
- Browser

Enriching eGov Systems with Diverse Observations, Perceptions & Opinions

. . . Creating New Opportunities & Challenges

The Smart Phone As A Sensor, as Volunteer Generated Information

The Game Changer

Using Geography to Advance the Business of the Legislature

- The power of place to support decision-makers
- The power of Geographic Information Systems to integrate data from various sources
- Understanding interrelationships
- Model and determine priorities, allocate resources
- It's not about technology – it's about solutions

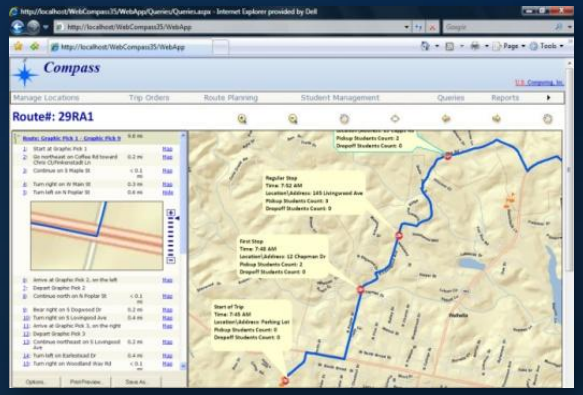
. . . As a Framework For Strategic Thinking

State & Local Fiscal Outlook

- Austere budgets for at least the next several years
- Health and education will continue to have the greatest impact on state finances
- Tough competition for state general funds, less share with local governments
- Demand for performance and results
- Opportunity to transform service delivery
- Citizen engagement to self-deliver services

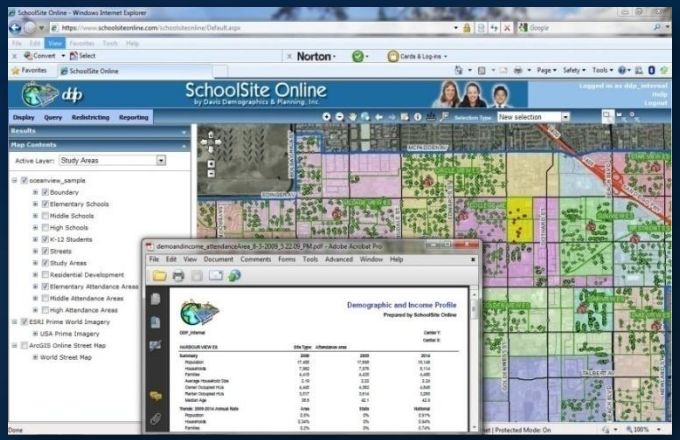
Education

School Bus Routing



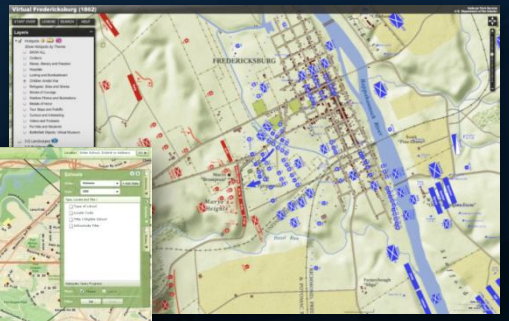
US Computing, Inc

Student Demographic and Income Profile



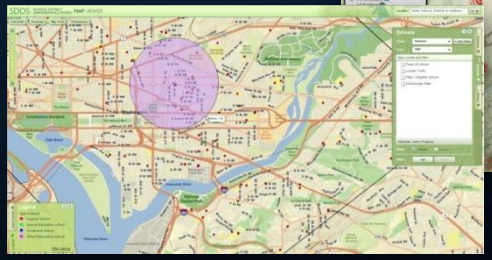
Davis Demographics

Civil War Educational Mapping



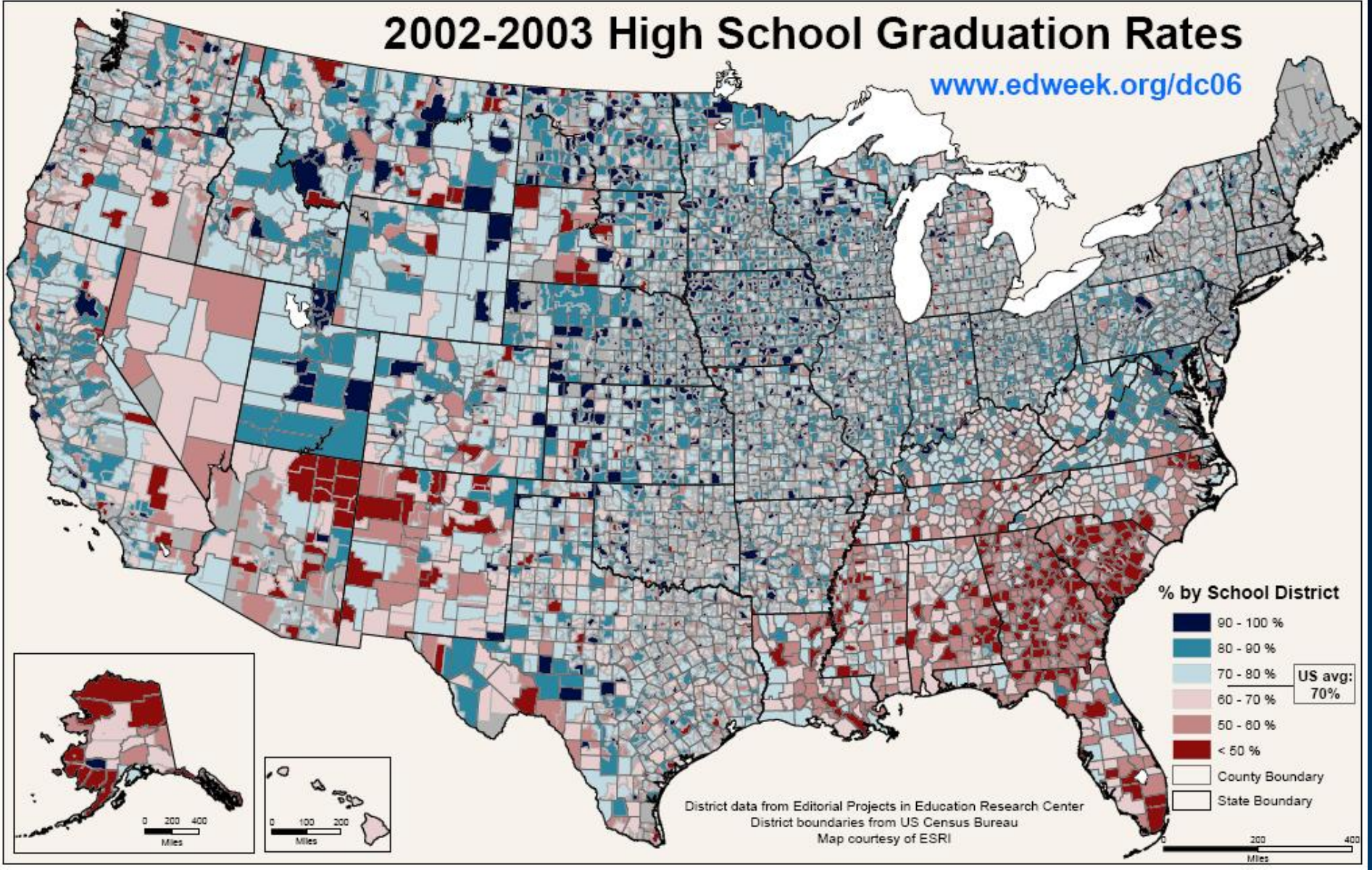
Blue Raster

National Center for Education Statistics



Campus Facilities Assessment

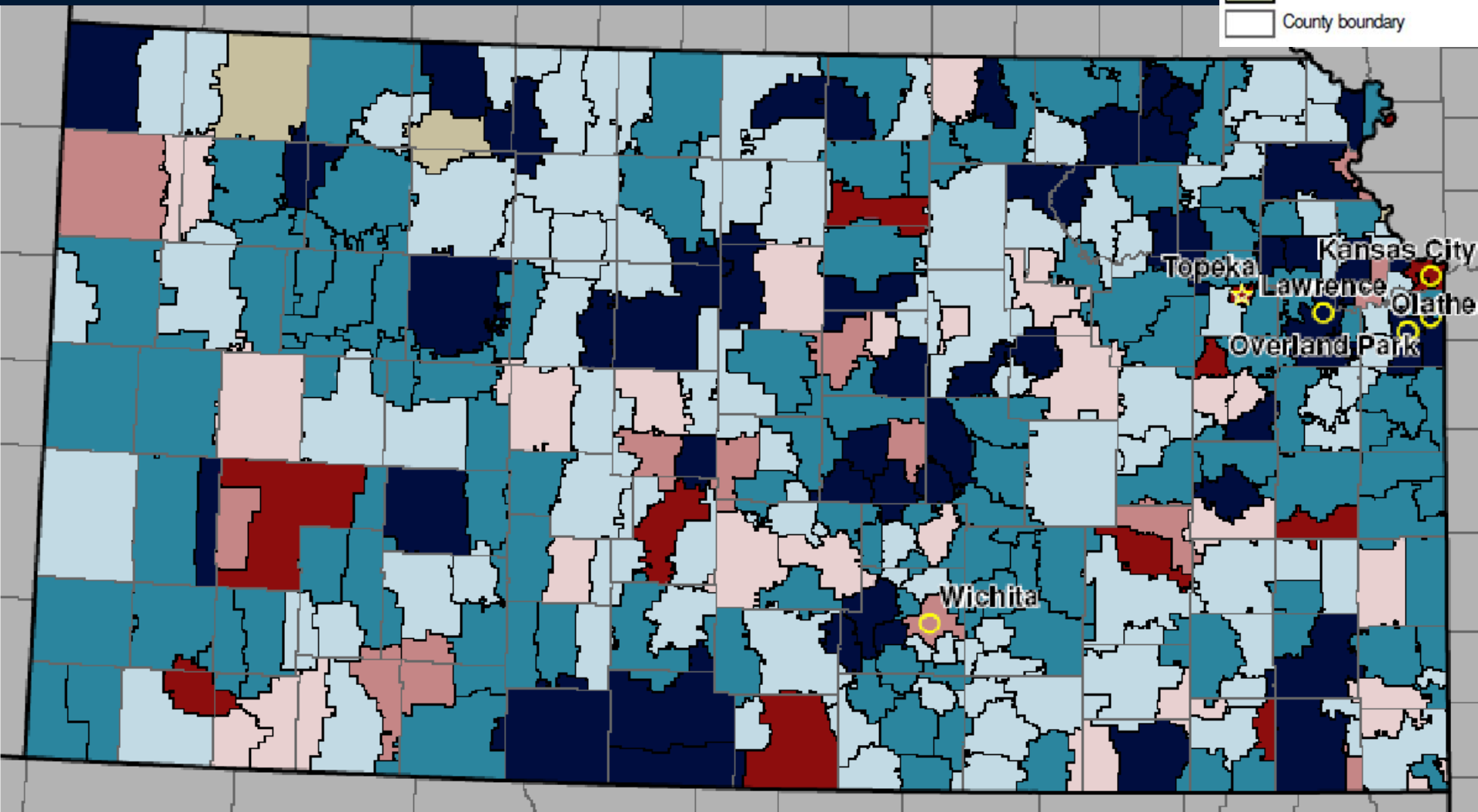
R & K Engineering

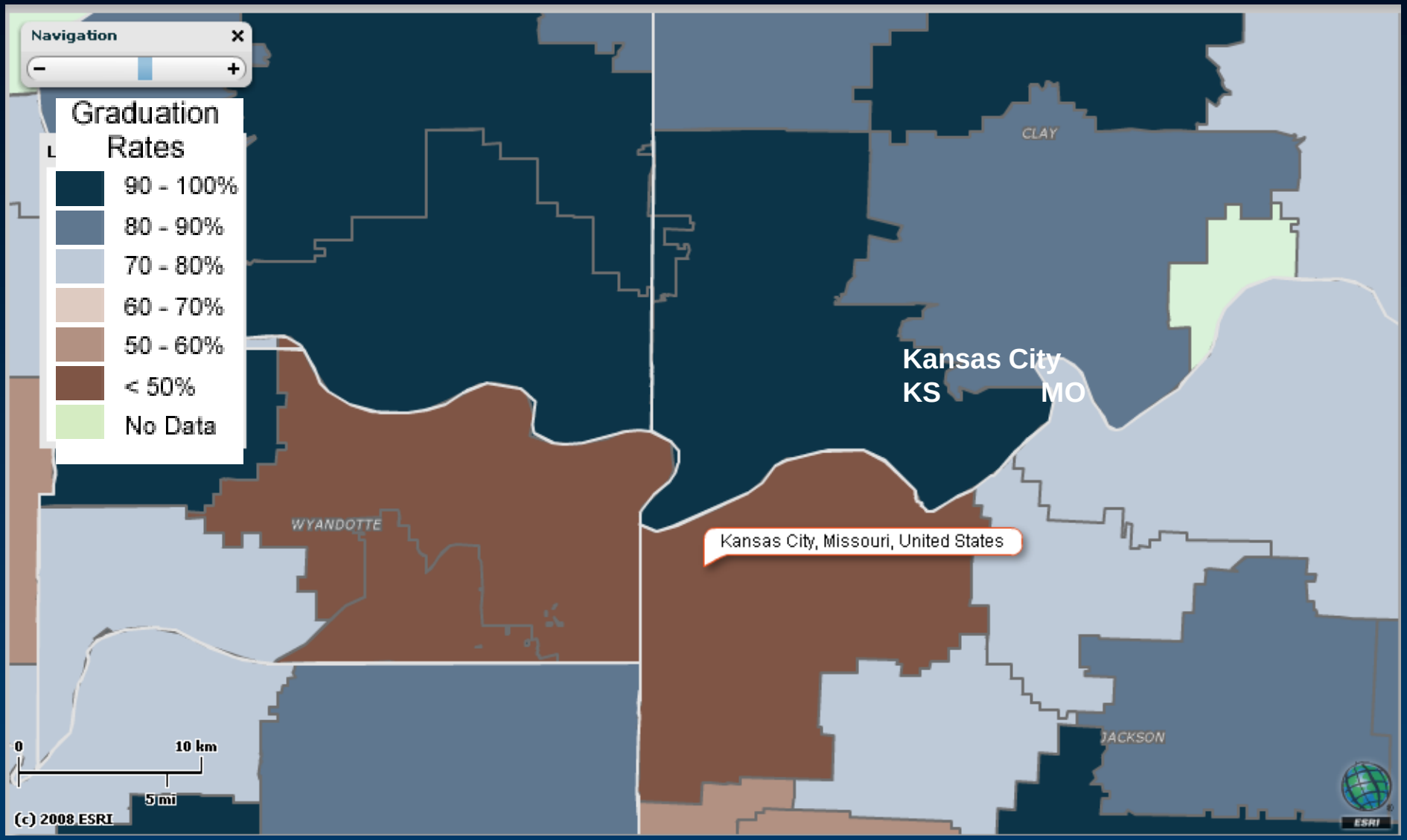


http://www.edweek.org/media/ew/dc/2006/usmap_districts.pdf

High School Graduation Rates for Districts in Kansas 2003-04

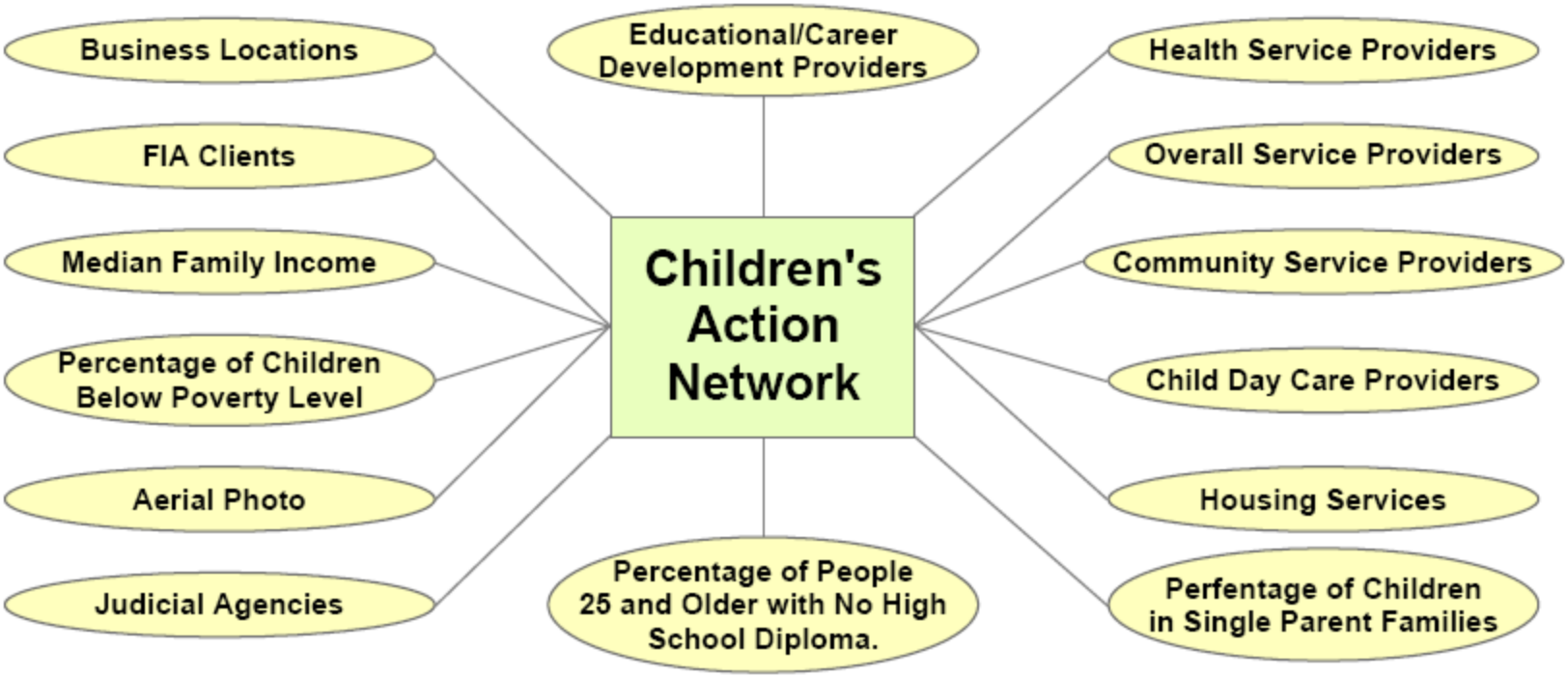
Source: Education Week, EPE Research Center





http://maps.edweek.org

No Child Left Behind
State of Michigan Governors' Initiative:
Children's Action Network (CAN)



225 schools failing in the "no child left behind" program were examined and GIS was used to help determine appropriate action for overall improvement.

Map Search

Common Keywords

- ☐ Age
- ☐ Asian
- ☐ Black
- ☐ Ethnicity
- ☐ Female
- ☐ Gender
- ☐ Households
- ☐ Income
- ☐ Male
- ☐ Population
- ☐ Poverty
- ☐ Race
- ☐ Vacant
- ☐ White

Keyword Search

Search ARMS for maps: Search

Search the ARMS map archive for plots covering various topics. These maps are ideal for printing and inclusion in reports or grants. All maps include references to the data source and production date. Use the *"Common Keywords"* search or use your own custom search in the box above.

Top 100 Maps!!! NEW

- First Grade Retention 2006
- 2005 Local Education Spending PPE
- 2005 State Education Spending PPE
- 2005 Federal Education Spending PPE
- Percentage of Active Voters (2006) Active Voters div by Voting Age Population for December of each year
- 2005 Infant Mortality Rate (per 1,000 live births) by County
- 2006 Infant Mortality Rate (per 1,000 live births) by County
- 2006 Divorce Rate (per 1,000)
- 2005 Child Death Rate (per 1,000)
- 2006 Child Death Rate (per 1,000)

Full List >>

Alabama Resource Management System - c/o Alabama Department of Children's Affairs
2 North Jackson Street, Suite 602 | Montgomery, AL 36104

nancial

Juvenile Detention Grants

Tobacco Settlement Grants

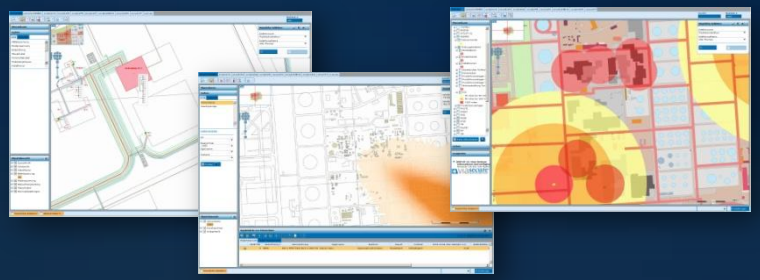
School Safety Grants

Delinquency Prevention Grants

211

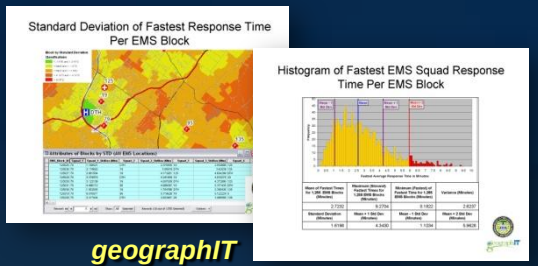
Emergency Management

Hazardous Incident Simulation and Management



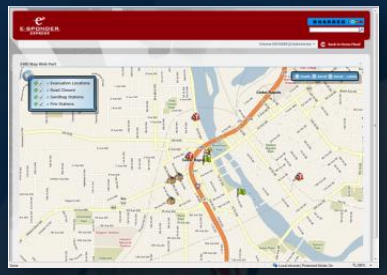
Complete Plant Solutions

EMS Response Time



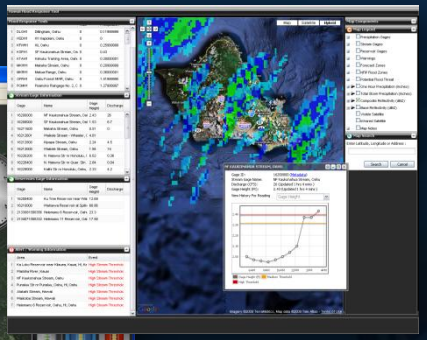
geographIT

Flood Evacuation Routing



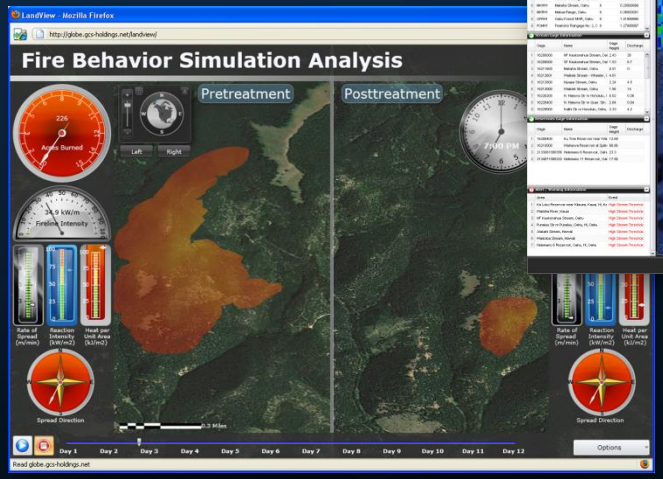
E.Sponder

Flood Response



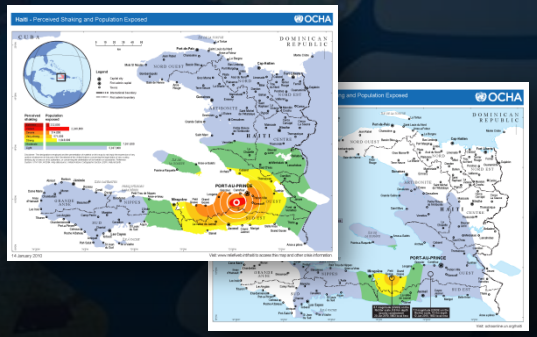
Dewberry

Fire Simulation

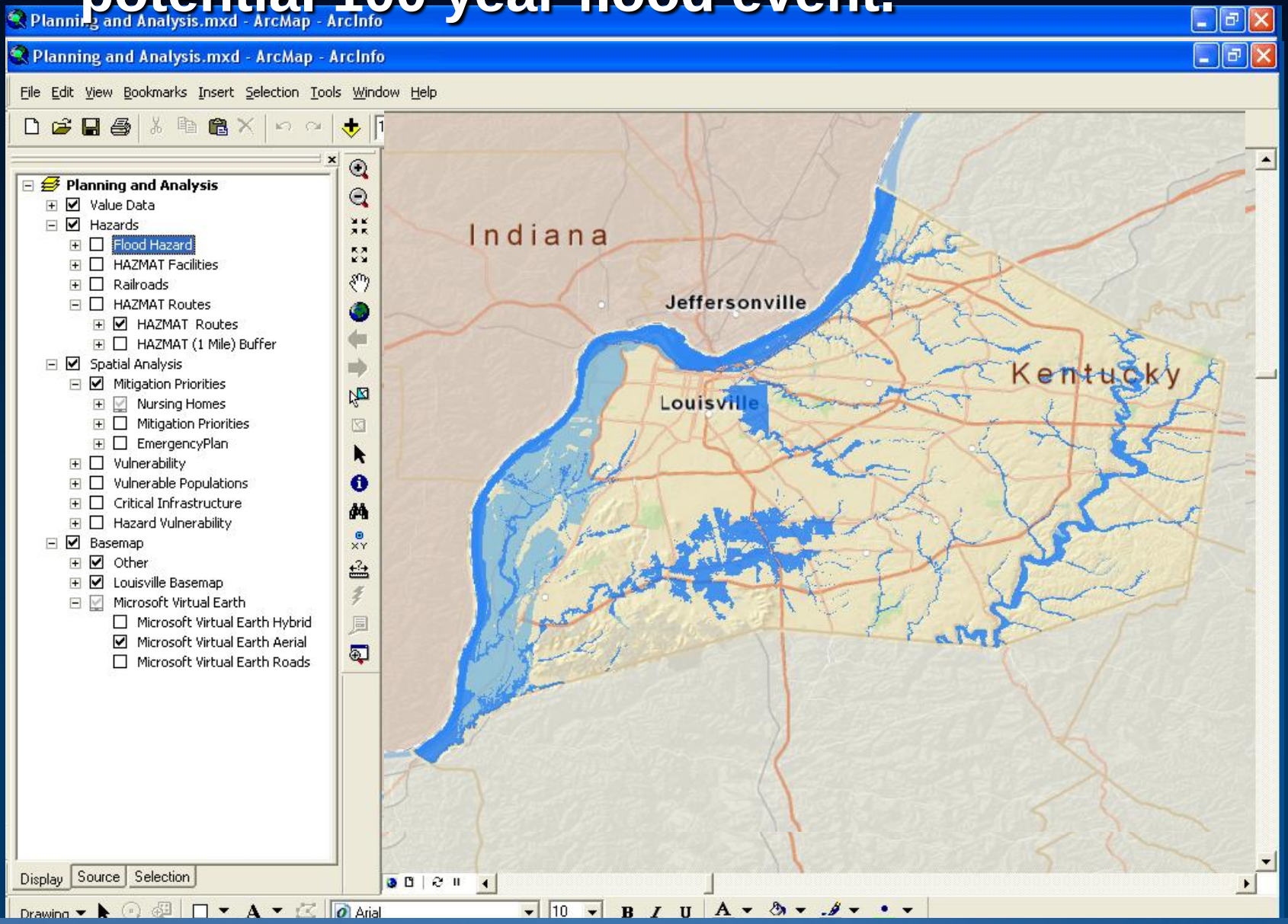


GCS Research

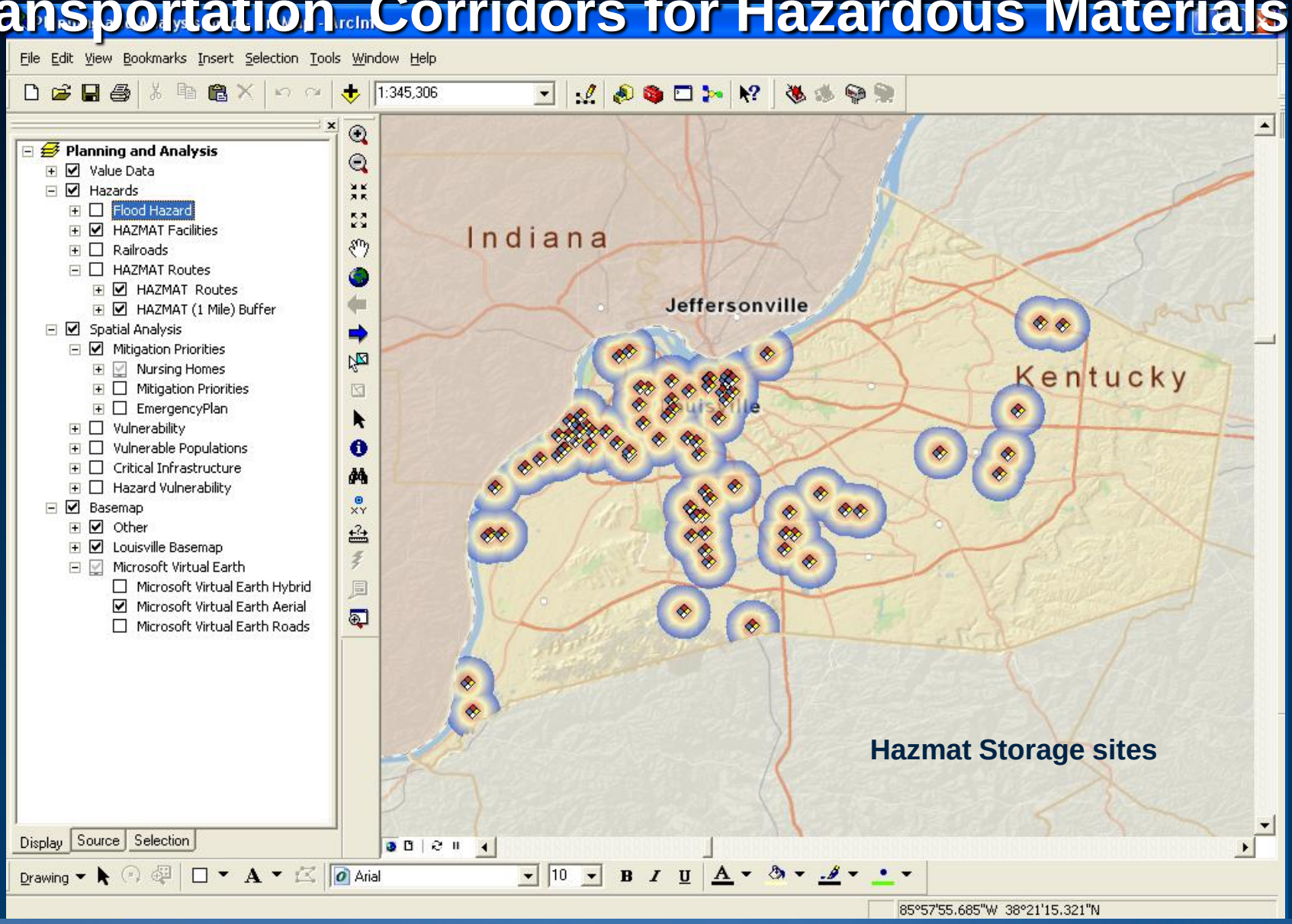
Response in Haiti



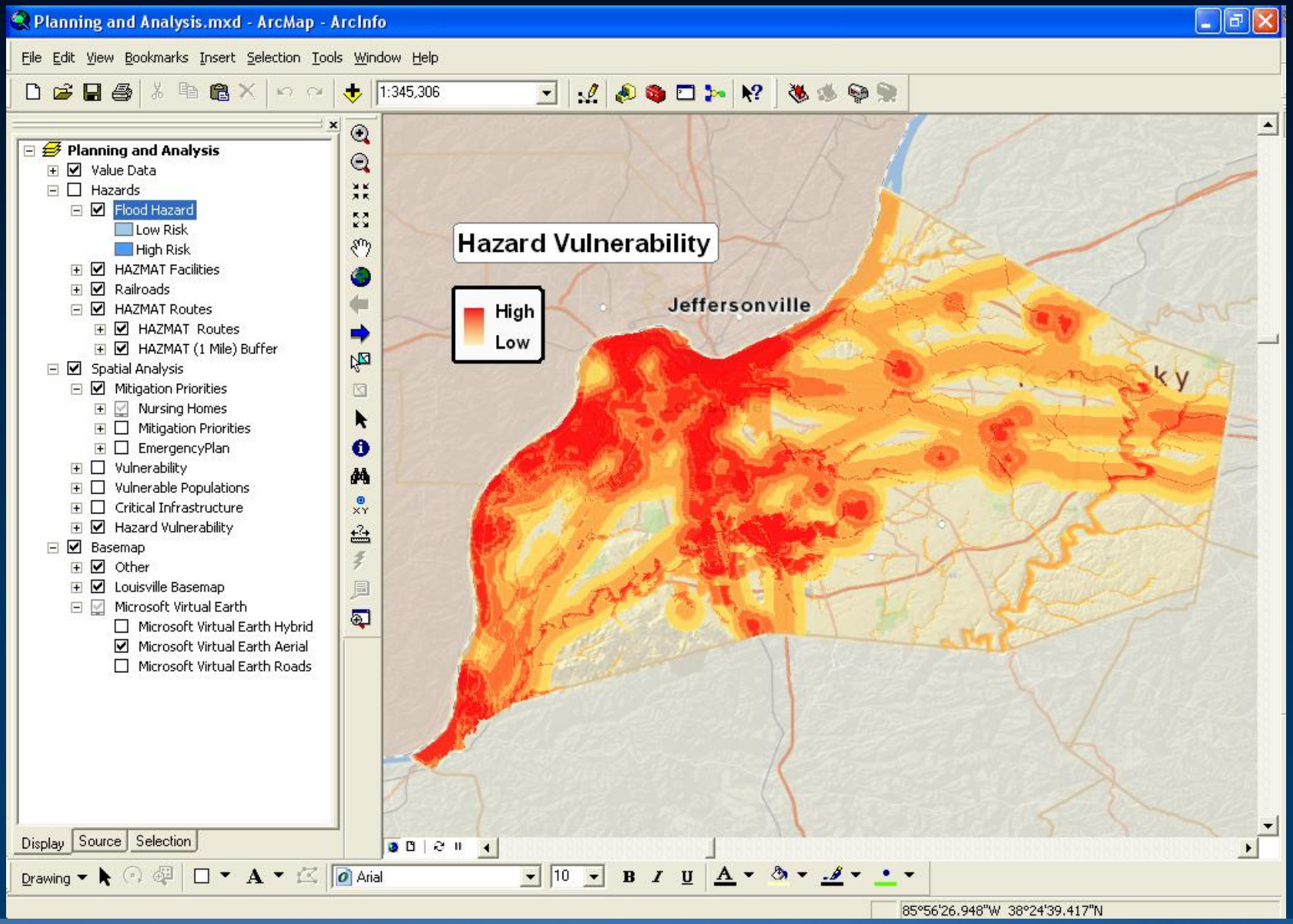
Assessment – Natural Hazards - potential 100 year flood event.



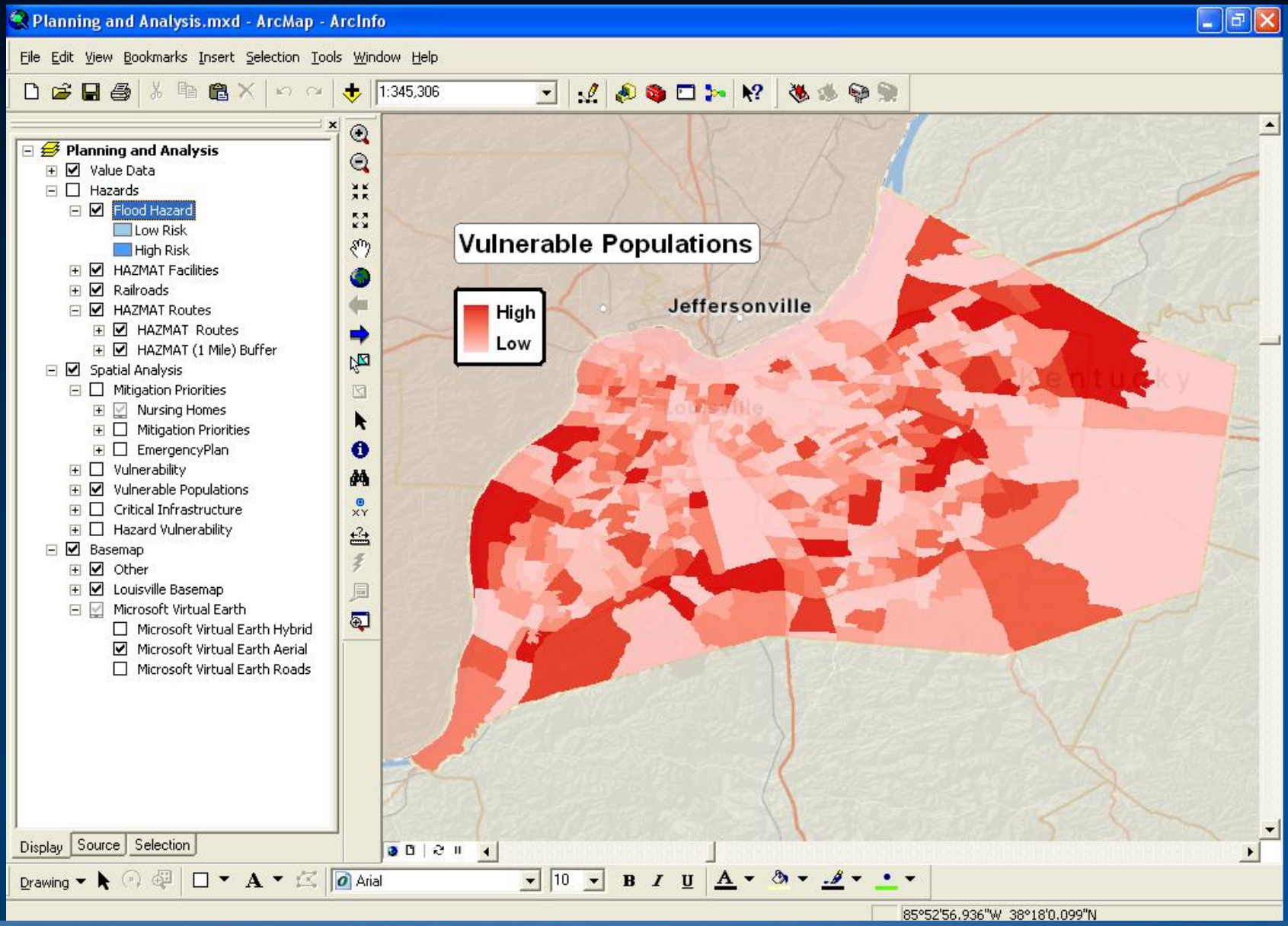
Assessment – Technological Hazards- Transportation Corridors for Hazardous Materials



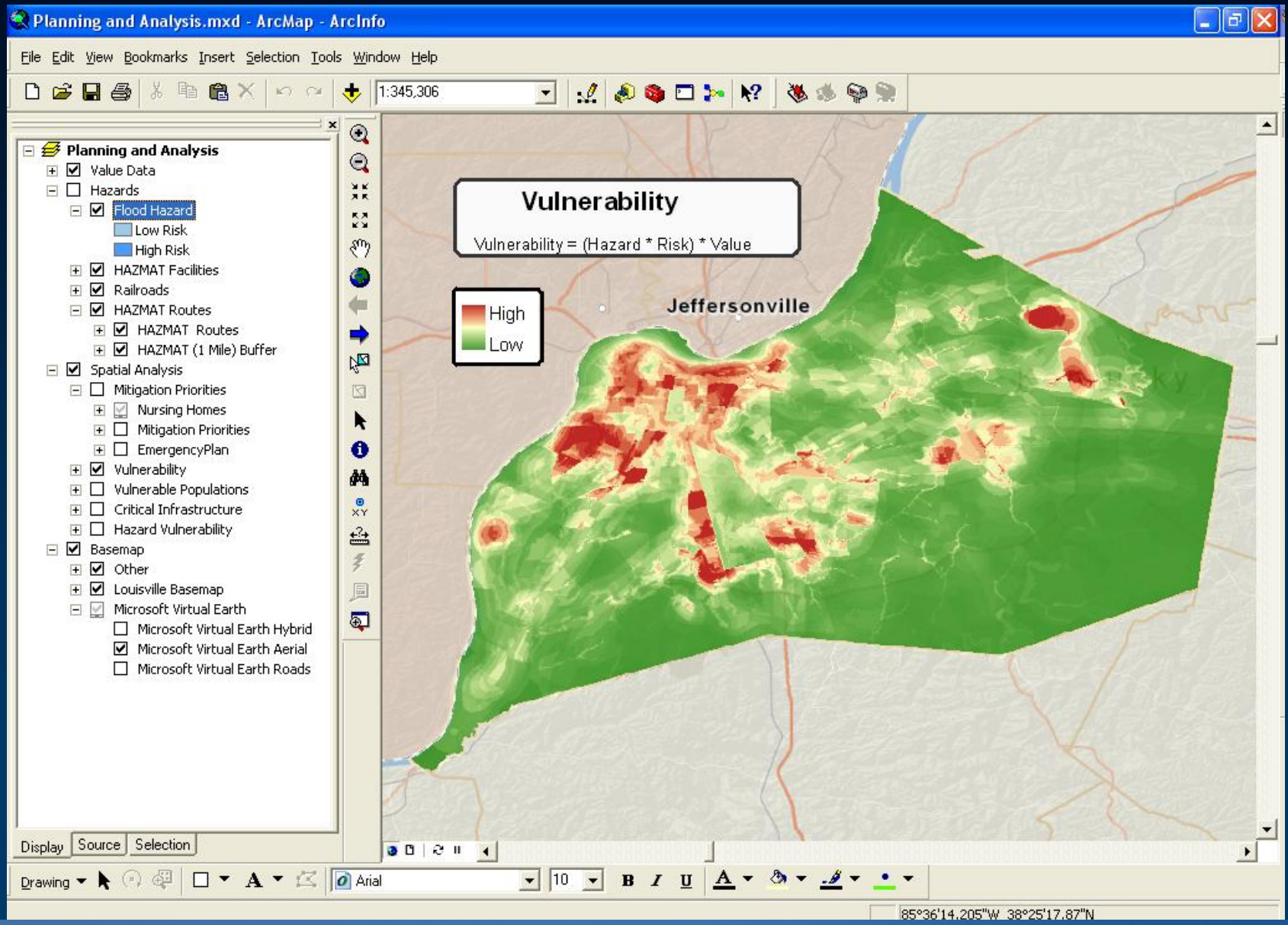
Assessment – All Hazards



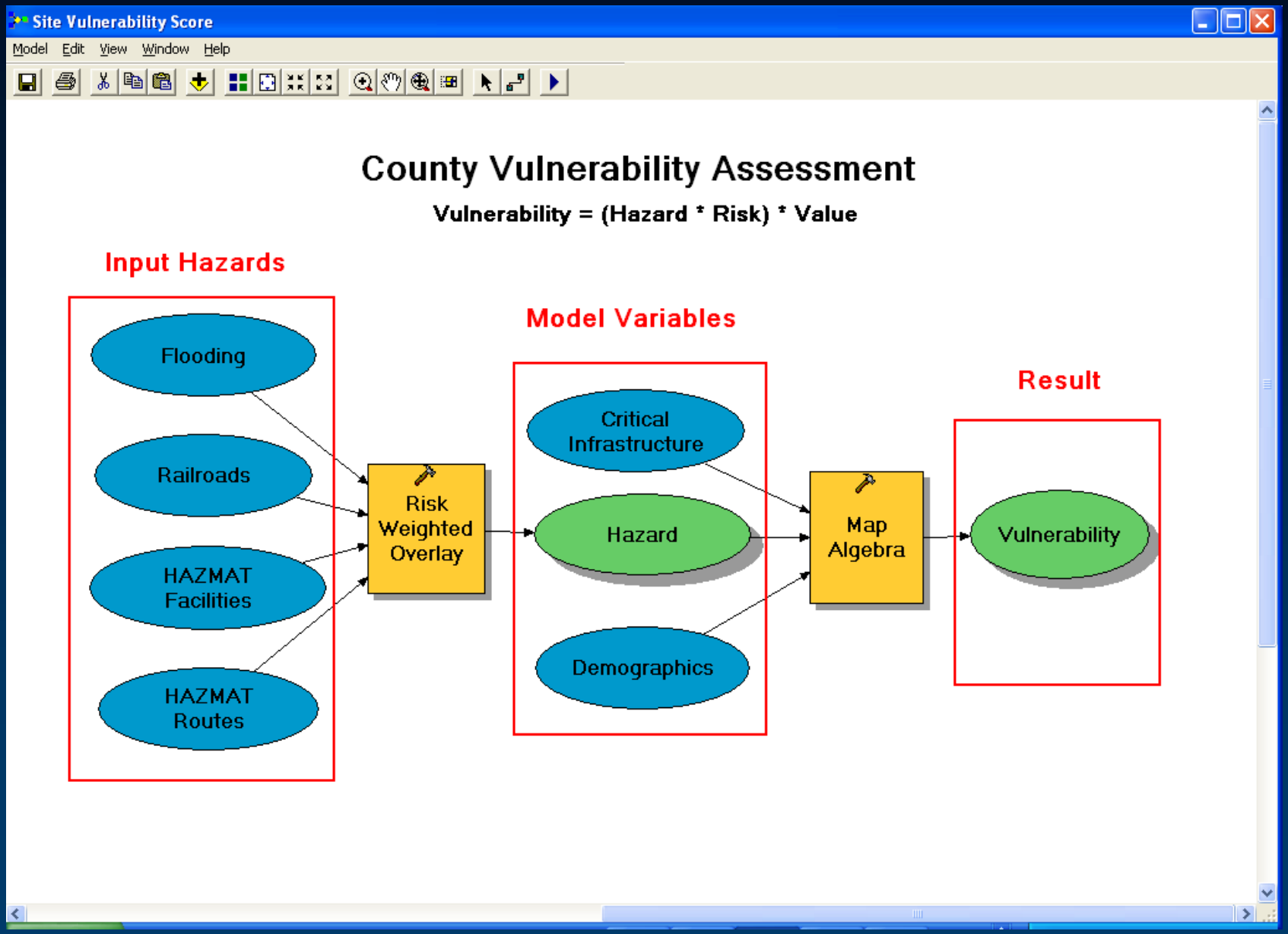
Assessment – Values



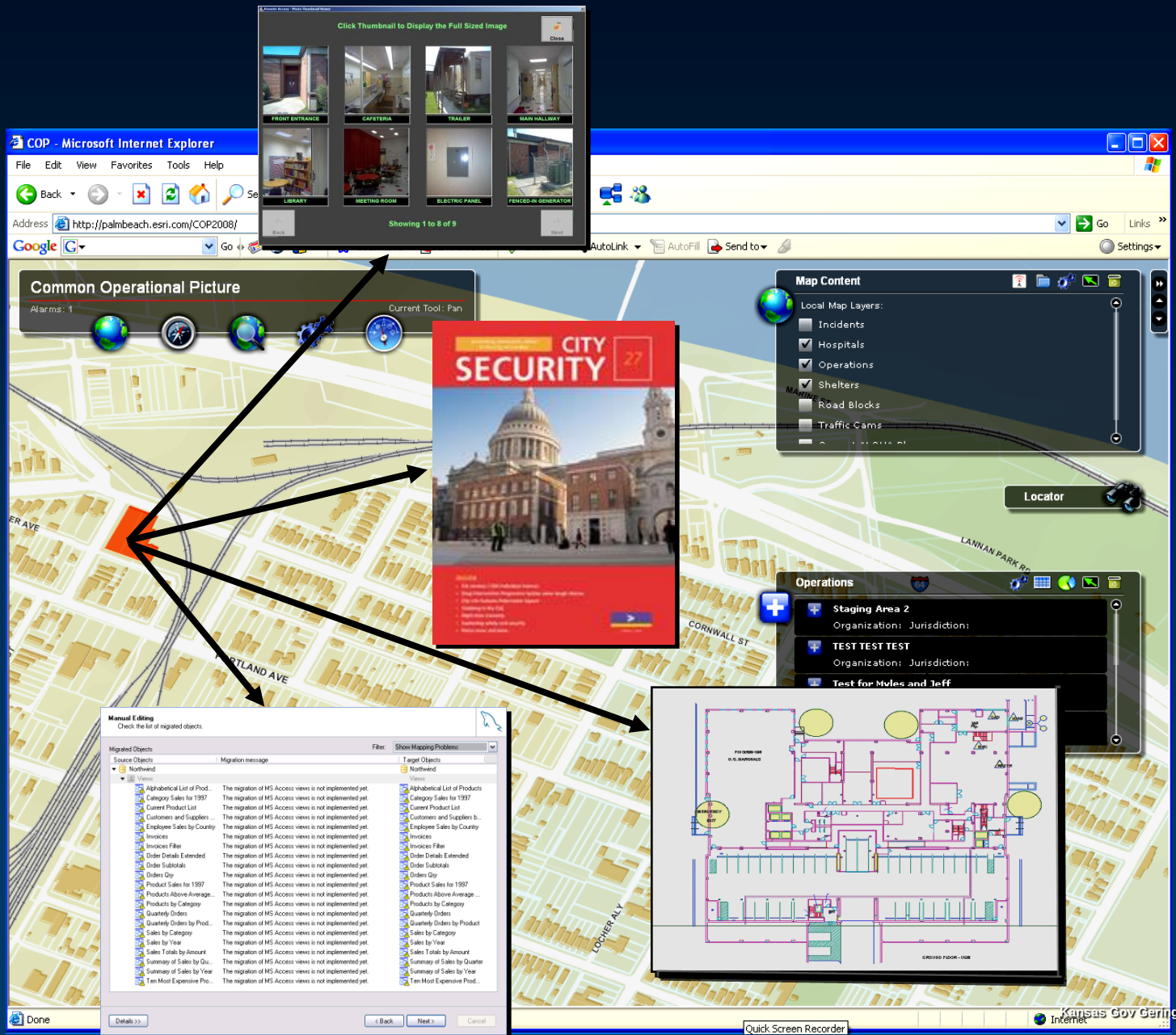
Assessment – Overall Value Exposure



Hazards Exposure Modeling



Data Management – Operationalize Plans

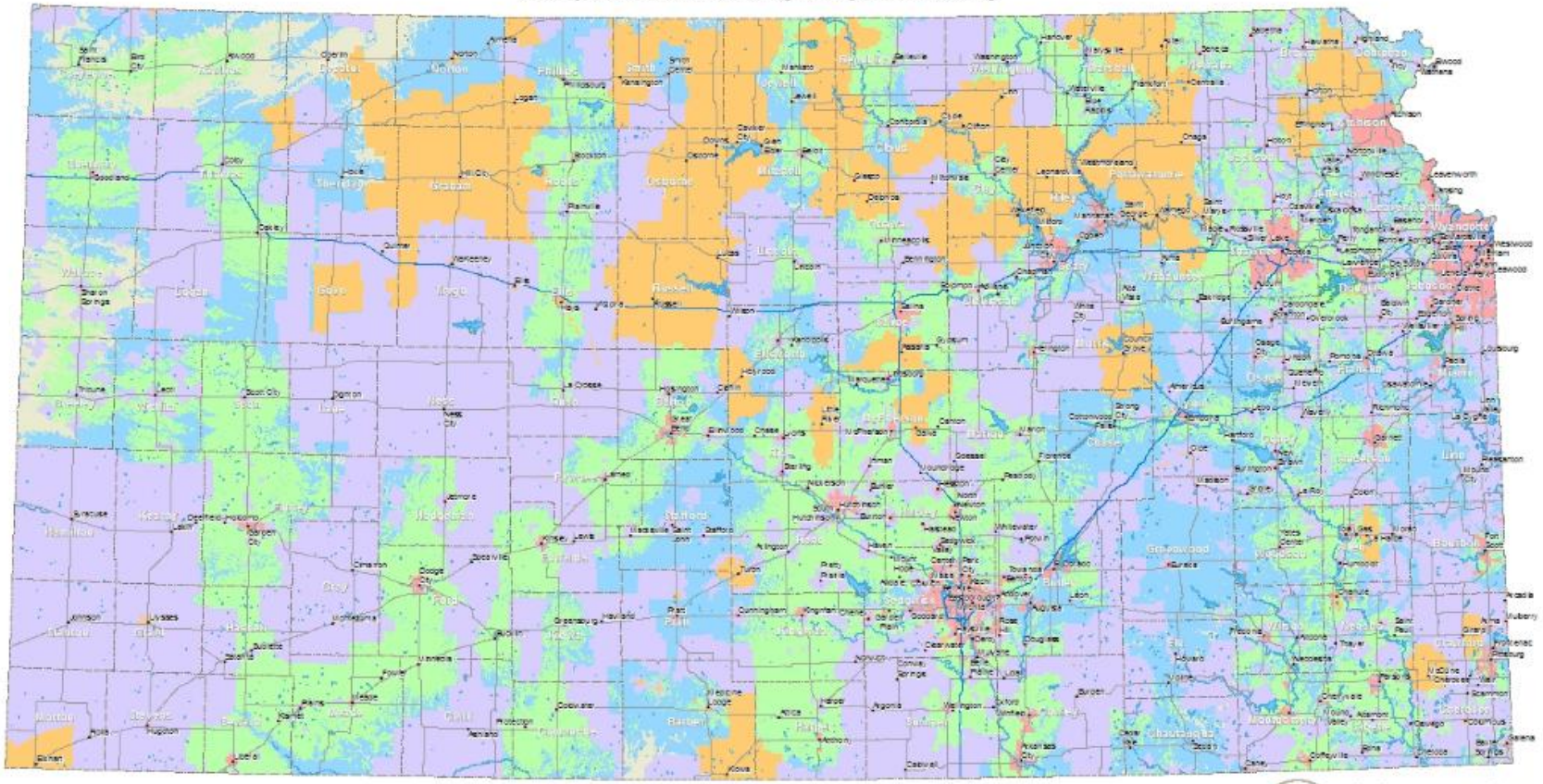


File Edit View History Bookmarks Tools Help
KS_Statewide_Broadband.jpg (J...
www.connectkansas.org/CKSPublic/Connect_Kansas_Mapping/Statewide_Maps/KS_Statewide_Broadband.jpg
Google

Broadband Service Inventory for the State of Kansas

Advertised Speeds of at Least 768 kbps Downstream and 200 kbps Upstream

Submit questions or recommended changes to: maps@connectkansas.org



As required by the US Department of Commerce's State Broadband Initiative, if broadband service is available to at least one household in a census block, then for mapping purposes, that census block is reported to have some level of broadband availability. As such, broadband availability at an exact address location cannot be guaranteed. Providers supplying more specific data than census block are displayed as such.

Map users are encouraged to participate in improving broadband data granularity through data validation and field testing efforts. Learn more about this and other broadband mapping facts at www.connectkansas.org.

Updated October 1, 2011

BETA Version

N

0 10 20 40 60 Miles

Symbology

In areas where multiple broadband providers offer service, this platform composite map stacks coverage display layers in the order presented below.

- City
- Interstate
- US Road
- County Boundary
- Water
- National/State Land
- Fiber Broadband Available
- Cable Broadband Available
- DSL Broadband Available
- Fixed Wireless Broadband Available
- Mobile Wireless Broadband Available*
- Unserved Area

CONNECT KANSAS®

This map represents areas of broadband service availability determined by ongoing, in-depth technical analysis of provider networks and accommodations for the impact of external factors on service quality. Satellite broadband services may also be available.

*This map is not a guarantee of coverage, contains areas with no service, and generally predicts where outdoor coverage is available. Equipment, topography and environment affect service.

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It all comes down to usability

- A big report is impressive but is likely to be difficult to use and tedious to evaluate
- Legislators and other People want actionable graphics, not just data tables
- Be sure the information is understandable – would your mother be able to understand it?
- The biggest challenge of all is not always technology - it may be people and processes - fragmentation

GIS for Decision Support

– Solving Problems

Thanks!
esri
Wyoming