



The Business of Government. While carrying out the day-to-day business of government, public officials deal with a range of complex and important issues including: reducing crime, enhancing public safety, containing costs, managing growth, improving accountability and protecting the environment. In order to address these issues, officials make decisions relying on the information they have on hand. These decisions lead to actions that directly affect citizens and help determine a community's—and a country's—quality of life.

Giving Decision-Makers the Power to Make More Informed Decisions

The federal Office of Management and Budget describes government information as “a valuable national resource.” But the value of this resource depends upon how accurate, current and comprehensive the information is—and, how quickly it can be put to work to solve problems.

Furthermore, it is estimated that approximately 80% of all government information has a spatial, or geographic, component. If this information could be depicted and shared graphically, decision-makers could virtually see the issues before them and select the best course of action.

This is where geographic information systems (GIS) technology comes in. GIS is a computer-based data collection, storage and analysis tool that combines previously unrelated information into easily understood maps.

The beauty of GIS is that once spatial datasets are built, it is possible to quickly analyze and visualize a myriad of relationships among the datasets as situations develop and priorities shift. A proven technology, GIS is a dynamic and powerful tool that can interpret and portray diverse information from a variety of sources to accurately and consistently meet users' needs, even as those needs change.

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Presenting Information in a Clear and Compelling Way

North Carolina's School Bus Transportation System

North Carolina's Department of Public Instruction decided it needed to manage the state's school buses more efficiently. The Department developed a pilot program that mandated the use of GIS by all districts statewide and supported state funding incentives that rewarded efficiency.

GIS afforded the Department of Public Instruction the means to present each school district's busing routes and related information in a clear and compelling way. From that information, the Department was able to analyze and create a management plan that saves the state (and taxpayers) both time and money.

Results

- 500 fewer buses needed statewide during the 1994-95 school year.
- 15,000,000 fewer miles driven than originally estimated.
- 2,000,000 gallons of fuel saved between 1990 and 1996.

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Planning for Tomorrow Based on an Accurate Picture of Today

New Jersey's Open Space

New Jersey wanted to accurately assess the changes in land use throughout the state over time and to develop and implement more effective growth management policies consistent with the Governor's open space preservation initiative.

New Jersey utilized GIS to quantify statewide land use changes from 1986 to 1996 and to prepare a comprehensive map of New Jersey's undeveloped land to help guide the Governor's one million acre preservation initiative.

Results

- Developed the ability to project build-out scenarios for each of NJ's 566 municipalities.
- Provided comprehensive local land use maps to all mayors.
- Quantified the acres of forests, farms and wetlands lost over 10 years.
- Accurately assessed the relationship of development to water quality in all 21 watersheds.



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Streamlining the Decision-Making Process

Utah Land Exchange Program

The state of Utah and the federal Bureau of Land Management (BLM) wanted to execute a mutually beneficial land exchange that would generate more revenue for the state treasury and allow the federal government to consolidate its holdings in reserved areas. An important component of this project was to provide a forum for public involvement and oversight.

Utilizing GIS, the project was able to evaluate resources on candidate land parcels quickly and effectively. GIS enabled officials to update information on the identity of the proposed tradeoffs and make it available to all interested parties. This not only provided a venue for more informed and open discussions, but also allowed officials to streamline the entire decision-making process.

Results

- Utah's Governor and the Secretary of the US Department of the Interior signed the largest land exchange in the history of the BLM involving 400,000 acres.
- \$200,000,000 in revenue was generated for the state (\$70,000,000 of which is already in the state treasury).
- The BLM was able to consolidate its holdings in reserved areas.

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Understanding, Integrating and Analyzing Complex Relationships

Methamphetamine Threat in Illinois

To counteract a growing methamphetamine threat in Illinois, the state needed to develop and institute an aggressive prevention and enforcement program.

State officials utilized GIS to track all methamphetamine encounters, lab seizures and locations of “starting material” sales. This information was integrated and assessed to perform county level cluster analyses. GIS also enabled the state to integrate demographic and geographic information to develop an accurate risk model.

Results

- Created a statewide risk-model pinpointing methamphetamine “hot spots.”
- Illinois hosted a Methamphetamine Summit in the fall of 2000.
- Positioned Illinois to receive federal funding for training, equipment and lab remediation.
- Facilitated the enactment of state methamphetamine enforcement legislation.

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Effectively Sharing Critical Information

Wildfires in Montana

For the fire season of 2000, Montana wanted to create a dynamic and effective wildfire management plan to provide a strategic overview of multiple incidents as well as improve protection for firefighters, property and citizens.

The state utilized GIS to integrate a variety of databases (base maps, satellite images, fire perimeters, power lines, communication sites, vegetation, terrain, population, potential fire paths) and create accurate situation maps that could be updated as needed.

Results

- Provided computer-generated maps to Incident Command Team members, fire information offices, line officers and the public.
- Time, lives and property were saved because of the up-to-the-minute visual analyses that GIS provided regarding the location of fire perimeters, fire intensity, areas of potential spread and communities at risk.
- During the 2000 wildfire season in Montana, more than 2,300 wildfires burned nearly a million acres, but only 86 primary residences were lost—out of the more than 8,000 threatened and no firefighter or civilian lives were lost.



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Building Geographic Data Through Partnerships

A foundation already exists for a national approach to develop, maintain and share geographic data. This foundation is the National Spatial Data Infrastructure or NSDI. It is anticipated that most of the NSDI's geographic data (spatial datasets) will come from inter-agency partnerships at the local level. However, all levels of government will contribute to the growth and success of the NSDI.

At the state level, services will be needed to coordinate and integrate spatial datasets. In fact, many states have already created Geographic Information Councils for this purpose. States will also be responsible for constructing their own datasets to “nest” within the NSDI.

The function at the federal level will be to provide leadership and to set standards so that all datasets can be integrated, making analysis possible on a statewide, regional or national basis. Federal agency coordination occurs through the Federal Geographic Data Committee (FGDC).

The strength of the NSDI lies in the partnerships formed to construct an ever-expanding suite of national geographic data resources. The NSDI should be viewed as a strategic national asset whose wealth of geographic information can be tapped into by federal, state and local agencies as well as citizens to advance the business of government.

How You Can Tap into the Power of GIS

- 1 Be a leader by championing your organization's contribution to the NSDI.
- 2 Foster collaborative efforts with other geographic data developers.
- 3 Make a commitment by dedicating resources to incorporate NSDI principles into your organization's daily business practices.
- 4 Stay on top of the evolution of geographic technology and become an active participant in GIS-affiliated organizations.



For more information, please contact the National States Geographic Information Council (NSGIC) at: 859-514-9208 or the Federal Geographic Data Committee (FGDC) at: 703-648-4150

reduce crime

enhance public safety

contain costs

map floodplains

Using Geography to Advance the Business of Government

chart demographics

encourage economic development

manage growth

improve accountability

protect the environment

