

**Statement of
Eugene Trobia, President
National States Geographic Information Council (NSGIC)**

**Before the
Subcommittee on Technology, Information Policy, Intergovernmental
Relations and the Census
House Government Reform Committee
June 10, 2003
Oversight Hearing on Geospatial Information: A Progress Report on
Improving Our Nation's Map-Related Data Infrastructure**

Thank you, Chairman Putnam, and members of the Subcommittee, for inviting the National States Geographic Information Council (NSGIC) to participate in this important hearing. We thank you for your leadership in promoting geospatial information technology as a tool to transform the way government provides services to its citizens.

The National States Geographic Information Council (NSGIC) is a non-profit organization that promotes effective government through the widespread adoption of geospatial information technologies (GIT). NSGIC provides a national forum for state GIT leaders to identify issues, debate policies, seek common solutions, and advocate for development of the National Spatial Data Infrastructure (NSDI). Members of NSGIC include state government executives, managers, coordinators from lead state GIT offices, and representatives of statewide policy boards involved in the daily coordination and application of geospatial technologies.

USES OF GEOSPATIAL DATA IN GOVERNMENT

Nearly all of the information managed by government agencies is location-based. Using location-based data with geographic information systems (GIS) allows government managers to better understand and clearly visualize the impacts of their decisions. GIS is a powerful information tool that has been available for desktop use since the mid 1980's and has been used by planning, transportation and natural resource agencies. The military and intelligence communities were also early adopters. Since the majority of the GIT costs are associated with data production, management and maintenance of the data, it is difficult to gain support for the major investment that would be required to map the nation. Many senior officials, decision makers and the general public are not familiar with the value of these technologies.

GIS applications are used to assist in a wide array of government functions such as:

- Emergency management/response
- Law Enforcement
- Economic Development
- Budget and Management
- Agriculture
- Health and Human Services
- Environmental Protection and Management
- Facilities Management
- Parcel Appraisal and Assessment
- Planning
- Education
- Transportation
- Natural Resource Management

KEY ISSUES

Our members see three issues as key to taking advantage of this important national asset.

- ***Effective statewide coordination and integration mechanisms are required between national and local efforts***
- ***Completion of the National Spatial Data Infrastructure (NSDI) will help support public safety applications***
- ***Geospatial data must remain a public resource***

Effective Statewide Coordination and Integration is Required -

Federal, state and local government efforts to coordinate the development of the National Spatial Data Infrastructure have been both a success and a failure. The successes include recognition that coordination will prevent wasteful duplication and the development of unnecessary products. The failures come from the lack of a single well-conceived national model that works for Federal, state and local agencies. Without coordination tools such as standards, funding and uniform data sharing policies, government agencies continue to develop their GIT initiatives as "stovepipes" for specific missions that will not integrate into a seamless national program. A cohesive national program can help end these wasteful practices.

NSGIC believes that effective statewide coordination bodies can foster greater collaboration between local government and the Federal government to foster completion of the NSDI. Coordination should be accomplished through the States, because they provide 50 points of contact for the Federal government instead of having to deal with the 3,141 county and 18,000+ municipal governments across the nation. Many states already have effective statewide coordination mechanisms in place, and good working relationships with local and municipal government. For the remaining states, NSGIC developed its "*Guidelines for Statewide Coordination of Geospatial Information Technologies*" (Attachment A).

The Federal government could support statewide coordination by establishing an official relationship with these state organizations. Federal agencies



should work through state coordinating bodies to avoid duplication of effort and to help ensure that local, state and Federal agencies maintain open communications and work on consensus solutions to our problems. States frequently see significant Federal grants being awarded for production of geospatial applications and data that do not fit the business needs of state and local government. We can also point to instances where two or more Federal grants have paid for the same, or substantially similar, work within individual states. States should be acting as area coordinators and working closely with local governments on plans to build the NSDI in ways that meet the unique requirements of each partner. Federal field office staff should participate in statewide coordination meetings to become involved in the local GIT "community" and improve communications. Also, Federal agencies should use the statewide coordination groups as a "clearinghouse" to review Federal grant programs that will be used to produce geospatial data or applications.

Completion of the NSDI - NSGIC advocates improved public and private decision-making through readily accessible information, maps, geospatial data and technologies. Well-documented, high quality geospatial data are critical assets that are required to assist decision-makers on strict timelines. To meet these information requirements, NSGIC supports the development of the NSDI that includes complementary technologies, policies, criteria, standards and the people needed to organize and promote data sharing.

A fully implemented and robust NSDI will empower public and private decision-makers, and benefit society as a whole. Elected officials, administrators, resource managers, scientists, entrepreneurs, land-owners, planners, business executives, teachers, and the public all reap tremendous benefit from improved access to geospatial data and GIT. The following sample applications rely on many of the same data to do entirely different jobs.

- Fire and police departments review the locations and frequencies of crimes to re-deploy their assets. This results in higher arrest rates, reduced crime, efficient use of resources, and safer communities.
- Emergency managers and transportation officials monitor the movement of their equipment and personnel during natural disasters such as wildfires to ensure efficient operations. The same systems can also be used during snowstorms to remotely monitor the flow of traffic and the environmental conditions of the roads to provide for automatic safety alerts.
- Health agencies can monitor environmental conditions to predict and prepare for outbreaks of naturally occurring hazards such as Lyme disease and West Nile virus.
- Transportation agencies can model the impacts of flooding in a watershed to properly design bridges and culverts that ensure the safety of our citizens.

- School systems improve route efficiencies to drastically reduce the miles driven and gallons of gasoline consumed. This retains needed dollars, cleans the environment and reduces risk to our children.
- Planning agencies can model the impacts of urban sprawl to gain support for appropriate controls on development. At the same time, they can account for the needs of people to provide more livable communities.
- Natural resource agencies plan land acquisitions that integrate the requirements for living resources and people to protect the environment and provide recreational opportunities.

Location is the single thread that is common to all data. The technology can enhance the usefulness of data and the return on investment in public information. NSGIC believes that the benefits of geospatial technologies and data that can only be realized through intergovernmental and private sector cooperation, coordination, collaboration and partnerships.

Geospatial Data Must Remain a Public Resource - The daily work of all agencies must be organized and made available in unprecedented ways to "feed" other agencies and emergency managers the information they need to do their jobs effectively. Open access to data is imperative to prevent waste and duplication of effort. Data and applications should be created once and then be able to be discovered and used by everyone.

There is a disturbing trend toward reducing the availability of geospatial data due to heightened concerns over terrorism. As increasing numbers of data sets are restricted from public access, we are reducing the ability of government agencies to conduct their routine business.

We urge Congress to ask the FGDC and the Department of Homeland Security to jointly develop a sound national policy for data access in consultation with state and local government, academia, and the private sector. This policy should provide for reasonable access by all entities for their business purposes. Restrictions on redistribution or disclosure of the data may be appropriate, but access must be provided to all but the most sensitive data.

WHAT THE FEDERAL GOVERNMENT CAN DO

The Federal Geographic Data Committee (FGDC), and the Geospatial One Stop and National Map Programs bode well for future collaborative efforts. They are among the first programs to view state and local government partners as equals. We acknowledge that Federal "stove-pipe" programs have their own needs, but state and local governments receive constant requests about their geospatial data assets and police for these single purpose initiatives. Many states have taken the initiative to conduct routine surveys and work with Federal agencies to prevent them from conducting multiple surveys. NSGIC will seek Federal assistance to implement a more

coordinated and sustained approach to provide access to data and applications. This approach would support the Geospatial One Stop portal and provide consistent goals and objectives, rather than reactions to individual agency initiatives. This system will build the geospatial data asset inventory in real-time and relate it to the existing Clearinghouse sites. States are ready and willing to assist in developing the NSDI, however, incentives and resources must be provided by the Federal government to enable their efforts.

In the event of manmade or natural catastrophes, local police, fire and emergency crews are the first responders. Therefore, it is important for local government to produce and maintain geospatial data that allow them to do their jobs well. Incentives for them to share their data are good for the nation because they reduce waste, eliminate redundant effort and keep our nation prepared to deal with threats to our security. NSGIC requests Congress to implement national policy, business plans and funding mechanisms that support coordinated implementation of a spatial data infrastructure for public safety agencies as requested in "Saving Lives and Saving Money An Urgent Call for a National Spatial Data Infrastructure for Public Safety - *A Declaration of Interdependence*" (Attachment B). To date, this document has been signed by the statewide GIS coordination councils of thirty-seven (37) states and several other national organizations including the National Association of State Chief Information Officers (NASCIO), the University Consortium for Geographic Information Science (UCGIS), and the Mid-America Geographic Information Council (MAGIC). The National Association of County Officials (NACo) has adopted a similar resolution.

Mr. Chairman, and members of the Subcommittee, I thank you for allowing me to testify on this very important issue to represent the views of state and local governments.



Attachment A

Guidelines for Coordination of Geographic Information Technologies

**National States Geographic Information Council
May 6, 2003**

ABOUT NSGIC

The National States Geographic Information Council (NSGIC) is an organization of States committed to efficient and effective government through the prudent adoption of geographic information technology (GIT). Members of NSGIC include delegations of state GIS coordinators and senior state GIS managers from across the United States. Other members include representatives from Federal agencies, local government, the private sector, academia and other professional organizations. A rich and diverse group, the NSGIC membership includes nationally and internationally recognized experts in GIS, geospatial data production and information technology policy.

GEOGRAPHIC INFORMATION TECHNOLOGIES

NSGIC is an advocate for the development of a National Spatial Data Infrastructure (NSDI), which includes the technology, policies, standards, human resources and related activities necessary to acquire, process, distribute, use, maintain and preserve geospatial data. Geospatial data is information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth. This information may be derived from, among other things, satellites, remote sensing, mapping, charting, GPS and surveying technologies. The level of overall capability and capacity enables all levels of government and the private sector to perform essential business functions. Today, there is an additional emphasis on the value of the NSDI for emergency preparedness functions including planning, mitigation, response and recovery activities to effectively minimize loss of life and property from natural and man-made disasters.

SUCCESS MEASURES and COORDINATION CRITERIA

The following are lists of critical factors for measuring performance objectives and the criteria needed for an effective statewide coordination program. Items featured in the lists are intended as guidelines to be considered in the development and administration of a GIT coordination program. The list will be evaluated on a continuing basis and modified as appropriate in the future.

SUCCESS MEASURES

- Geospatial data will be available in a form that is usable to the public, private sector and government.

- ❑ The business requirements of all participants are met through coordination activities.
- ❑ Efficiencies can be demonstrated from coordination activities.
- ❑ All levels of governments are engaged.
- ❑ The statewide coordinating authority is a first point of contact for Federal grants, programs and initiatives.
- ❑ There is good coordination and communication between neighboring states.
- ❑ Duplication of effort and waste are eliminated.

COORDINATION CRITERIA

- ❑ A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans.
- ❑ A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.
- ❑ The statewide coordination office has a formal relationship with the state's Chief Information Officer (or similar office).
- ❑ A champion (politician or executive decision-maker) is aware and involved in the process of coordination.
- ❑ Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse¹ are assigned.
- ❑ The ability exists to work and coordinate with local governments, academia, and the private sector.
- ❑ Sustainable funding sources exist to meet projected needs.
- ❑ Coordinators have the authority to enter into contracts and become capable of receiving and expending funds.
- ❑ The Federal government works through the statewide coordinating authority.

Attachment B

¹ The Clearinghouse is an electronic service providing access to documented spatial data and metadata from distributed data sources. These sources include a network of data producers, managers and users, linked through the Internet and other communications means, and accessible through a common interface. Metadata is information about data or geospatial services, such as content, source, vintage, spatial scale, accuracy, projection, responsible party, contact phone number, method of collection, and other descriptions. Metadata are critical to document, preserve and protect agencies' spatial data assets. Reliable metadata, structured in a standardized manner, are essential to ensure that geospatial data are used appropriately, and that any resulting analysis is credible. Metadata also can be used to facilitate the search and access of data sets or geospatial services within a Clearinghouse.

Saving Lives and Saving Money

An Urgent Call to Build the National Spatial Data Infrastructure in Support of Public Safety

A Declaration of Interdependence

On a daily basis **state and local governments** are engaged in activities that save lives, protect property and guarantee the safety of more than 284 million Americans. But they do so without the benefit of key data, tools and standards that can ensure improved safety for first responders and citizens alike. Spatial data (information linked to an electronic map) and associated technologies significantly increase emergency response effectiveness and efficiency. They also enhance hazard mitigation, and provide for non-emergency applications that will pay for themselves many times over. At all levels of government, for a multitude of reasons, this country must have a comprehensive National Spatial Data Infrastructure to support Public Safety and many other purposes.

National development of timely, accurate and consistent spatial data will significantly enhance government lifesaving operations and countless other government services. While a large number of local governments already use spatial technologies, many cannot reap the full benefits, because there are gaps and inconsistencies in available data, or they rely on partners that cannot afford the technology. Spatial data must be created through national initiatives to ensure that they are available to all who require their use for lifesaving and public safety applications.

Every day, police officers are dispatched countless times to stop crimes in progress and to assist citizens in need of help. Spatial data applications such as “Comstat” in New York City allow police managers to analyze crime patterns and the tactics of their departments. These tools are effective in reducing violent crime and have contributed to a 68% reduction in New York City’s annual murder rate from more than 2,000 ten years ago, to less than 650 today. Firefighters and Emergency Medical Service personnel work around the clock to put out fires and to respond to the health emergencies of individual citizens. State and local Departments of Health are engaged in daily operations to identify, track and mitigate life-threatening diseases. Departments of Transportation respond to accidents, keep roads safe, and analyze accident patterns to develop strategies that reduce injury and death.

All of these operations have two things in common. They are responsible for saving lives each and every day, and they rely upon information resources that have a spatial or geographic context that is critical to their success. The most critical National Spatial Data Infrastructure elements for Public Safety are:

- Digital orthoimagery (map-accurate aerial photography) at resolutions that are appropriate for every location to clearly show significant features.
- Accurate and consistent street and highway centerlines with street names and addresses affixed to them.
- Parcel boundaries, and for urban areas, building footprints with unique identifiers and basic characteristics.
- Significant natural features, including topography and vulnerable areas.
- Critical infrastructure elements such as aquifers, water distribution systems, wastewater treatment plants, bridges, tunnels, gas mains, power plants, geodetic control, telecommunication hubs, electric transmission lines, and places of public assembly.

- Locations of hazardous materials storage and other dangerous conditions or facilities.

When combined with such existing technologies as Geographic Information Systems, computer-aided dispatch systems, routing software, the Global Positioning System, Automated Vehicle Location, remote sensing and others, these data create the foundation for a modern public safety information infrastructure. During major emergencies such as terrorist attack, flood, fire, earthquake or hurricane, they can immediately be used to support the efforts of first responders. They also support hazard mitigation operations such as the tracking of potential terrorists and environmental monitoring to prevent emergencies from happening in the first place.

Lifesaving operations extend beyond the borders of local jurisdictions and also beyond state and regional boundaries. Therefore, it is essential that spatial data be built to comprehensive, consistent and nationally agreed upon standards. Because of the detailed and local nature of the data, and because they will be used every single day by local public safety personnel, they need to be built and maintained in cooperation with state and local jurisdictions.

Emergencies strike urban centers and remote locations alike, without regard for the local residents who are injured or killed, and suffer financial losses. The first responders in these communities put their lives on the line while serving others. By the time significant state and Federal relief arrives, most of the fatalities and serious injuries have already been sustained at the local level. It is therefore essential that local public safety personnel have routine access to these public safety data and be thoroughly familiar with their uses. National Homeland Security and emergency management operations must use these same data so that Federal support and response efforts can be quickly and easily integrated with efforts at local and State levels.

Creation and deployment of the Public Safety components of the National Spatial Data Infrastructure will have many additional benefits. Local and state governments can use the same data to provide a foundation for countless non-emergency operations and applications, including e-government initiatives, economic development, waste removal, street cleaning, code enforcement, environmental protection, growth planning, construction permitting, inspections, capital construction and human services. These applications of spatial data are known to increase workforce productivity, streamline business processes, save money and improve services delivered to the public. Nationally, the aggregations of standards-based spatial data can lead to the creation of a National Map that gives America's citizens vital information for their businesses and day-to-day lives. The investment criteria for spatial data are routinely satisfied for non-emergency applications. Given the more urgent need to be better prepared for protecting our citizens in the post 9/11 world, the benefit of investments in spatial data created for public safety will extend to non-emergency applications and will pay for themselves many times over.

To take advantage of this life-saving and money-saving technology, which is currently available and should already be in the hands of every government agency across the nation, we must complete the job of comprehensively building a public safety oriented and spatially enabled data network. The creation of the Public Safety components of the National Spatial Data Infrastructure is essential now, before it is required to respond to a catastrophe, and before someone asks why it wasn't available when it was truly needed.

For these reasons the following undersigned organizations ask the Congress of the United States to create and enact omnibus legislation that will direct a coordinated national effort to fund production, maintenance and appropriate access of these data at State and local levels.

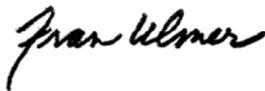


Alan Leidner, Director
New York City GIS Utility



Rick Miller, President
National States Geographic Information Council

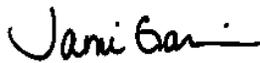
STATE GIS COUNCILS



Lieutenant Governor Fran Ulmer, Chair
Alaska Geographic Information Advisory Committee
Telecommunications Advisory Council

9/24/02

Date



Jami Garrison, President
Arizona Geographic Information Council

11/14/02

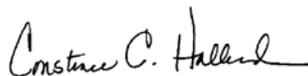
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Susan Cromwell, Chair
Arkansas State Land Information Board

9/17/02

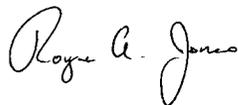
Date



Constance C. Holland, Chairperson
Delaware Spatial Data I-Team

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Date



Royce A. Jones, President
Hawaii Geographic Information Coordinating Council

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Date



Representative Tom Berns, Co-chair
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Indiana Geographic Information Council

3/31/03
Date



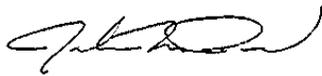
Kevin Kane, Chair
Iowa Geographic Information Council (IGIC)

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Clark Duffy, Chairperson
Kansas Geographic Information Systems Policy Board

11/22/02
Date



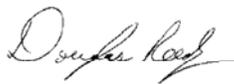
John Penfield, Chair
Kentucky Geographic Information Advisory Council

9/19/02
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Marty L. Beasley, LGISC Chair
Louisiana Geographic Information Systems Council

11/21/02
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Douglas Reedy, Chair
Maryland State Geographic Information Committee

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Larry Charboneau, Chair
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12/19/02

Anthony J. Herbert, Chair
Montana Geographic Information Council

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11/7/02

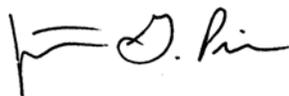
James L. Brown, State Surveyor and Chair
Nebraska GIS Steering Committee

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1/22/03

Jonathan G. Price, Chairman
Nevada State Mapping Advisory Committee

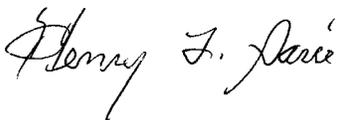
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3/19/03

Kenneth R. Gallager, Chair
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Date



11/8/02

Henry L. Garie, Director, New Jersey Office of GIS;
State Representative, New Jersey Geographic Information Council

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Bart Matthews, President
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Dempsey Benton, chair
North Carolina Geographic Information Coordinating Council

11/22/02
Date



Bob Nutsch, GIS Coordinator
North Dakota GIS Technical Committee

2/26/03
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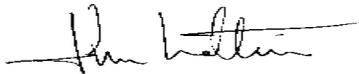
Stuart R. Davis, Chair
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Mike Sharp, Director Information Technology
Oklahoma Conservation Commission

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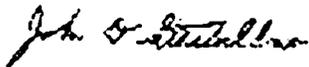
John Lattimer, CIO
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1/9/03

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10/17/02

Dennis Goreham
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George Spencer, Chair
Washington Geographic Information Council

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Craig A. Neidig, WV GIS Coordinator
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11/21/03

Ted W. Koch, Chair
Wisconsin Land Information Board

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Cheryl Corbin, Chairperson
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12/16/02
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OTHER INDIVIDUALS AND ORGANIZATIONS



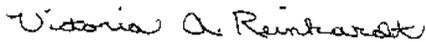
Steven Cunningham, Chair
Central Iowa Geographic Information Systems

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Timothy L. Haithcoat, Consortium Chair
MidAmerica Geographic Information Systems Consortium, Ltd.

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Victoria A. Reinhardt, Chair
Minnesota MetroGIS Policy Board Chair

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R. J. Zimmer, Chair
Montana Local Government GIS Coalition

12/19/02
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Gerry Wethington, President
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Carolyn J. Merry, President
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James Geringer, Governor
State of Wyoming

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Bill Campbell, Chief Information Officer
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12/24/02
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