

Foreword

NSGIC's Advocacy Agenda is developed each year by the organization's state representatives to identify the opportunities that they believe are of greatest importance in the coming year. The resources of NSGIC, and often the resources of its state and private members, will be applied to implement positive change in each opportunity area. The organization works to create a national focus on these opportunities and also outlines the steps that can be taken to improve government efficiency and effectiveness in each area.

NSGIC values its relationship with all other stakeholders in the geospatial community, especially the Federal agencies and the Federal Geographic Data Committee. However, NSGIC's members understand that "plain talk" and candid identification of issues are the first steps that must occur when trying to improve government. It is in this spirit that this document is produced each year.

This year's top opportunities are:

- *For the Nation* Data Initiatives
- Address Points from the U.S. Census Bureau
- Governance of the National Spatial Data Infrastructure
- Technology to Improve Government Effectiveness

The National States Geographic Information Council (NSGIC) is a nonpartisan 501 (c) 6 organization committed to efficient and effective government through the prudent adoption of geospatial technologies. Established in 1991, NSGIC voting members include senior state geographic information officers, coordinators, managers, and Councils.

NSGIC's mission is to promote statewide geospatial coordination activities in all states and be an effective advocate for states in national geospatial policy initiatives, thereby enabling the National Spatial Data Infrastructure (NSDI). Coordinating our geospatial resources will improve the performance of all levels of government, the innovation and profitability of private businesses, and the quality of life for American citizens.

NSGIC supports and will promote policy actions by Congress, Governors, State Legislatures, Chief Information Officers, and other actions by decision-makers that lead to effective and prudent uses of statewide geospatial technology and infrastructure. This Advocacy Agenda addresses several key opportunities for 2009-2010 that were identified by our State membership at the Annual Conference in October 2009.



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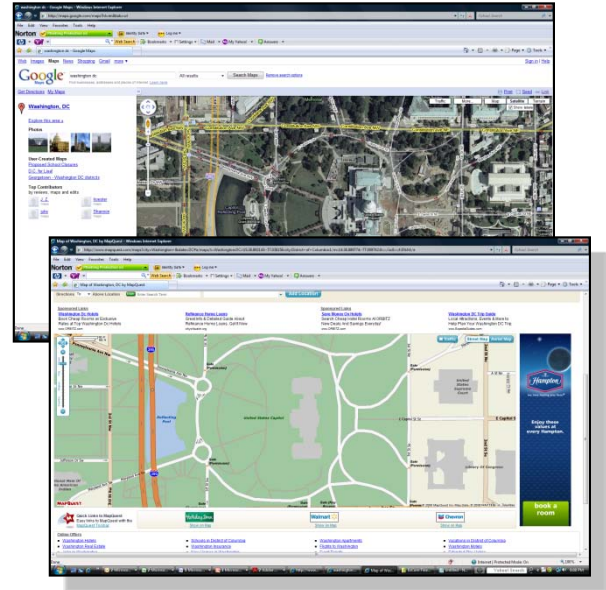
Web Page: <http://www.nsgic.org>

Publication Date: November 17, 2009



Stimulating Technologies

Americans rely on a wide range of location-based technologies that make our lives easier and keep the world in a context that can be better understood by everyone. We are able to do this because of the nation's geospatial technology industry, which is a major IT growth sector. According to the Department of Labor, geospatial is one of the three technology areas that will create the most jobs in the coming decade. Companies like MapQuest™ and Google™ (products shown at right) are almost universally known. What is less well known is that this thriving industry owes its very existence to enlightened policy decisions by government over the past 30 years.



Street Map Data Evolution

- U.S. Census Bureau developed the Geographic Base File using Dual Independent Map Encoding (DIME) in 1967 in preparation for the 1970 Census. For the 1990 Census, DIME was supplanted by a more comprehensive digital map product known as TIGER developed in cooperation with the United States Geological Survey. In addition to developing the first nationwide digital street maps, **Census had the foresight to put both DIME and TIGER in the public domain.** Today, multi-billion dollar companies are built in-part on these data.
- Geographic Data Technology, Inc. was founded in 1980 by a Census Bureau cartographer who helped create the DIME files. The company was acquired by TeleAtlas™, a Dutch mapping company, in 2005. In 2008, TeleAtlas™ became a wholly-owned subsidiary of TomTom™, a manufacturer of automotive navigation systems, through a €2.9 billion acquisition (>\$4 billion US dollars).
- Navteq™ was launched in 1985. The company improved TIGER, optimizing the data for navigation. NavTeq was sold in 2007 to Nokia for \$8.1 billion, providing a clear signal that mapping would be an integral part of mobile applications.

Geographic Information System (GIS) Software Evolution

- In addition to launching the GIS data industry, the DIME and TIGER products also gave a significant boost to GIS software firms in the 1980s and '90s. If GIS software were a car, mapping data would be gasoline. One is useless without the other. The United States has data and not coincidentally becomes the world leader in mapping software with companies including ESRI™ and Bentley™.
- After starting life in a Central Intelligence Agency incubator, Google Earth™ was launched in 2005 and immediately began to reshape public thinking about location-based services due to its ease of use and features.

Global Positioning Systems (GPS) Evolution

- The U.S. Air Force launched the 24th Navstar satellite into orbit, completing the Global Positioning System (GPS) in 1993.
- President Clinton announced in 1996 that a higher level of GPS accuracy would be publicly available and that the practice of degrading the public signal would be phased out within a decade.
- Today, GPS is a multi-billion dollar industry with devices on the dashboard of cars, in cell phones, and even on dog collars. GPS is an application that uses the street maps, routing and addressing information created with GIS technologies.

Current Opportunities

America's ability to confront major issues like global warming, crumbling infrastructure, affordable healthcare, homeland security, global pandemics, foreign oil dependence, and the mortgage crisis depend in part on our ability to map, understand and act on information using geospatial techniques. Government-produced geospatial data are critical for solving these problems and the return on investment (ROI) will result in significant long-term savings. Opportunities that can provide almost immediate assistance are identified on the following pages as part of NSGIC's Advocacy Agenda.



Opportunity

Our Nation doesn't have comprehensive programs to coordinate the acquisition of accurate geospatial data to meet the business needs of government (all levels). Instituting such programs will increase the availability of products to underserved areas, reduce duplication of effort, result in cost avoidance, and take advantage of large area contracting mechanisms that significantly reduce the costs for everyone. The resulting data will be of great benefit to the private sector and the general public who should be allowed open access to these data products.

A national geospatial data program would serve as the base map component of all GIS systems. This base map could be collected and maintained on a routine cycle to support all government operations.

Analysis

- Framework geospatial data (Imagery, Transportation, Elevation/Bathymetry, Political Boundaries, Geodetic Control, Parcels, Hydrography, Land Use/Cover, Demographics and Critical Infrastructure) are fundamental pieces of the GIS technologies that are essential for planning infrastructure improvements, such as highways, railways, and pipelines that will compose a major portion of the Stimulus package. In the absence of readily-available data, project planners will need to create it from “scratch.”
- A systematic process for obtaining high quality geospatial data for the nation has been identified in NSGIC's data lifecycle proposal. Three data layers (Imagery, Transportation and Parcels) have received significant attention over past years with visible progress when measured against the lifecycle proposal.
- Once in place, these nationwide publicly-accessible geospatial data serve as a public resource, enable efficient and effective government, and spur development of private applications for the data that will fuel the economy. They will provide a unified digital map of America that is available to and maintained by future generations.
- There are no technical issues to delay this initiative, nor are there any issues with the capacity of the industry to create the required products. We simply need to deal with the “will” of governmental agencies to work on coordinated mapping programs and provide adequate funding.

Solution/Steps to be Taken

1. **Stable** revenue streams are critical and must be generated for all national Framework Data efforts.
2. FGDC, OMB and Congress should first fund Imagery for the Nation through the *President's Budget* at the full amount needed for national coverage. “Line items” are required in the USDA/FSA and DOI/USGS budgets and statutory language is required to protect funds from being diverted to short-term agency needs, unwarranted management fees or new priorities. An annual total appropriation of \$105 million is required, but current expenditures are approximately \$30 million per year. This program will serve as the “proof of concept” to demonstrate the efficacy of the “For the Nation” concepts.
3. Congress should direct Federal agencies that are data stewards under OMB Circular A-16 to implement “For the Nation” lifecycle planning processes and ensure that the business requirements of all levels of government can be met through buy-up options that allow government agencies to procure what they need (e.g. higher resolutions or increased accuracies).
4. FGDC should be empowered to help federal agencies deliver on their data assignments, to work together, and to consider the data needs and resources of state and local government. Achieving this may require restructuring and new powers as described later in Opportunity #3 - Governance of the National Spatial Data Infrastructure.



Opportunity

In the first half of 2009, the United States government developed a highly accurate database of addresses. These data (x & y coordinate locations and addresses) contain no personally identifiable information. Unlike the decision to release DIME and TIGER data, a broad interpretation of Title 13 (U.S. Code) is preventing the government from sharing this national treasure with the public. If released, an accurate national map of addresses would immediately enhance a variety of government services as well as be put to use by creative businesses and individuals.

Supporting production and maintenance of a shareable national address database will allow the U.S. to take another giant step in the evolution of geospatial technologies that will be comparable to the release of the DIME and TIGER street centerline files. This will also dramatically improve data in rural areas to significantly improve delivery of government and private services (e.g. mapping broadband Internet access, emergency response and disaster recovery).

Analysis



- Currently, most internet location based systems use address ranges that are associated with a road segment such as a one block segment of a road in an urban area (see graphic on left). This allows a person to find the general area of the address they are seeking. While this approach works reasonably well, tremendous improvements in the technology can be realized through use of address points.
- Government agencies must maintain precise locations for addresses to ensure timely delivery of emergency services and for a host of other applications such as taxation. Precise address points look more like the graphic on the right where the red “+” symbols represent the actual location of individual structures along the street that are highlighted in the red oval at left.
- The following are examples of industries that are developing independent addressing information: 911 dispatch, utilities, real estate, emergency management (fire, police and EMS), telecommunications, healthcare, insurance, local delivery, service providers, and marketing.
- The U.S. Census Bureau has created an accurate master file of addresses for structures in the nation to support the 2010 census. It cannot share the map coordinates and simple address data with other government agencies or the public due to the broad interpretation of Title 13 privacy restrictions.
- Because street addresses have evolved over many decades, under the control of thousands of local jurisdictions, in different record and database formats to serve many purposes, different address formats pose a number of complex geo-processing and modeling issues. As a consequence, government agencies struggle with these issues as they seek to integrate large, mission-critical files into master address repositories.

Solution/Steps to be taken

1. Congress should remove addresses and address point locations from Title 13 restrictions and instruct the U.S. Census Bureau and other federal agencies (e.g. Post Office) to work together to develop a common file and to make them publicly available.
2. Give the U.S. Census Bureau funds and granting authority to work with state and local governments to create and maintain a national address file using the “For the Nation” lifecycle process.
3. Address/coordinate data should be updated by local address authorities as soon as a building permit is issued, thereby including construction sites. Data should be developed locally, with local and state custodians acting as integrators.



Opportunity

Production of geospatial data and technologies is shifting from the federal government to the private sector and to state and local government. However, the United States is still using a federal centric governance model for the National Spatial Data Infrastructure (NSDI). The NSDI cannot be built without eliminating the “silos” and duplication of effort in the Federal government, and implementing an inclusive governance model. This requires strong leadership that is independent of the agencies and has the authority to regulate agency budgets. It’s time to form an inclusive partnership in which all participants are empowered to define the NSDI, and to determine the best methods for building it and measuring its success.

Analysis

- The Federal Geographic Data Committee (FGDC) and its participating agencies understand the role of state and local governments and the private sector in building the NSDI. However, since there is no clear definition of the NSDI (finite & measurable), or an effective business plan to build it, the Federal agencies focus on Federal business needs instead of identifying national objectives.
- In large part, this is because only those agencies with missions clearly tied to geospatial data are effective in getting budget appropriations and they are very protective of their own efforts. The FGDC has no authority or power to interfere with the budget process in these agencies.
- The NSDI is very complex and efforts to effectively describe it or its significance to decision makers often fail. It also requires full integration of local government data (i.e. parcel maps at local scales) which takes a commitment and common vision by decision makers at all levels.
- The National Geospatial Advisory Committee (NGAC) is a first effort to allow the private sector, academia, and state and local governments to have an effective role in advising the Federal government on NSDI issues. However, as an advisory committee, neither the FGDC nor its member agencies are obligated to act on the recommendations of NGAC. This is contrary to the vision of a more open and transparent government that should include a more prominent role for these groups.
- No one is willing to acknowledge the true cost of building an effective NSDI and its value is unknown. NSGIC believes that the price tag is nearly \$9 billion with an annualized cost of approximately \$2.5 billion. A large part of this expense is already being funded by state and local governments and there are no effective incentives from the Federal government to cause them to conform to national standards or spend additional money to share their data.
- No Congressional committee has oversight for Federal/National geospatial activities or the NSDI.

Solution/Steps to be taken

1. OMB or Congress should immediately create a Federal Geographic Information Officer (GIO) position in OMB with funding and the staff required to investigate and understand Federal agency expenditures, and the authority to require that agencies work together to define and develop an effective NSDI.
2. Congress should fund and task the GIO to develop a credible research report within 18 months that details the value of geospatial technologies and a shared NSDI to the nation, including all levels of government, the private sector and the public.
3. Congress should establish an oversight committee that deals with geospatial activities. This would ensure a point of contact in Congress with a clear understanding of the issues that can take appropriate action. Empowering the agencies to implement E.O. 12906 and OMB Circular A-16 would be a good start.
4. Congress should provide a governance structure for the NSDI that includes equal representation by the private sector (service providers and consumers); Federal, tribal, state and local government; academia; utilities; and the general public. The FGDC should focus on Federal agency coordination working with the GIO.
5. NSGIC will encourage all states to authorize coordination councils representing all sectors through continued emphasis on the Fifty States Initiative for governance at the statewide level.



Opportunity

There are many technology related initiatives that are vital to the geospatial community and the Nation. For 2009 – 2010, NSGIC has identified the following three technology programs it believes are critical. All technology related initiatives should be specifically evaluated for their impact to the geospatial community and their benefit to the public. Location is a critical component of new web-based services that are offered by the public and private sectors, and access is essential for ensuring government to citizen, government to government, and government to business services. The following efforts will be supported by NSGIC.

Analysis

- **BROADBAND INTERNET** - The American Recovery and Reinvestment Act opened new opportunities for the states in 2009 to map and improve access to broadband Internet. At the Federal level, the FCC is required by the Telecommunications Act of 1996 to “determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” Mapping the levels of service is essential for understanding the problem, setting priorities and designing solutions. Every state has applied for grants through the National Telecommunications Information Administration (NTIA) to implement a statewide broadband mapping program.
- **SOCIAL NETWORKING TOOLS** – A key component of coordination is communication. The nearly ubiquitous adoption of social networking tools presents an unprecedented opportunity to improve and accelerate coordination. The use of these tools provides an opportunity to create and verify geospatial data. With all of the positive potential of these technologies, this “volunteered geographic information” raises questions about the traditional approaches to managing geographic information, particularly the definition and role of “authoritative data.” It is critical for the geospatial community to adopt and use these tools and to develop an understanding of their implications on geospatial technologies to ensure that its voice is heard in national issues.
- **NEW AND INNOVATIVE TECHNOLOGIES** - Successful efforts to build national systems include all stakeholders on the front-end of the process. Technology is rapidly changing and as transparency requirements, data sharing opportunities and partnerships grow, a supporting architecture is imperative to success. A number of efforts have proven successful in implementing architectures that support all stakeholders, including the NOAA Digital Coast and Web 2.0 implementation.

Solution/Steps to be taken

1. NSGIC will work closely with its State members to ensure that they are informed about policy or programmatic changes within the Federal agencies responsible for broadband Internet deployment. Additionally, NSGIC will continue to provide a voice for state geospatial communities as these programs move forward.
2. Working as part of the Digital Coast Partnership, NSGIC will encourage and support the further development of the Digital Coast Portal, including its highest priority requirement for production of topographic and bathymetric data.
3. NSGIC will help its membership better understand the appropriate application of social networking tools to improve coordination efforts and to advise them of opportunities to impact national policy discussions.
4. OMB should provide leadership in these areas to ensure that Federal agencies are able to utilize these tools (i.e. social networks) and techniques (i.e. Digital Coast) to effectively coordinate with their state and local partners.