

Geospatial Data Sharing

Guidelines for Best Practices

Geospatial data

identify and relate the geographic location of features and boundaries. They are stored in databases that include descriptive attribute information about locations, allowing the information to be mapped. Geospatial data enable government, consumer and business applications. These data are accessed, manipulated or analyzed through Geographic Information Systems (GIS).

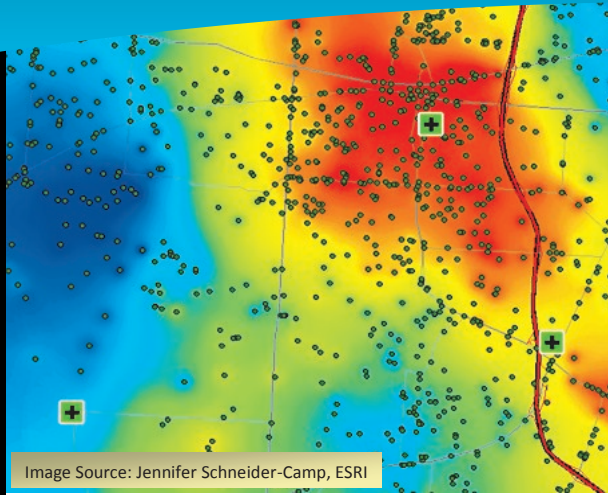


Image Source: Jennifer Schneider-Camp, ESRI



 **NSGIC**

Introduction

The National States Geographic Information Council (NSGIC) strongly believes that open sharing of geospatial data is in the best interest of our communities, states and nation. One of our goals is to make all non-sensitive geospatial data, produced or maintained using taxpayer funds, a part of the public record.

To realize this goal, NSGIC recommends that spatial data providers work to change any existing policies that inhibit geospatial data sharing. All states have [public records laws](#) that govern how data can be used. These laws require public access to government data and apply to local as well as state governments. NSGIC encourages data custodians to become acquainted with their state's public records law and to work toward its broad, open interpretation.

Savvy organizations creating geospatial data recognize the value of these data to the decision-making process. They also appreciate the need for current and accurate geospatial data in decisions affecting economic development, social services, public safety, emergency management, human or environmental health, agriculture, natural resources, planning and transportation.

Now is the time to change existing policies which might be outdated or based on incorrect assumptions. Organizations can accrue tremendous value through the open sharing of geospatial data.

Government administrators, geospatial professionals and concerned citizens will continue advancing the use of public geospatial data assets in new areas. This effectively increases their agency's return on investment.

NSGIC will work to remove the obstacles that prevent open access to geospatial data, and help to develop data and technology standards and partnerships that support and enable a sustainable data sharing model.

The Value of Accessible Geospatial Data

Access to public records is an essential component of our democracy that keeps citizens informed and our government accountable. These records include geospatial data produced or maintained using taxpayer resources. For this reason alone, and with certain narrow exceptions, geospatial data should be made available to the general public in the format that government analysts use, including computer readable and GIS-compatible formats.

Easy public access to the most current and relevant geospatial data provides a number of other societal benefits as well. One such benefit is economic, because reference to the information contained in geospatial data greatly facilitates economic improvements. For example, geospatial data enables online mapping services, navigation systems, planning, building and managing physical infrastructure, preserving the environ-

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Myth Number One

“Organizations can pay for GIS operations through geospatial data charges.”

Reality:

Overhead costs associated with receiving and managing payments; bundling and delivering data; and follow-up support to consumers can be significant. Even if adequately monetized and factored into the charge, these costs represent staff hours that could and should be utilized more efficiently to conduct core agency business.

Perhaps more significant is the loss of the following data sharing benefits:

- Improved data quality as it is vetted, corrected and improved by the community
- Greater opportunities to leverage resources by partnering or building upon related data
- Reduced duplication of effort and competition for scarce funds
- Increased numbers of complementary data resources that may support your mission
- Respect for your organization as a valued data producer
- Helping prevent the creation of duplicative data sets

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ment and securing land ownership. Public safety and economic development efforts are better served when these data are utilized with programs that generate more accurate information for communities and their developers, lenders, insurers, and emergency planners. Additional examples of societal benefits that result from access to geospatial data are enumerated throughout this paper.

The government agencies and communities that produce geospatial data also realize direct benefits from easy public access to these data. Most obviously, by openly sharing geospatial data, government agencies and communities eliminate the need to pay staff and attorneys to develop or defend data sharing agreements. Savings can be realized by reducing the staff time consumed by geospatial data sales. Data sharing also saves time and eliminates cost for data acquisition. In addition, data quality increases as use of the data increases. This is being seen everywhere open data are used and customer feedback is welcomed. In fact, both public and private sector users of openly shared data benefit from these improvements in data quality. Those obtaining the data are confident that they are getting the 'best' version of the information available.

In short, by lifting restrictive geospatial data sharing policies we realize numerous benefits.

Our Data Policy Vision

Nearly all public agencies derive benefits from the analysis, reference and display of geospatial data. These benefits may be categorized as cost savings (from more efficient operations); revenue enhancement (from more thorough taxation or regulatory enforcement); and better, faster, and more intelligent delivery of services to the public. The value of services that use geospatial data is appreciated by their recipients, but the credit for creating and maintaining geospatial data and technologies rarely accrues to the responsible entities. How can governmental GIS departments be assisted in meeting the fiscal challenges posed by the cost of producing and maintaining high quality data?

One suggested approach is to calculate the amount of money saved for an organization through geospatial analysis, any additional revenue collected, or the improved delivery of services resulting from geospatial technologies, and to then allocate a portion of those fiscal benefits to the organization's geospatial operating budget.

Studies indicate that counties with open data policies increase the value of their land more rapidly than counties that do not have open data policies. While it is acknowledged that the increase in property value does not come from government action, private investments in property development and renovation are better facilitated by easy access to geospatial land records. These economic development activities are based on investors' analyses of the economic opportunities in the local geography. The increase in land values results in increased revenues to a county government from property taxes (this is NOT an increase in tax rate). A portion of this increased revenue should be allocated to maintain the geospatial data and geoprocessing capabilities from which the investment analysis was derived. Similarly, increases in economic activity stimulated by the ease of access to a government's geospatial data, provides increased revenues from business tax, income tax, sales tax, permit fees and the like.

In order to implement a policy of supporting government geospatial departments with a portion of the savings and revenues accrued from using geospatial data, several mechanisms should be developed or improved, including:

- Calculating the cost savings of geospatial data use, by both government agencies and by the general public
- Calculating the revenue changes in taxes and fees attributable to increased economic development and property valuation
- Tracking cost savings and increased revenues as standard budgetary and accounting procedures of government agencies across the enterprise
- Policy agreements to use a portion of documented savings and revenues to fund the ongoing operation of geospatial departments that create and maintain an organization's geospatial data

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Both funding and organizational structure of geospatial operations remain serious problems for data sharing and enterprise management. NSGIC will, over time, offer guidance on mitigating these problems. Because funding for geospatial operations has not been widely institutionalized, agencies sometimes look to data sales as an option for increasing revenues. Myth Number One points out the fallacy of the notion that data sales will support a geospatial operation.

An institutionalized service is something that an organization cannot do without. For example, when all departments are tied into a central payroll office, there will never be a time when the organization decides to eliminate this office, because the organization could not exist without it.

Geospatial data operations are similar in that they often tie together many departments. However, for many reasons, these operations

aren't generally viewed as being critical to their entire organizations, so they are not yet institutionalized.

Another serious issue facing geospatial operations is organizational structure. Many organizations have allowed geospatial activities to emerge in a variety of departments without any central oversight. As a result, overall expenses can be far greater than needed and the integration of data is less than optimal. Since one single entity seldom manages all geospatial data, meaningful spatial analyses require coordination with multiple sources.

NSGIC encourages governments at all levels to integrate and share geospatial data between and within organizations, both horizontally and vertically. Enterprise data sharing requires standardization, stewardship and process governance to ensure that data are created once, maintained regularly, and used many times by all who need it. In that way, the funding issues related to data creation and maintenance can be reduced and managed.

Sample Uses of Geospatial Data



Economic Development – demographics, land ownership, proximity to schools, hospitals, shopping, services, transportation, logistics, tax information, and many more.

Public Safety and Emergency Management – road closures, detours, elevation, building layout and structure, emergency facilities, parcel information, crime statistics, and many more.



Health and Welfare – public or animal health statistics, medical facilities, routing, employment statistics; demographic information, and many more.

Environment and Conservation – water features, land features, wildlife, vegetation, energy sources, resource utilization, population growth, migrations, weather, and many more.



Myth Number Two

"Data cannot be shared in the interest of homeland security and personal privacy."

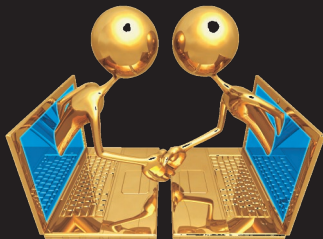
Reality

Critical infrastructure, though important to protect, is generally visible and easily identified and located. Imagery can't be put 'back in the can' after being publicly available for years. Personal information maintained by the government about individual health, economics, education, etc. are required to be generalized and grouped so that information about specific individuals cannot be derived. In most cases, the public is not protected by limiting access to information that is visible, previously available, or significantly generalized.

If data are deemed too sensitive for public access, agencies can still produce and publish information about the data (i.e. metadata). Metadata describes the data without revealing sensitive information. If the metadata is published, scientists, doctors and other appropriate users of the data can discover its existence and follow the procedures designated in the metadata to request access to and use of the data.

To aid agencies in assessing data sharing risks, The Federal Geographic Data Committee (FGDC) Homeland Security Working Group developed a decision-tree that can be used to balance security risks with the benefits of data sharing. The FGDC Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns explains the importance of maintaining a free flow of government information and provides a detailed method for applying the risk assessment decision-tree. The document is available at:

<http://www.fgdc.gov/policyandplanning/Access%20Guidelines.pdf>



The National States Geographic Information Council (NSGIC) is an organization committed to efficient and effective government through the prudent adoption of geospatial information. Members of NSGIC include senior state geographic information system (GIS) managers and coordinators. Other members include representatives from federal agencies, local government, the private sector, academia and professional organizations.

Summary

The National States Geographic Information Council encourages all spatial data providers to reexamine their policies with regard to geospatial data sharing. NSGIC believes it is in the best interests of business, the public and government agencies to ensure open access to all non-sensitive geospatial data.

Geospatial data is vital to the operations of government and, wherever possible, should be a part of the public record. Our democratic principles require a free flow of information between the public and the government. When that flow is interrupted, there is damage to both the public's right to participate in decision-making and the private sector's ability to help "fuel" the economy by using government information.

We encourage organizations creating geospatial data to recognize the value of these data to the decision-making process and to appreciate the need for current and accurate geospatial data for important decisions.

Now is the time to change existing policies that are outdated or based on incorrect assumptions. Tremendous value can be realized by all organizations through the open sharing of geospatial data.

NSGIC calls on government administrators, geospatial professionals and concerned citizens to further advance the use of important geospatial data assets and to ensure that they remain freely accessible.



2105 Laurel Bush Road
Bel Air, Maryland 21015
443.640.1075
<http://www.nsgic.org>

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Myth Number Three

"If we share our data, others may misuse it or blame us for mistakes."

Reality

Since public data are created to support public business endeavors, data sharing is an exercise in accountability, not a liability concern. Governments are protected from liability for reasonable data errors. The value of data sharing to both the provider and the consumer far outweighs any risk.

Good data documentation and well drafted disclaimers and agreements will minimize data misuse and abuse. When data consumers are provided with metadata that fully describes the data's intended purpose, completeness, accuracy, resolution, currency and use limitations, the opportunity for misapplication is minimized and the burden of appropriate use is shifted to the consumer. If geospatial staff work with their legal advisors to develop effective documentation, their geospatial product deliveries can clearly articulate responsibilities and liabilities for both the data provider and the consumer from the start. Such documentation need not be lengthy, complex or overly legalistic.

Data consumers can be required to assent to a warranty waiver before being granted access to the data. Assent may be as simple as checking an acceptance box on a web site. In other cases, a data provider may wish to consider the use of a more detailed agreement that clearly articulates the intended purpose and limitations of the data and the data consumer's waiver of all warranties in connection therewith. Such agreements can be used to limit liability, thereby increasing an agency's willingness to make the data more easily available.

Appropriate metadata, disclaimers and agreements used as data management best practices will inform the consumer of any data limitations.