

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

Introduction

Geography enables the integration of governmental programs. It provides the foundation for enhanced services and products resulting in quicker, more reliable decision-making – in essence better government.

All levels of government agencies develop and deploy programs that describe the same geography from dissimilar perspectives. Geography is the common link between these government agencies. It creates enormous opportunities to work together in partnership to eliminate redundant activities, and to leverage our shared efforts to reduce the costs of data creation and maintenance. Through increased communication, coordination, cooperation and collaboration, these opportunities can be realized.

The National States Geographic Information Council (NSGIC) encourages effective and efficient government through the coordinated development of geographic information and technologies and strives to ensure that information may be appropriately integrated at all levels of government. State GIS Coordinators, who form the core membership of NSGIC, understand the significant cost savings that can be realized through coordination efforts and by actively employing NSGIC's endorsed concept to "*collect data once and use it many times.*" Individually and regionally state geographic information management organizations practice this concept daily with positive and tangible results. The concept of leveraging these efforts is woven into the fabric of the National Spatial Data Infrastructure (NSDI).

The simple representation of political boundaries belies the complex relationships and functions of government agencies. If distinct levels of government work independent of the others, or with limited collaboration, then there can be no assurances that the needs of all stakeholders will be met. Significant collaborative efforts may be misdirected or inefficiently used, and opportunities will continue to be lost. A fully integrated NSDI can only be created through coordinated partnerships with federal, state and local partners. **Communication** and **Coordination** are the keys to accomplishing the NSDI.

Background

In May of 2004, NSGIC developed a list of critical success factors and criteria needed for effective statewide geographic information technology (GIT) coordination programs. That effort was very successful in providing a benchmark against which the individual states can measure the effectiveness of their GIT coordination efforts. During the development of the Fifty States Initiative, that list was expanded to include the characteristics of effective Statewide Coordination Councils and measurements of success.

State Coordinators invest significant effort to minimize costs, reduce negative impacts on existing efforts and ensure that collaboration and cooperation opportunities are leveraged to the benefit of all government levels. Deliberately defining these activities as expectations has been very beneficial to the State GIS Coordinators and has improved their successful interactions with governmental and non-governmental partners.

Purpose for a State Model for Federal Coordination

This document identifies those requirements that promote effective partnerships and solid working relationships between state and federal government agencies concerning the development and deployment of the National Spatial Data Infrastructure (NSDI). Based upon our previous success with the State Coordination Model, NSGIC has created a similar process to encourage more effective and satisfying interactions and coordination between state and federal government agencies.

To this end, NSGIC has identified fundamental characteristics and success factors for partnering with federal agencies that have been beneficial in several states. This led to: a listing of critical factors for measuring performance objectives, and the criteria needed for effective statewide coordination with federal agencies and programs.

These two parts, which we are calling critical success factors, can serve as a check list to assist states in evaluating current practices, setting expectations and providing guidance on their partnership building processes with federal agencies. They can also serve as guidance to federal agencies concerning states' cooperation process requirements and our expectations as we design, develop and deploy Statewide Spatial Data Infrastructures (SSDIs) that are supportive of the NSDI.

It is NSGIC's hope that these ***Criteria for Federal Coordination of Geographic Information Technology*** will guide states and federal agencies through their partnership building processes. These seven fundamental characteristics and success factors are below:

1. Clear, Defined Lines of Communications

All partnerships begin with an appropriate point of contact and effective communications. It is often difficult for states to determine if they need to deal with personnel at the federal agency headquarters, regional offices, or more locally to develop a partnership agreement. Opening an effective line of communication between partnering agencies is the first step in building the NSDI. Maintaining up-to-date, web-accessible lists that include appropriate points of contact for each federal program would assist the states and improve coordination.

Each identified federal agency Point of Contact (POC) must be empowered by and authorized to speak for their agency. At the very least, all federal agencies with a presence in any given state must identify a POC that will serve as the facilitation point between that State's GIS Coordinator and the federal agency to assist with specific geospatial programs and initiatives.

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

Identified success factors for this criterion are below:

| 1. Clear, Defined Lines of Communications | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| • A clear, defined line of communication and Point of Contact has been identified, and this POC has the authority to speak on behalf of the federal Agency | Yes | No |
| • Federal Agency is actively involved with State Coordination Councils, annual state conferences, or other geospatial community activities | Yes | No |
| • Federal Agency has an in-State presence with a defined POC to facilitate communication between state coordinator and specific federal program leads | Yes | No |
| • Federal agency maintains Web accessible lists of appropriate POCs and all associated contact information for each geospatial program area | Yes | No |
| • Effective communication has been established between State GIS Coordinators and federal agency POC | Yes | No |
| • Federal agency actively encourages state and local government agencies to be proactively engaged in the geospatial activities of the federal agency | Yes | No |
| • Federal agency provides information on geospatial activities and grants appropriate access to geospatial data in an effective and timely manner | Yes | No |

2. Commitment to Coordination with other Federal and National Organizations

Federal programs and initiatives must work in concert with each other and should not compete for resources or funds. Coordination and cooperation among federal agencies will be increasingly required as agency budgets are constrained. This competition for resources and funds is not limited to federal agencies. State and local governments wrestle with similar issues, forcing them to set priorities and manage their impacts.

All federal, state and local agencies must first meet their own business needs. However, it is possible to meet individual programmatic needs within the context of a larger, collaborative program if the needs and requirements of others are known and taken into consideration. Coordinated programs with effective partnerships, that leverage numerous assets across differing levels of government, are more cost efficient and are instrumental in building the components of the NSDI.

National organizations provide an effective means of communicating and coordinating with large populations of traditional geospatial users (e.g. NSGIC, the Urban and Regional Information Systems Association (URISA), the National Association of

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

Counties (NACo)), and non-traditional geospatial users and producers such as the International Association of Fire Chiefs (IAFC). This commitment to coordination benefits every level of government, business and the public.

Identified success factors for this criterion are below:

| 2. Coordination with other Federal and National Organizations | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| <ul style="list-style-type: none"> Federal agency has defined responsibility for a component of the NSDI that commits and requires them to coordinate with other federal agencies and non-federal national organizations in NSDI development efforts, (e.g. National Hydro Database (NHD) and Imagery For The Nation (IFTN)). | Yes | No |
| <ul style="list-style-type: none"> Federal agency is engaged in coordination activities with other federal agencies (e.g. USGS/BTS/Census on roads data development and maintenance) that explicitly encourages the inclusion and participation of state and local partners | Yes | No |
| <ul style="list-style-type: none"> Federal agency coordinates component activities (data development, standards implementation, data access, etc.) with potential federal and state partners – by data theme, application, and/or through FGDC participation | Yes | No |
| <ul style="list-style-type: none"> Federal agency has assigned an executive level representative to the FGDC per OMB's Geospatial Line of Business requirement | Yes | No |
| <ul style="list-style-type: none"> Federal agency is actively involved with national initiatives (e.g. Imagery for the Nation (IFTN), Ramona, Master Address File (MAF), etc.) that are designed to meet the business needs of all levels of government | Yes | No |
| <ul style="list-style-type: none"> Federal agency actively participates with organizations such as NSGIC, NACo, URISA, MAPPS, ASPRS, IAFC, etc. to communicate on issues and determine the full range of solutions | Yes | No |

3. Coordinated Federal Program Development

State and local governments are frequently caught between federal agencies that seem unwilling to work on common programs that provide benefits to all partners. As an example, state and local governments are still requested to submit their data to a variety of federal agencies (even within the same federal Department) for inclusion in their respective Internet mapping applications and other special purpose systems.

Instead, these initiatives should be accomplished through the development and linkage of open systems that are maintained in a decentralized (or distributed) manner by all of the partner agencies. Non-federal partners should be able to work with the federal

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

agency with which they are most closely aligned to provide access to their data holdings. Federal agencies should then work together effectively to overcome the programmatic and technical issues that do not allow interconnectivity of systems. It is critical that every federal requirement for input by state and local agencies have a “menu of choices” and provide for general consensus standards to account for the varying capabilities, business needs, political environment, legal requirements, and resources of the individual states. The States of the Union should be viewed as partners and have explicit involvement in recent initiatives to identify Authoritative Data Sets. Some of these authoritative data sets are currently created and maintained by state and local government agencies.

Through coordinated programs, federal government representatives would be able to speak with one voice, providing a unified direction, and simultaneously provide many options to accomplish their federal goals and objectives. Identified success factors for this criterion are below:

| 3. Coordinated Programs – One voice, One Direction, Many Options | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| <ul style="list-style-type: none"> • Federal agency has a proven history of developing and implementing programs that effectively coordinate planning and action across federal agencies | Yes | No |
| <ul style="list-style-type: none"> • Federal agency is involved in national standards activities that engage, assist and support state and local participants, and other partners <ul style="list-style-type: none"> ○ Standards are vetted through the FGDC and are compliant with OMB Circular A 119 ○ Agency is a recognized data theme leader in OMB Circular A16 and aggressively pursues completion of national standards ○ Federal agency implements generally recognized consensus standard setting process (as opposed to unofficial unique standards set on a case-by-case basis). ○ Agency adopts existing standards into business model and communicates and trains agency staff on how to implement them | Yes | No |
| <ul style="list-style-type: none"> • Federal agency is involved with and committed to the design and implementation of common use portals and other Internet data activities (e.g. <i>The National Map</i> or Geospatial One Stop Program) that are Open Geospatial Consortium (OGC) compliant | Yes | No |
| <ul style="list-style-type: none"> • Federal agency demonstrates commitment to increasing process and data connectivity to a network of systems (in lieu of creating stovepiped solutions) | Yes | No |
| <ul style="list-style-type: none"> • As an interim step and to improve participation in the NSDI, federal agency supports partial enterprise geographic information management solutions developed and implemented by external partners that may not fully meet federal standards (i.e., Ramona) | Yes | No |

4. Interaction with Statewide Coordination Councils

The heart of NSGIC’s Fifty States Initiative is the development of Geospatial Strategic and Business Plans for the management of spatial information systems that address the needs of all stakeholders within each state. Effective Statewide Coordination Councils must be established in each state. It is important that federal agencies encourage and support the development of statewide business plans that clearly articulate the needs and appropriate solutions of the state’s stakeholders. Grant programs, such as the Federal Geographic Data Committee’s (FGDC’s) Cooperative Agreement Program (CAP) awards, are a great example of efforts that are mutually beneficial.

Federal agencies must endorse and support Statewide Coordination Councils by working through them to partner with state and local agencies. By using Statewide Councils as the primary conduit for communicating and coordinating information to other levels of government, federal agencies help to establish the Council’s role as the geospatial facilitator for the state, which increases opportunities for coordinated and collaborative efforts. Additionally, each state then has a vested interest in maintaining their networks of contacts with other levels of government (beyond electoral and workforce transitions, for example), which helps to accomplish Statewide Spatial Data Infrastructure (SSDI) programs. The Statewide Coordination Councils are the appropriate entity to facilitate and coordinate geospatial programs between the federal and more local levels.

Identified success factors for this criterion are below:

| 4. Working Through Statewide Coordination Councils | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| • Federal agency proactively interacts with and works through Statewide Coordination Councils to reach any stakeholder in a state | Yes | No |
| • Federal agency communicates all successful implementations of geospatial technologies developed cooperatively within a state back through Statewide Coordination Councils | Yes | No |
| • Federal agency administers grants that provide appropriate support for geospatial activities and state-level coordination initiatives (i.e. successful grant requests that include geospatial activities should encourage coordination with Statewide Coordination Councils) | Yes | No |
| • Federal agency supports independent grant programs that are designed to achieve federal government-wide objectives by supporting federal initiatives | Yes | No |
| • Federal agency supports the NSGIC Fifty States Initiative in other ways (e.g.. by directing field and regional staff to participate in statewide geospatial strategic and business plan development) | Yes | No |

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

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| | | |
| <ul style="list-style-type: none"> Federal agency works to integrate federal efforts with statewide business plans, objectives and requirements | Yes | No |
| <ul style="list-style-type: none"> Federal agency seeks commonalities in regional settings to improve the likelihood of successful partnerships | Yes | No |
| <ul style="list-style-type: none"> Federal agencies develop shared business requirements with state and local partners | Yes | No |

5. Program Development in Partnership with States

Effective partnerships result when the needs of each partner are met and there is a positive value proposition for each partnering agency. Data integration requirements and the business needs of federal and other levels of government that:

- support state initiatives,
- engage state activities, and
- provide maintenance mechanisms and funding assistance

These should be common components addressed in the federal agency’s program development process.

Identified success factors for this criterion are below:

| 5. Program development in partnership with States | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| <ul style="list-style-type: none"> Federal agency determines its own business needs for GIT and how to best incorporate GIT in its practices | Yes | No |
| <ul style="list-style-type: none"> Federal agency determines the needs of their customer base and how GIT might assist in meeting those needs | Yes | No |
| <ul style="list-style-type: none"> Federal agency determines how to incorporate GIT into its overall enterprise architecture activities | Yes | No |
| <ul style="list-style-type: none"> Federal agency includes geospatial functionality in their E-Gov applications | Yes | No |
| <ul style="list-style-type: none"> Federal agency includes broader geospatial community stakeholders in its activities | Yes | No |
| <ul style="list-style-type: none"> Federal regional staff input and regional differences are part of decision-making process and taken into consideration when crafting programs | Yes | No |

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

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| <ul style="list-style-type: none"> Federal agency regularly considers expectations and differing business needs for activities that manage land (eastern U.S. vs. western U.S.), or specific programs (such as Chesapeake Bay Program) | Yes | No |
| <ul style="list-style-type: none"> Federal agency regional and field staff are authorized to modify geospatial data standards in appropriate ways to ensure that effective partnership opportunities can be developed | Yes | No |
| <ul style="list-style-type: none"> Federal agency implements modern tools for location based services | Yes | No |
| <ul style="list-style-type: none"> Federal agency mandates metadata creation and commits Agency resources with metadata tools and time to satisfy that mandate | Yes | No |

6. Development and Deployment of Business Plans for Federal Programs

For program and budget purposes, the federal agencies are understandably focused on the development of their “300” documents. Though these are mandated business planning documents, they are often obscure and difficult to comprehend from the state and local levels. Federal agencies must develop summaries of the 300 documents or succinct business directives for each of their NSDI-related programs that describe the nature of the program, federal intent, geographic coverage, and the role that state and local governments will be expected to play in the execution of these plans. To increase opportunities for coordination and collaboration, federal agencies must clearly articulate the roles of federal, state and local agencies and the details of federal programs.

It is critical that federal agencies participate in developing Cost Benefit Analyses (CBA) that support the concept and vision of the NSDI as well as their individual NSDI framework components. This has become increasingly important as the proliferation of commercial mapping systems give the public, policy makers, and legislators a false sense that all of the mapping and geospatial data creation needs of the Nation are being met. These CBA documents must justify the expenditures required to meet the accuracy and scale requirements, coverage, currency and business needs of all partners involved in shared data and system development projects. As required by OMB Circular A130, those needs must be synthesized into concise working documents that can be used to establish partnership opportunities.

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

Identified success factors for this criterion are below:

| 6. Development and Deployment of Business Plans for Federal Programs | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| • Federal agency develops collaborative Business Plans that encourage and stimulate partnerships | Yes | No |
| • Federal agency Strategic and/or Business Plans exist for future geospatial initiatives, and their content has been communicated to Agency partners (NSGIC, State Coordination Councils, etc.) | Yes | No |
| • Federal agency has identified and committed sufficient funding to fulfill GIT needs | Yes | No |
| • Federal agency has identified sufficient staff resources to fulfill business needs | Yes | No |
| • Federal agency is able to and commits to funding for long-term partnerships with an eye on sustainable programs (as opposed to one-time appropriations) | Yes | No |
| • Federal agency coordinates with other federal agencies, state agencies and local government to share funding and resources as a standard practice | Yes | No |
| • Federal agency develops programs to fund state and local governments and assist them with activities beneficial to the agency | Yes | No |
| • Agency ensures that the Geospatial Line of Business (GLOB ¹) response for their agency is consistent, accurate and aligned with the GLOB Data Call | Yes | No |
| • Federal agency coordinates the development and sharing of web services | Yes | No |

7. Participation in Data and System Development Programs

Federal agencies must be active partners with state and local agency data development projects by providing financial support and/or effective in-kind services. Federal agencies must engage in state activities that are supportive of federal objectives and provide programmatic support that could include skilled resources, technical support and guidance, software tools, distribution mechanisms, funding, etc. Effective partnerships are based on participation by all partners and encourage data compatibility and access.

¹ Geospatial Line of Business is a coordination and efficiency exercise focused on the development and use of geospatial data at the Federal Government level.

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

The Fifty States Initiative is assisting Statewide Coordination Councils to develop and articulate spatial data and system development efforts. Federal agencies should be encouraged to review these efforts and determine the areas where collaboration through partnerships moves the Nation forward. Without such participation and interaction, the relationship will be more like a business transaction with a commodity that is for sale.

Identified success factors for this criterion are below:

| 7. Participation in data and system development programs | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| • Data sharing policy and culture of data sharing exists within the agency | Yes | No |
| • Data sharing policy is accessible, understood and followed by agency staff at all executive and technical levels | Yes | No |
| • Federal agency participates in data sharing activities with no restrictions to share unclassified public data | Yes | No |
| • Federal agency has identified and implements a fair and equitable partnership model that provides the ability to work effectively with all states | Yes | No |
| • Federal agency regularly and consistently uses (and relies upon) spatial data that are developed and maintained by state and local governments | Yes | No |
| • Federal agency creates mechanisms to provide resources to and share costs with state and local agencies (through the appropriate State Coordination Council) | Yes | No |
| • Federal agency encourages partnerships and demonstrates a willingness to fund or support them | Yes | No |
| • Federal agency works diligently to establish connections between programs and to dissolve all existing information and processing stovepipes, and works toward common solutions with state and local partners | Yes | No |

Criteria for Federal Coordination of Geographic Information Technology – A State Perspective

National States Geographic Information Council

May 1, 2008

Summary

The complexity of developing and maintaining NSDI framework components is daunting and will take a concerted effort at all levels of government. However, by promoting effective communication, coordination and collaboration efforts, the NSDI framework components can be developed, established and sustained. Efforts such as Imagery for the Nation that address the common business requirements and spatial data needs expressed at state, local and federal levels provide insights into the most effective way to build the NSDI.

The success factors identified here and in NSGIC's "For the Nation" criteria are not new. They are consistent with success factors in all major endeavors that require true partnerships and multi-agency participation. NSGIC's coordination models should be considered the first steps in establishing defined mechanisms for coordinating programs to complete development of the NSDI.

The adoption and use of the ***Criteria for Federal Coordination of Geographic Information Technology*** will help guide states and federal agencies through the partnership building process and will move us forward in collaborating on implementing an integrated, sustainable solution to the NSDI.