National Spatial Data Infrastructure Strategic Plan
2013 – 2016

Federal Geographic Data Committee

Initial Draft v1 (6-5-13)

<u>NOTE</u>:
This initial draft of the NSDI Strategic Plan (Version 1) has been prepared for review from the FGDC Steering Committee, the FGDC Coordination Group, and the National Geospatial Advisory Committee. Following this initial review, a revised draft of the plan (Version 2) will be made available for public review and comment in July/August 2013. For additional information on the NSDI strategic planning process, please visit: www.fgdc.gov/nsdi-plan.

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THE NATIONAL SPATIAL DATA INFRASTRUCTURE

Executive Order 12906 ("Coordinating Geographic Data Acquisition and Access ") describes the National Spatial Data Infrastructure (NSDI) as "the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data."

VISION

An integrated network comprised of people, data, hardware, software, and procedures through which geospatial data are assembled and converted to knowledge and/or information for the purpose of protecting and promoting our national interests.

CORE VALUES

Federal agencies that produce, maintain, or use spatial data either directly or indirectly will 1) recognize and manage their data as capital assets, and 2) work together through the FGDC to provide for effective and economical use and management in the digital environment for the benefit of the government and the Nation.

Our Core Values:

- Ensure that spatial data from multiple sources (Federal, State, local, Tribal governments, academia, and the private sector) are available and easily integrated to enhance understanding of our physical and cultural world.
- Protect the privacy and security of citizens' personal data and accuracy of statistical information about people, both in raw form and in derived information products.
- Enable access for all citizens to spatial data, information, and interpretive products, in accordance with OMB Circulars A-130 and A-16.
- Protect proprietary interests related to licensed information and data.
- Enable interoperability of federal information systems through the use of open and machine readable formats to enable access to resources from multiple Federal agencies and their partners.

INTRODUCTION

The Federal Geographic Data Committee's (FGDC) 2013-2016 Strategic Plan for the National Spatial Data Infrastructure (NSDI) sets priorities and describes the actions the FGDC will take, in collaboration with partners, to develop and maintain the National's critical geospatial infrastructure. The Plan describes a shared National vision for the sustainable continued development of the NSDI, and includes a set of goals and objectives for the Federal government's role in achieving this vision. The Plan provides a framework for the coordination of programs, the alignment of resources to achieve key goals, and a shared basis for collaboration with partners and stakeholders.

This Plan is timely for several reasons. First, while the FGDC has engaged in several recent strategic initiatives, including the Geospatial Line of Business and the Geospatial Platform, the current NSDI strategic plan has not been revised since 2005. Secondly, geospatial technologies, industries, and applications have seen tremendous growth and change over the past 8 years, so strategies need to be updated and modernized to align with and leverage these changes.

The Plan was developed during 2013 through extensive consultation with Federal agencies and with partners and stakeholders across the geospatial community. The National Geospatial Advisory Committee (NGAC) provided extensive input and comment on the Plan. The NGAC is a Federal Advisory Committee that includes representatives from all levels of government, the private sector, non-profits, and academia. In addition, representatives of the FGDC and the NGAC provided presentations or held discussions on the Plan at a variety of meetings and professional conferences. The FGDC also held a public comment period to seek feedback on the Plan. This external input was instrumental in shaping the Plan and in reflecting the perspectives of the broader geospatial community.

The three strategic goals described in the Plan provide a framework for the FGDC's responsibilities and will define our areas of focus over the next three years. Each supporting objective has one or more activities that describe how the FGDC plans to accomplish its goals. The strategic goals define areas of critical importance to the continued development of the NSDI, including:

- Developing National Shared Services Capabilities
- Ensuring Accountability and Effective Management of Federal Geospatial Resources
- Convening Leadership of the National Geospatial Community

The last section of the document describes the steps the FGDC community will take to implement the Plan, including the development of implementation strategies for the goals in the Plan. These implementation strategies will include performance measures addressing each of the objectives and activities described in the Plan. These implementation strategies will be developed in collaboration with partners and stakeholders, including the NGAC.

STRATEGIC PLAN OVERVIEW

Background

The Changing Geospatial Landscape
The technology landscape has seen tremendous change since the NSDI was initially conceptualized in the early 1990s. In the years leading up to the 1990s, advances in mapping and geospatial technology were largely driven by the public sector – with the Federal government playing a major role in the development and coordination of data, products, and services. The origins for many of the current geospatial innovations and operational successes have their roots in past government investment in research and implementation of computing and communication technology, geospatial software systems, NSDI framework data development, the Internet, remote sensors, and GPS.

In the years since the inception of the NSDI, remarkable advances in computing power, the emergence of open standards and open systems, and the Internet have reshaped the technology landscape. In recent years, availability and usage of geospatial information and products have dramatically expanded as software has matured and high quality data became available through newly implemented State and Federal clearinghouses and private sector offerings.

The Growing Role and Value of Geospatial Technology and Information
The geospatial technology and services industry is a growing and important factor in the U.S. and world economies, driving significant benefits and providing high-wage jobs. A 2012 study by the Boston Consulting Group (BCG) estimated that the U.S. geospatial industry generated approximately $73 billion in revenues in 2011 and comprises at least 500,000 high-wage jobs. In addition, BCG found that geospatial services deliver efficiency gains in the rest of the economy that are valued at many times the size of the sector itself – with geospatial services driving $1.6 trillion in revenue and $1.4 trillion in cost savings. These benefits, representing 15-20 times the size of the geospatial services sector itself, create an important competitive advantage to the U.S economy.

The Geospatial Information and Technology Association (GITA) recently reported that the geospatial information technology sector has recently been growing by 35% per year, with the commercial side growing at an incredible rate of 100% annually. In addition, the U.S. Department of Labor recently identified the geospatial technology sector as one of the three technology areas that would create the greatest number of new jobs over the next decade.

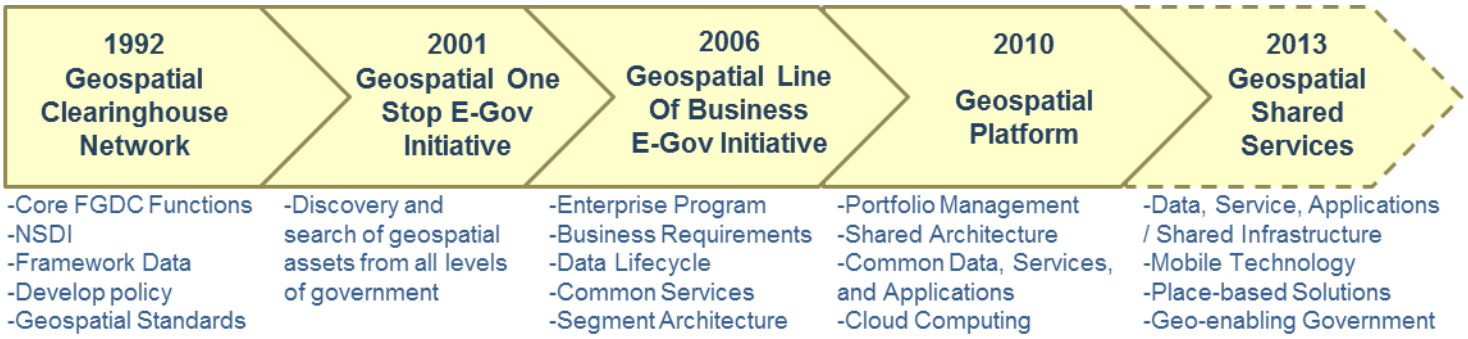
Worldwide, a 2012 study by Oxera commissioned by Google estimated that the global geospatial services sector generates $150 - $270 billion annually. By comparison, this is greater than the $25 billion generated by the video games industry, roughly equivalent to the $140 billion in revenue from the global security services industry, and about one-third of the global airline industry's revenues of $594 billion.

The Role of the FGDC
The Office of Management and Budget (OMB) has specific oversight responsibilities for Federal information technology systems and acquisition activities, including geographic information systems, to help ensure their efficient and effective use. Since 1953, OMB has released several iterations of Circular A-16 that, among other requirements, encourages avoidance of duplicative mapping and surveying efforts. These efforts were reinforced in 1994 by Executive Order 12906 ("Coordinating Geographic

Data Acquisition and Access"). Two subsequent laws that reinforce these responsibilities are the Clinger-Cohen Act of 1996 and the E-Government Act of 2002.

The FGDC, which was formally established by OMB in 1990, is the interagency committee that promotes the coordinated use, sharing and dissemination of geospatial data in the United States. The Secretary of the Interior is the Chair of the FGDC and the Deputy Director for Management of OMB is the committee's Vice-Chair. The Department of the Interior provides support for the FGDC through the Office of the Secretariat, which is housed within the U.S. Geological Survey.

For the past two decades the FGDC has worked to develop policies and partnerships to advance the development of the NSDI. To achieve this, the FGDC has contributed to the evolution of Federal and national geospatial initiatives. Several of these initiatives have been sponsored as Administration priorities and are highlighted in the following figure:



Most recently, the FDGC led the development of the OMB Circular A-16 Supplemental Guidance, initiated the implementation of a geospatial portfolio management approach, and led the development of the Geospatial Platform initiative. The OMB Circular A-16 Supplemental Guidance addresses portfolio management for the coordination of Federal geospatial data assets and investments to more efficiently support national priorities and government missions. Portfolio Management will apply consistent management approaches to help increase the quality of data through best practices and documentation in a manner that reduces duplication and cost and provides greater accessibility. The Geospatial Platform will provide a suite of shared services and capabilities to Federal agencies and partners. These developments build upon the previous processes and accomplishments of the FGDC community and will provide a means to more efficiently manage and deliver Federal geospatial products and services in the coming years.

The Challenge Ahead

The revolutionary changes in geospatial technology, applications, and data growth are likely to continue as technology leaders like Microsoft, Google, Apple and Nokia have all adopted location based services as key components of their business strategies. These changes in the consumer marketplace, and the growing visibility of geospatial technology across all sectors of the global economy, have led many in the public sector to re-evaluate their geospatial investments and strategies to better meet the needs of newly geospatial-savvy information consumers. Expectations are changing rapidly. More and more, citizens expect government to provide geospatial data to them in their specific areas of interest. Citizens have a growing expectation that government agencies provide the same level of place-based services that they now receive as a matter of course from private sector organizations.

While the government is increasingly being asked to provide high quality geospatial services and products to the public, we are faced with substantial budgetary challenges. As the public sector faces the challenge of doing more with less, the smart, efficient use of shared, enterprise geospatial technologies present significant opportunities to do just that. The geospatial technology field is at a remarkable point in its evolution, presenting an opportunity to rethink the deployment and use of these resources across the Federal government, and to enhance our ability to solve problems using geographic information while ultimately saving time and money.

This Plan provides a new set of goals, objectives and actions to re-envision Federal geospatial programs in light of the current state of technology and the maturing geospatial industry. This agenda will guide our shared efforts over the next three years.

A Shared Vision for the NSDI

The FGDC has worked with partners and stakeholders, including the members and organizations represented on the National Geospatial Advisory Committee, to collaboratively define a shared National vision that describes the value that the NSDI will bring to its stakeholders and partners.

NSDI Vision Statement

"An integrated network comprised of people, data, hardware, software, and procedures through which geospatial data are assembled and converted to knowledge and/or information for the purpose of protecting and promoting our national interests."

The NSDI should encompass the broad policy, organizational, cooperative, technical and financial arrangements needed to support immediate access to placed-based information. The scope of the NSDI includes the policies, organizational responsibilities, information, technologies, standards, services, and financial and human resources necessary to achieve this vision. The NSDI should be a vehicle for facilitating seamless data development, information sharing, and collaborative decision-making, recognizing the role that non-public entities play in the NSDI, and including those that facilitate formal and informal participation from individual contributors.

NSDI Past and Future

The following table highlights the scope of the NSDI in its early stages (Past) and a vision for 2016 (Future).

NSDI PAST	NSDI FUTURE (2016)
Enable the access, sharing and use geographic data across agencies	Focus on applied information for improved place based decision making
Establish spatial data and metadata standards	Leverage shared and standards-based services
Reduce duplication of effort among agencies collecting spatial data	Promote place-based business intelligence and smart, shared applications
Improve the quality, quantity, and reduction of costs related to geospatial data	Core set of information layers that interface with other data sources, many of which have location relevance.

NSDI PAST	NSDI FUTURE (2016)
Collect and make geographic data more accessible to agencies	Use real-time data feeds and sensor webs for improved monitoring, control, situational awareness, and decision making
Establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability	Establish policies and service level agreements to access and share real time geographic data operations management and decision support
Increase the benefits of using existing agency data	Use of multi-temporal information linked to place
Reduce the monolithic systems storing and managing duplicate spatial data and applications	Integrate and use advanced technologies and their associated standards and best practices
Collaborative efforts are centered around spatial data	NSDI is infrastructure in that it extends far beyond data – it includes and integrates people, hardware, software, and procedures
Establish a framework for the management of Federal geospatial data resources which involves public/private/non-profit shared governance	Makes data discoverable for innovation by all
Provide a process for creating and managing geospatial data and services standards	Movement toward community driven open standards
Create institutional knowledge about Federal geospatial data needs and subsequent collaborative acquisition and use	Nurture and incorporate a social fabric/network with its own intelligence and institution knowledge extending beyond a government entity (Virtual Organization) to create consensus and community
Create a framework of personnel dedicated to understanding and supporting the geospatial needs of the Federal government	Provide government, businesses and citizens with a way to visualize and explore data to derive information and knowledge. Create a network of resources and services for seamless integration of location referenced information into broader information assets to serve the needs of government, business and citizens

Roles and Responsibilities of the Federal Sector and Partners

The FGDC, in collaboration with partners and with input from the NGAC, has examined the current and future roles of the Federal government and other sectors as they relate to the continued development of the NSDI. The following is a summary of the key geospatial roles for the Federal government and relationships with other sectors of the geospatial community.

Content Provider Role
The FGDC must move from a focus on providing data to providing geospatial services. This shift encompasses the National Map and framework data, the A-16 categories, metadata and catalogs, and interagency communications. The Federal government should focus on the implementation of the Geospatial Platform as a primary mechanism for collaborative development and distribution of data content via standards-based services.

Facilitator Role
The FGDC should facilitate collaboration between and across all levels of government, academia, non-profits, the private sector, and individuals for research and to create data and information services. To accomplish this role, the Federal community can convene key experts, decision-makers, and stakeholders to address common concerns and solve problems. The Federal role can be to work with other levels of government and stakeholders to share data, approaches, and services; and to develop best practices to meet common needs.

Curator Role
The Federal community should shift its focus from providing content to delivering services that provide data in standardized, accessible, open formats. The Federal community should take the lead in building and maintaining an online catalog for transparent discovery and access to Federal and other data through the Geospatial Platform and other resources.

Leadership Role
The Federal government can play a critical role in providing institutional leadership for the development and coordination of national and international geospatial policies, the integration of geospatial technology into IT management processes, and in coordinating resolution of legal and policy issues. The Federal government is in a unique position to convene multiple stakeholders, through mechanisms such as the NGAC, to develop joint approaches to issues affecting multiple sectors. In addition, the Federal community can provide leadership to establish joint acquisitions of geospatial data and services (e.g., Smartbuy) with buy-up options for partners.

Enabler Role
The Federal government can play an enabler role to make geospatial data and services more accessible to an expanded audience and to work with partners to develop more timely, accurate and useful data and services. In this way the Federal government can make local information play an enhanced role in national government and business operations.

Standards and Research Role
The Federal government can help direct and develop a multi-scale ontology of spatial information that has scale-specific content and corresponds to map display standards. Ontologies can be application specific, or promote data fusion across diverse domains.

This table summarizes the key roles of the Federal government and other sectors in advancing the NSDI.

Role	Federal Priority	Federal	State/Local/ Tribal	Academia	Private Sector
Content Provider	Medium	L	L	S	L
Facilitator	High	L	L	L	L
Curator	High	L	S	P	S
Leadership	High	L	S	S	P
Enabler	Medium	L	S	L	S
Standards and Research	High	L	L	S	S

Level of involvement: L - Lead S - Support P - Participate

External Factors

The National Geospatial Advisory Committee has identified the following key factors, including technology, economic, political and organizational trends, that should be considered for national-level geospatial strategy.

Evolutions in Information Management
Innovations in data collection, management, processing, dissemination and application are becoming available largely through private sector advancement of sensors, crowd-sourcing, big data storage/analytics and information distribution technologies, and through academic and government funded research. In light of these changes, the role of government is transitioning from building framework spatial infrastructure to ensuring that specific programmatic goals and the greater public good are served by trusted, documented information resources. This information has new requirements for transparency, currency, accuracy, and accessibility. The next generation of geospatial resources will be information sourced and served from a combination of the private sector, the public sector, individuals, non-government groups, and public-private partnerships.

Geospatial information is now viewed as one component of the overall information management fabric. Geospatial infrastructure must provide value via connected services to a diverse set of devices operated by end users comprising a full range of roles and skills. It must balance the same demands as other information resources (accessibility, security, persistence, reliability, confidentiality and cost-efficiency), while providing the spatial capabilities that are its core strength: visualization, analytics, and the ability to bring together disparate information resources using location as a unifying principle.

Important Trends
Other trends impacting the strategy for a national geospatial infrastructure can be characterized by four themes: technology; workforce; communications; and legal/policy.

<u>Technology</u>

- The ‘internet of things’ will connect billions of stationary and mobile sensors with human users.

- The value of integrated geospatial information (3D, 4D, indoor, unstructured, linked, archived) will be magnified by high-powered processing and analytics capabilities, and by the ability to provide succinct intelligence to decision makers.
- Static ad hoc data will yield to big data transactional models based on Cloud-based service models for infrastructure, software, and information content.
- The needs and practice of general IT and geospatial management will converge.
- Increasingly, geospatial information resources and application source code will be built collaboratively, using open, rapid deployment strategies and open standards.

Impacts: Geospatial technologies will be called upon to organize a much larger information domain, to provide trusted analysis of complex 'big data' holdings, and to effectively visualize and communicate knowledge so that it can be turned into operational efficiencies. Open data and open government initiatives built on the desire for efficiency and transparency will be the norm, and must be balanced against traditional IT requirements for appropriate levels of information security and risk management. Geospatial strategies should use life-cycle approaches that factor in time-to-market and future agility in systems development and evolution.

Communications

- Systems for information delivery will be ubiquitous and highly mobile, will utilize web-based services, and will be components of more advanced information workflows.
- Few, if any, traditional media will survive the changes initiated by dynamic social media channels.
- Agencies and individuals will have far higher expectations of quality, timeliness, currency and accessibility of geospatial data and services, yet will have ubiquitous access to information with vastly different lineages and degrees of uncertainty.

Impacts: There is a heightened need to collect, store, and process data from sensors and crowd-sourcing and connect it to decision making processes as actionable information. Harnessing content provided by sensors and social media, in particular, as feedback to enhance authoritative processes and products, needs research and strategy. Information regarding data, processes, and products must be more usable and reliable to ensure meaningful applications of data to create knowledge and inform decisions. Additional attention is needed with regard to the measurement and expression of the uncertainty inherent in information and related analytical products.

Workforce

- There will be increasing demand for skill sets positioned at the intersection between the traditional IT and geospatial realms such as: application and services development, geoinformation fusion, crowd-sourcing, social networks and human- geography, visual analytics, and forecasting/modeling.
- There will be increasing acceptance of professional competency from non-traditional sources: massive open online courses (MOOC) and other online training and information resources.
- Responsibilities for geospatial data and shared services operations will increasingly be assigned to information technology and chief information officers.

Impacts: The current capabilities and organization of the geospatial workforce will be called upon to transform at a rapid pace. This is no small task as it will require a combination of finding, retraining, reorganizing and replacing existing staff. Successful geospatial organizations will build and maintain

agile workforces closely-aligned or within IT divisions. IT security governance models will need to adapt to an evolving Cloud deployment environment where infrastructure and platform security is easily shared across agencies.

Legal/Policy

- Views on geospatial privacy will evolve. Overall public interest in legislating it is growing, and at the same time, a generational gap in public opinion is widening. Legislation will lag the changes in technology and behavior.
- Capabilities of local, Tribal, regional and State geospatial resources continue to improve and, in many areas, will provide the best sources for ongoing current and accurate information.
- Government policy and private practices will increasingly demand information transparency. Data will be considered an integral and accountable part of decision-making, including its use in models and forecasts.

Impacts: Proactive approaches are needed to develop consensus terminology, develop policy, and educate citizens and decision makers with regard to geospatial data gathering, dissemination, licensing, and usage practices. Privacy, confidentiality, and security issues must be addressed for sensitive geospatial information, especially when directly linked to personally identifiable information, to protect the interests of both individuals and commerce. A priority of privacy policy efforts should be on developing consensus acceptable practices with immediate use, such as "pretty good privacy." Issues at the margins of privacy acceptability should not delay important work to aggregate and utilize geospatial data and services from local to national levels in a timely manner.

Summary: What External Factors will Influence the Future of the NSDI?

There are many external factors that are driving trends in technology, communications, workforce, and legal/policy aspects of importance to a future NSDI. They signal a strong need to comprehensively rethink national-level geospatial strategy to align with both mainstream and emerging information technology practices and with related trends. Geospatial technologies provide attractive integrative approaches for meeting current requirements to "do more with less." New approaches are demanded, supported and must be implemented quickly for technology, collaboration, workflow, funding, and other resources. Geospatial technology is IT and this national geospatial strategy should reflect its place in the broader ever-evolving technology ecosystem.

Strengths, Challenges, and Opportunities

The FGDC serves as the primary forum for geospatial coordination and collaboration among federal agencies. This forum has created a strong sense of community and has spawned numerous formal and informal partnerships among federal agencies and with external partners to address common goals and achieve mission-critical objectives. In developing this plan, the FGDC has held a series of discussions and forums with many Federal and non-Federal stakeholders to identify strengths, challenges, and opportunities related to the ongoing development of the NSDI. Highlights include the following:

- The quantity, quality, distribution, and access to geospatial data, information, and services have been identified as strengths of the federal community. The diverse geospatial community relies on the FGDC's leadership for metadata guidance and the coordination of standards. In addition, the geospatial community holds a shared value in the importance of standards, data sharing, partnerships, and collaboration to solve real issues.

- The Federal role in providing leadership, policy development, and facilitation of the broad range of organizations and interests involved in the geospatial community has been identified by stakeholders as a critical responsibility – one that can be accomplished most effectively by the Federal government.

- Execution, accountability, and enforcement of A-16 responsibilities have been identified as challenges for the federal community. The task of building the NSDI and the accomplishment of A-16 responsibilities has not always been aligned with agency missions. Presently, there are insufficient means to ensure accountability and enforcement of A-16 responsibilities.

- Although the broad range of participants in the geospatial community is an asset, it also presents challenges regarding focus and competing priorities for a community of diverse needs. It is difficult to quantify geospatial investments because they are often integrated into other programs and services. Moreover, geospatial data management is not fully integrated into the IT community and many programs that have geospatial components are not visible through IT management processes.

- With the successes of the National geospatial community and the expanded use of geospatial data and services, new challenges are arising for the Federal geospatial community. It has been difficult to express the value and benefit of federal investments in providing geospatial data and services when the public can readily access information through applications on smart phones and computers. In addition, technology adoption and policy development by the Federal government often cannot keep up with the speed of the innovative changing technology. The role of the Federal sector is evolving and the Federal geospatial community will have to be agile and flexible to accommodate and adapt to these changing roles.

The goals and objectives of this strategic plan are designed to leverage these strengths, address current challenges, and take advantage of the opportunities provided by the dramatic changes in the geospatial technology landscape.

STRATEGIC GOALS

Goal 1 – Develop National Shared Services Capabilities

Shared services are a vital strategy for delivering geospatial solutions faster, for less money, and with fewer resources. These enterprise approaches take advantage of evolving technologies and methodologies to reduce potential duplication, accomplish agency mission and support functions more efficiently, while also improving quality and flexibility. This strategic goal describes how the Federal geospatial community will work with partners to develop shared service approaches and leverage the Administration's Federal Information Technology Shared Services Strategy.

The Geospatial Platform initiative is a critical component of the NSDI Strategic Plan. The Platform is a web-based service environment that provides access to a suite of well-managed, highly available, and trusted geospatial data, services, applications, and tools for use by Federal agencies and their State, local, Tribal, and regional partners in fulfilling their missions. In addition, the FGDC and its partners will utilize common cloud computing and enterprise acquisition approaches as mechanisms to leverage technology, close productivity gaps, and combine their buying power for similar needs.

Objective 1.1: Develop geospatial interoperability reference architecture

- **Activity 1.1.1:** Establish reference architecture to assure interoperability between unclassified, secure-but-unclassified and classified domains and missions.

- **Activity 1.1.2:** Define the role of the Geospatial Platform as a target for unclassified geospatial information sharing.

- **Activity 1.1.3:** Identify Federal CIO Council standards, shared services, and other infrastructure that can be reused and leveraged by the NSDI, including access control, search, and discovery.

Objective 1.2: Institutionalize the Geospatial Platform

- **Activity 1.2.1:** Establish Service Level and Funding Agreements between and among government agencies and the Geospatial Platform Managing Partner.

- **Activity 1.2.2:** Establish the Geospatial Platform Oversight Body and develop its operating procedures, scope, and roles of Federal and non-Federal members.

- **Activity 1.2.3:** Implement the primary contracting mechanism to continue Platform development and O&M for FY 2014 and beyond.

- **Activity 1.2.4:** Implement Marketplace functionality and A-16 Thematic Communities.

- **Activity 1.2.5:** Develop guidance for agencies in using the Geospatial Platform for storing and publishing data, metadata, and services in the Platform common hosting infrastructure.

- **Activity 1.2.6:** Solicit concepts from the NGAC to expand and enhance the Geospatial Platform.

- **Activity 1.2.7:** Define concept and develop implementation plan for "Data as a Service" offering of the Geospatial Platform Marketplace.

Objective 1.3: Expand the use of cloud computing

- **Activity 1.3.1:** Define mechanism and workflow for Geospatial Platform leveraging of DOI Foundational Cloud Services offering for the benefit of the Platform community.

- **Activity 1.3.2:** Provide guidance, best practices, and case studies for agencies considering migration of agency-stored content and services to commodity cloud providers.

- **Activity 1.3.3:** Develop options paper for expanding currently defined common hosting environment to look at other capabilities available in the commercial market.

Objective 1.4: Promote the use of consolidated acquisition vehicles for interagency and intergovernmental purchases

- **Activity 1.4.1:** Inventory available and planned geospatial acquisition vehicles open to Federal agencies and non-Federal partners.

- **Activity 1.4.2:** Create mechanism for sharing information on availability and use of consolidated acquisition vehicles.

Goal 2 – Ensure Accountability and Effective Management of Federal Geospatial Resources

The effective management of geospatial investments will enable us to control costs, streamline services, make decisions on eliminating duplication, save taxpayer dollars, and drive efficiency across the Federal government. The OMB Circular A-16 Supplemental Guidance provides guidelines for implementing a portfolio management approach to Federal geospatial investments and managing National Geospatial Data Assets (NGDA) government-wide. This approach will allow us to identify the datasets that are most critical for meeting the needs of government and of stakeholders – and to make these available as mature datasets. This strategic goal describes the actions the Federal geospatial community will take to implement portfolio management to more effectively plan geospatial data collection efforts, assess the status of NGDAs, and minimize duplicative investments.

Objective 2.1: Advance portfolio management process for National Geospatial Data Assets (NGDA)

- **Activity 2.1.1**: Identify foundational NGDAs to be included in NSDI portfolio management.
- **Activity 2.1.2:** Define Federal roles and responsibilities in National data management, including metadata and data delivery, taking into account A-16 Supplemental guidance portfolio management requirements, Open Data policy, Geospatial Platform, and other relevant requirements.
- **Activity 2.1.3:** Finalize A-16 Portfolio Management Plan.
- **Activity 2.1.4:** Develop process for monitoring and reporting on the progress of A-16 Data Theme and Geospatial Platform Community management responsibilities.

Objective 2.2: Develop process to identify potentially duplicative investments and opportunities for collaborative investments

- **Activity 2.2.1**: Provide guidance and instructions to Federal agencies for use of Geospatial Platform Marketplace function.
- **Activity 2.2.2**: Develop process and technology implementation to track use of Geospatial Platform Marketplace function and cost savings/avoidance through its application.
- **Activity 2.2.3:** Solicit feedback from Geospatial Platform user community on future requirements for Marketplace functionality.

Goal 3 – Convene Leadership of the National Geospatial Community

The Federal government is in a unique position to provide a leadership and facilitation role in the National geospatial community. This leadership role includes providing institutional leadership for the development and coordination of national and international geospatial standards and policies, integrating geospatial technology into IT management processes, coordinating resolution of legal and policy issues, and fostering collaboration across sectors. The Federal geospatial community can play an important role in communicating the value of geospatial information and tools to enable informed analysis and decision-making. This strategic goal has been identified by stakeholders as a critical responsibility – one that can be accomplished most effectively by the Federal government.

Objective 3.1: Lead and participate in the development and coordination of national and international standards applicable to the geospatial community

- **Activity 3.1.1**: Consult and collaborate with non-traditional geospatial communities to advance common standards and approaches (e.g., Big Data, VGI, neo-geo).

- **Activity 3.1.2**: Develop strategic partnerships with existing standards development organizations.

- **Activity 3.1.3:** Engage the standards community through workshops or online information sharing tools such as web meetings or social media.

Objective 3.2: Convene the leadership of the geospatial and non-geospatial communities to develop shared approaches to critical National issues

- **Activity 3.2.1**: Engage with the NGAC, key geospatial organizations, and other stakeholders to inform policy decisions and collaboratively address issues of common concern.

Objective 3.3: Raise awareness of the NSDI and its impact on critical National issues

- **Activity 3.3.1**: Develop a communication strategy and outreach plan to promote the benefits of NSDI data and the goals of the NSDI strategic plan.

IMPLEMENTING THE NSDI STRATEGIC PLAN

Implementation Strategies and Performance Measurement Approach

The FGDC community will work collaboratively to implement and monitor implementation of the NSDI Strategic Plan. A designated federal official will serve as the champion for each strategic goal. The champions will report to the FGDC Executive Committee, which will have the lead responsibility for monitoring the implementation of the Plan. The champions will be responsible for mobilizing team leaders and/or action teams to address each objective and its supporting actions. Each team leader will be expected to submit a project plan consisting of the actions and detailed strategies, responsible parties, performance measures, resources needed, and milestones for each of the objectives, within one quarter following adoption of the NSDI Strategic Plan. The project plans will describe how the goals and objectives will be achieved, including descriptions of the resources needed to achieve the goals and objectives and how agencies will collaborate to achieve them.

The performance measurement approach is critical to successful implementation of the goals and objectives set forth in this Plan. Performance measures will be based on data (numeric description and results) and will describe whether the identified action is achieving its expected result and if progress is being made toward attaining the goal or objective. With the completion of each project plan, performance measures will be reviewed and evaluated by the champions and Executive Committee as to whether the measure or metric will demonstrate progress toward achieving the objective.

The champions, in collaboration with the Executive Committee, will review, approve, and monitor performance based on performance measures and milestones. Brief, written quarterly reports against milestones and performance measures will be required for each objective. Progress will be reported to the FGDC Steering Committee and Executive Committee at each meeting.

Progress will be monitored and performance measures will be established for each of the actions and activities associated with the goals and objectives. These activities and actions will be prioritized, managed, and implemented by the identified federal lead in a way that provides the greatest benefit to the national geospatial assets. The initiatives will lead to a more efficient, systematic, and nationally based approach to the management and implementation of the federal assets.