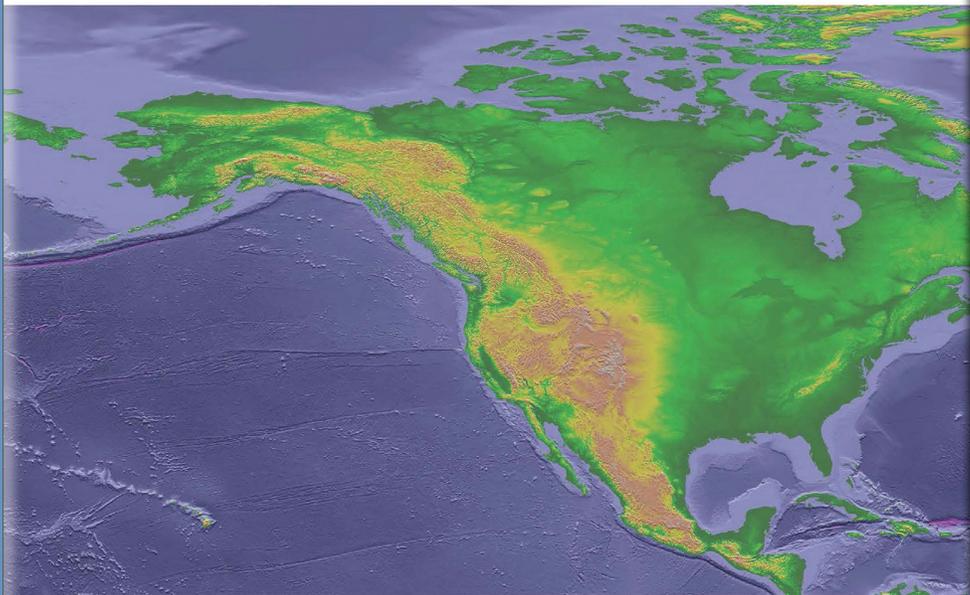


2014 Annual Report

Federal Geographic Data Committee

National Spatial Data Infrastructure Strategic Plan 2014–2016



Federal Geographic Data Committee



Federal Geographic Data Committee
IVAN DELOATCH, Executive Director

Federal Geographic Data Committee, Reston, Virginia: 2015

For more information on the Federal Geographic Data Committee
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Message from the FGDC Chair

I am pleased to present the Federal Geographic Data Committee's (FGDC's) annual report for fiscal year 2014. I am honored that Secretary Jewell has asked me to serve as the new Chair of the FGDC. I look forward to working with our partners and stakeholders on our common goals and objectives. I would also like to take this opportunity to recognize Anne Castle, who served as the FGDC Chair from 2010 to 2014. Ms. Castle promoted partnerships and transparency through extensive outreach and collaboration with multiple stakeholders. The FGDC's accomplishments over the past several years can be credited in part to Chair Castle's collaborative spirit and strong leadership. I look forward to continuing her work and enthusiasm for the FGDC in my tenure as Chair.

This report provides a summary of program, management, and performance information and describes the FGDC's actions over the past year to facilitate sustainable development and dissemination of geospatial data and technology. These actions support important initiatives such as the Digital Government Strategy, the Open Data Initiative, and Information Technology (IT) Shared Services.

During 2014, the FGDC completed a major effort to develop and update the strategic plan for the National Spatial Data Infrastructure (NSDI). The strategic plan describes a shared national vision for the NSDI and includes a clear set of goals and objectives for the Federal role in achieving this vision. The plan, which was developed through extensive outreach and collaboration, provides a clear roadmap for the FGDC's activities over a 3-year period and provides guidance for Federal agencies and other stewards of geospatial information to maximize the plan's utility.

The FGDC also completed and began implementation of the National Geospatial Data Asset (NGDA) Management Plan in fiscal year 2014. The NGDA plan provides a sustainable basis for managing and monitoring investments in Federal geospatial assets.

The FGDC and its partners have continued to develop the Geospatial Platform, releasing many new features and capabilities. For example, geospatial hosting services were expanded to allow partners to develop and publish shared data and applications, and the Administration's Climate Data Initiative was supported through the publication of new data and the establishment of a "Climate Resources" area on Geoplatform.gov. These accomplishments increase the ability of the Geospatial Platform to offer access to trusted geospatial data, services, and applications managed in the Federal Geospatial Portfolio.

The FGDC continued its leadership and participation in the development and coordination of standards and metadata applicable to the geospatial community. The FGDC endorsed two new standards in 2014: the Real Property Asset Data Standard (RPADS) and the OpenGIS Web Feature Service 2.0 (WFS 2.0) Interface Standard. The FGDC Geospatial Metadata Program engaged in several activities to support the Geospatial Platform and FGDC management initiatives.

The FGDC's accomplishments over the past year have been informed by extensive collaboration and coordination with our network of partners and with the National Geospatial Advisory Committee. I appreciate the hard work of the dedicated employees from multiple organizations across the country that carry out the work of the FGDC.

Fiscal year 2015 will focus on continued collaboration with partners to advance national geospatial programs. We will continue with our implementation of the NSDI Strategic Plan and the NGDA Management Plan as we enhance the Geospatial Platform to provide more effective services to our Federal and non-Federal partners. We look forward to continuing progress and partnerships in the coming year.

Sincerely yours,

Jennifer Gimbel
FGDC Chair
Principal Deputy Assistant Secretary for Water and Science
Department of the Interior



In Recognition of Anne Castle

FGDC Chair, 2010–2014



Anne Castle, the former Assistant Secretary for Water and Science at the Department of the Interior, served with distinction as the Federal Geographic Data Committee (FGDC) Chair from 2010 to 2014, bringing exceptional leadership and a positive, collaborative approach to the committee’s activities. Ms. Castle provided a compelling vision and insight in promoting the FGDC’s efforts to facilitate sustainable development and dissemination of geospatial data and technology. She led the FGDC in supporting the Administration’s Digital Government Strategy, Open Data initiative, and Information Technology (IT) Shared Services; and she provided leadership in advancing Interior’s vision of understanding our Nation’s resources at a landscape level. The FGDC’s accomplishments and goals during her tenure were consistent with these directives and set us on a path forward to completing these missions. The FGDC has taken great strides under Ms. Castle’s direction in advancing important initiatives such as the Geospatial Platform and the Open

Water Data Initiative, completing significant strategic documents such as the National Spatial Data Infrastructure (NSDI) Strategic Plan and the National Geospatial Data Asset (NGDA) Management Plan, and building strong relationships with a wide variety of partners and stakeholders.

Ms. Castle promoted partnerships and transparency through extensive outreach and collaboration with Federal agencies; the National Geospatial Advisory Committee; and our network of partners in other levels of government, the private sector, nonprofit organizations, academia, and other geospatial communities. The FGDC’s accomplishments over the past several years have been supported and informed by this extensive collaboration and coordination. Ms. Castle always expressed her appreciation for the hard work of the dedicated employees from multiple organizations across the country who carry out the work of the FGDC. She was a strong advocate for Federal geospatial programs, and we appreciate all she has done to promote the geospatial community.

In recognition of Ms. Castle’s contributions to the FGDC and the geospatial community, the National Geospatial Advisory Committee approved the following resolution in September 2014:

“The National Geospatial Advisory Committee does hereby acknowledge and recognize the significant contributions of Anne Castle, Assistant Secretary of the Interior for Water and Science, to the advancement of the national geospatial community.

In her role as the Chair of the Federal Geographic Data Committee, Ms. Castle has promoted partnerships and transparency through extensive outreach and collaboration with the National Geospatial Advisory Committee and many other stakeholders. The NGAC’s accomplishments over the past several years have been supported and informed by her collaborative spirit and strong leadership of the FGDC.

The National Geospatial Advisory Committee expresses its sincere appreciation to Ms. Castle and its best wishes for her future endeavors.”

The FGDC community sincerely thanks Ms. Castle for her vision and leadership and offers her many good wishes in her future endeavors.

Highlights for Fiscal Year 2014

NSDI Strategic Plan

The National Spatial Data Infrastructure Strategic Plan for 2014–2016 was approved by the FGDC Steering Committee and endorsed by the National Geospatial Advisory Committee in December 2013. The plan sets priorities and describes the actions the FGDC will take, in collaboration with partners, to develop and maintain the Nation's critical geospatial infrastructure. The implementation of the plan has been initiated. For more information see page 3 and Appendix E.

NGDA Management Plan

As part of ongoing efforts to support implementation of the Office of Management and Budget (OMB) Circular A–16 Supplemental Guidance, the FGDC Federal agencies assisted in the development of the National Geospatial Data Asset (NGDA) Management Plan that was approved by the FGDC Steering Committee in March 2014. Implementation of the plan is in full force and five of the 27 actions described in the plan were completed. These included identifying initial baseline NGDA Datasets, establishing a coordination mechanism across NGDA Themes, activating the NGDA Theme Lead Collaboration Community and Theme Communities on Geoplatform.gov, and developing a process for maintaining NGDA administration. In addition, NGDA Theme administrative and NGDA Dataset maturity assessment surveys were developed. For more information see page 8.

Geospatial Platform

The Geospatial Platform released several new features and capabilities that increase the ability for the Geospatial Platform to offer access to

trusted geospatial data, services, and applications managed in the Federal Geospatial Portfolio. Highlights this year include establishing communities for each of the NGDA Themes, expansion of geospatial hosting services, implementation of the Open Geospatial Consortium's Catalog Service for the Web (OGC CSW) interface on the data catalog serving Data.gov and Geoplatform.gov, and establishing a climate resource area to support the Administration's Climate Data Initiative. For more information see page 10.

National Geospatial Advisory Committee

During the past year the National Geospatial Advisory Committee (NGAC) analyzed and provided feedback and recommendations to the FGDC on critical geospatial policy and management issues. These issues included the ongoing FGDC initiatives (2014–2016 NSDI Strategic Plan, NGDA Management Plan, Geospatial Platform) and NGAC subcommittee activities (Landsat Advisory Group, Geolocation Privacy, Geospatial Education and Workforce Development, National Address Database). For more information see page 12.

Standards

The FGDC continued its leadership and participation in the development and coordination of national and international standards applicable to the geospatial community. The FGDC endorsed two standards in 2014: Real Property Asset Data Standard (RPADS) and OpenGIS Web Feature Service 2.0 (WFS 2.0) Interface Standard. The Open Geospatial Consortium endorsed both OGC GeoPackage 1.0 and OGC Sensor Web Enablement (SWE) 2.0. The National Geospatial-Intelligence Agency (NGA) developed Geopolitical Entities, Names, and Codes (GENC)

Standard Edition 2. And finally, the U.S. Geological Survey executed Interoperability Assessment Exercises. For more information see page 14.

Geospatial Metadata

The FGDC Geospatial Metadata Program engaged in several activities to support the Geospatial Platform as well as the implementation of the NSDI Strategic Plan and the NGDA Management Plan. Also, building on the recommendations from the 2013 International Organization for Standardization (ISO) Metadata Implementation Webinar, the FGDC Secretariat launched the ISO Metadata Implementation Forum to increase awareness and coordinated the redesign of the ISO Metadata Editor Registry to improve the accessibility of available metadata creation and publishing tools. For more information see page 15.

International

The FGDC actively supported international efforts through several groups. The FGDC Global Geospatial Information Management (GGIM) Working Group represented the United States in meetings held in Beijing, China, and in New York, and a forum held at the United Nations in New York. The U.S. intergovernmental Group on Earth Observations (USGEO) achievements include (1) completion of the National Plan for Civil Earth Observations and (2) collaboration with the international Group on Earth Observations (GEO) for the 2014 GEO Geneva Ministerial Summit and GEO Portal demonstration. Resources from the FGDC Office of the Secretariat provided support to the Global Spatial Data Infrastructure (GSDI) Association's 2014 Small Grants Program. In addition, the FGDC was represented at the 2014 Geospatial World Forum in May 2014. For more information see page 16.

The Loss of a Champion



"Don't cry because it's over, smile because it happened." Theodor Seuss Geisel

On May 31, 2014, the geospatial community lost a respected colleague, technical visionary, and well-recognized leader in the establishment of spatial data infrastructure (SDI). Doug Nebert, a long-time Federal Geographic Data Committee (FGDC) and U.S. Geological Survey colleague, lost his life tragically in a private plane crash in his home State of Oregon.

Doug's career spanned over 30 years of service with the USGS and the FGDC Secretariat. Ever committed to furthering the availability and use of geospatial and mapping technologies to address important issues, Doug was known nationally and internationally for his expertise, technical ability, and dedication to building cooperative relationships, integrated technical solutions, and spatial data infrastructures. His role in the geospatial community, both in the

United States and internationally, was driven by his desire to assist others in advancing their own capabilities. His vast expertise, leadership, and eagerness to help others have been critical to the geospatial community's shared success.

Doug was known for his foundational work in modern geospatial information systems. He received one of the highest honors provided by the Open Geospatial Consortium (OGC), the Kenneth D. Gardels Award, for his personal and professional contributions and leadership. In recognition of Doug's career achievements and leadership, the European Commission's Infrastructure for Spatial Information in the European Community (INSPIRE) organization established an annual award in honor of Doug Nebert during their 2014 conference. Beginning at the next INSPIRE conference in 2015, the award will be provided to the participant(s) who offers a paper and presentation with the highest technical merit advancing spatial data infrastructure principles for the 28 European member countries of INSPIRE. INSPIRE is the European counterpart organization of the FGDC.

The impacts of Doug's loss have been felt by colleagues and friends around the world who have shared an outpouring of condolences, memories, and reflections. Doug served with true distinction and his achievements and influence are widely recognized across the geospatial community.

Establishment of the Doug D. Nebert NSDI Champion of the Year Award

The FGDC is establishing and sponsoring an annual "Doug D. Nebert National Spatial Data Infrastructure (NSDI) Champion of the Year Award" to honor Doug's innovation, vision, and commitment to advancing the U.S. NSDI. The award will recognize exemplary technical achievement and leadership in supporting the development and advancement of the NSDI.

The vision of the NSDI is to assure that spatial data from multiple sources—Federal, State, Tribal, regional, and local governments, academia, and the private sector—are available and easily integrated to enhance the understanding of our physical and cultural world. The award will be announced annually in the FGDC Annual Report to an individual or team representing Federal, State, Tribal, regional, and (or) local governments, academia, or non-profit and professional organizations for development of an innovative operational tool, application, or service capability used by multiple organizations.

The award will be based on the following foundational precepts:

- Innovation and vision
- Interoperability
- Use of standards
- Advancement of NSDI principles
- Service to communities of users
- Developed once, used by many
- Improved performance and service
- Real-world application

Specifics of the award process will be provided in 2015 with the first award announced in the 2016 FGDC Annual Report.

2014–2016 NSDI Strategic Plan – Charting a Path Forward for the NSDI

Introduction

In fiscal year 2014, the Federal Geographic Data Committee (FGDC) completed a new strategic plan for the National Spatial Data Infrastructure (NSDI). The plan, which covers the years 2014–2016, sets priorities and describes the actions the FGDC will take, in collaboration with partners, to develop and maintain the Nation’s critical geospatial infrastructure. The plan describes a shared national vision for the sustainable continued development of the NSDI and includes 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.

The National Spatial Data Infrastructure

Initially conceptualized in the early 1990s, the NSDI is described in Executive Order 12906 (Coordinating Geographic Data Acquisition and Access) as “the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data.” In the years since the inception of the NSDI, remarkable advances in computing power, the emergence of open standards and open systems, and the development of the Internet have reshaped the technology landscape.

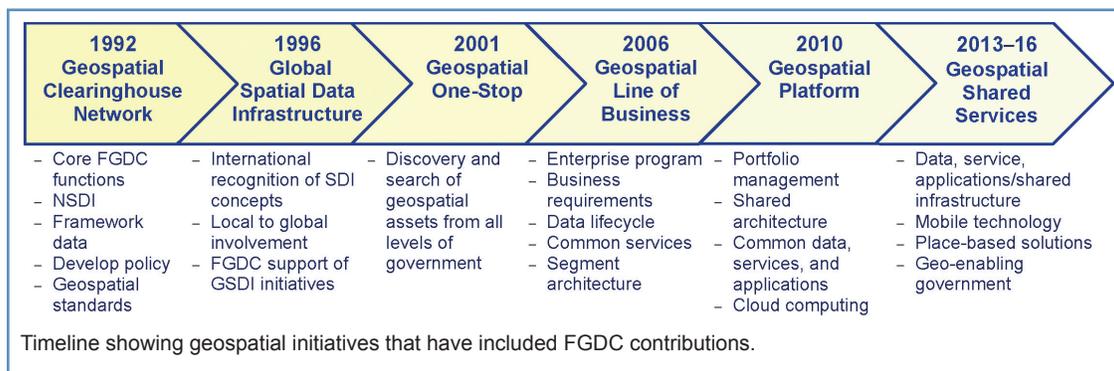
For the past two decades the FGDC has worked to develop policies and partnerships to advance the development of the NSDI. To achieve this, the FGDC has contributed to the evolution of Federal and national geospatial initiatives. Several of these initiatives have been sponsored as Administration priorities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

The 2014–2016 NSDI Strategic Plan is timely for several reasons. First, while the FGDC has engaged in a number of recent strategic initiatives, including the Geospatial Line of Business and the Geospatial Platform, the NSDI Strategic Plan had not been revised since 2005. Geospatial technologies, industries, and applications have also seen tremendous growth and change over the past 8 years, resulting in a need for an updated and modernized strategy to align with and leverage these changes.

Collaborative Development of the Strategic Plan

The NSDI Strategic Plan was developed through extensive consultation with Federal agencies and with partners and stakeholders across the geospatial community, including the following:

- The National Geospatial Advisory Committee (NGAC) provided extensive input and comment (see sidebar, page 4).
- The FGDC hosted a Strategic Visioning Workshop for key Federal geospatial leaders and managers to discuss the role of the Federal geospatial community in furthering the development of the NSDI. There were 35 participants representing 22 Federal agencies and offices attending the workshop.
- The FGDC held a series of NSDI Leaders Forums to brief the leaders of key geospatial professional organizations on the development of the plan and to seek their continuing input (see sidebar, page 4).
- The FGDC also held a public comment period to seek feedback on the plan. The draft strategic plan was distributed via mail lists, communications with partners,



and a Federal Register Notice. The FGDC received 136 comments from 28 groups and individuals.

This external input was instrumental in shaping the plan and in reflecting the perspectives of the broader geospatial community. Following the outreach and public comment process, the NSDI strategic plan was approved by the FGDC Steering Committee in December 2013. The plan was also endorsed by the NGAC in December 2013.

National Geospatial Advisory Committee Input

The NGAC provided extensive input into the development of the 2014–2016 NSDI Strategic Plan. Supporting the development of the plan was the NGAC’s primary activity in 2013. Based on guidance from the FGDC, the NGAC established subcommittees to provide recommendations on the following topics:

- Shared vision of the NSDI,
- Current and future role of the Federal Government in the development of the NSDI, and
- External factors and trends in the continued development of the NSDI.

The NGAC also completed a paper, “Toward a New Strategic Vision for the National Spatial Data Infrastructure,” which summarized the committee’s input and suggestions on the development of the plan. The NGAC unanimously endorsed the NSDI Strategic Plan in December 2013 and is currently providing feedback on the implementation process and will continue to provide advice and recommendations over the next several years related to a number of the specific goals and objectives in the plan.



NGAC meeting, April 2014.

NSDI Leaders Forums

As part of the development of the NSDI Strategic Plan, the FGDC held a series of NSDI Leaders Forums to engage leaders of key geospatial organizations in the early stages of the planning process, gather initial input, and seek continuing involvement. Sessions were held in March, June, and August 2013, and in August 2014. These meetings have been very helpful in providing a forum to discuss issues concerning the development of the NSDI and as a means to develop common understanding and approaches. Participating organizations included:

- American Association of State Highway and Transportation Officials
- American Society of Photogrammetry and Remote Sensing
- Association of American Geographers
- Cartography and Geographic Information Society
- Coalition of Geospatial Organizations
- Geospatial Information and Technology Association
- International Association of Assessing Officers
- Management Association for Private Photogrammetric Surveyors
- National Alliance for Public Safety GIS Foundation
- National Association of Counties
- National Association of State Chief Information Officers
- National Emergency Number Association
- National Information Sharing Consortium
- National Society of Professional Surveyors
- National States Geographic Information Council
- Open Geospatial Consortium
- University Consortium for Geographic Information Science
- Urban and Regional Information Systems Association
- U.S. Geospatial Intelligence Foundation



NSDI Leaders Forum, March 2013.

Key Elements of the Strategic Plan

The FGDC 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

The NSDI leverages investments in people, technology, data, and procedures to create and provide the geospatial knowledge required to understand, protect, and promote our national and global interests.

The NSDI extends far beyond data. The NSDI encompasses the policies, organizational responsibilities, data, information, technologies, standards, services, and financial and human resources necessary to achieve this vision. The NSDI has become a critical vehicle for facilitating seamless data development, information sharing, and collaborative decisionmaking across multiple sectors of the economy. The following describes the vision for the future state of the NSDI.

The Desired Future State of the NSDI

- 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 the seamless integration of location-based information into broader information assets to serve the needs of government, the business community, and citizens.
- Serve as an enabling resource for discovery, access, integration, and application of location information for a growing body of users.
- Leverage shared and open standards-based services and focus on applied information for improved decisionmaking.
- Promote place-based business intelligence and smart, shared applications.
- Include a core set of information layers that interface with other nonspatial data being generated.
- Use real-time data feeds and sensor webs for improved monitoring, control, situational awareness, and decisionmaking.
- Facilitate access to and use of multi-temporal information linked to place.
- Integrate and use advanced technologies and their associated standards and best practices.
- Facilitate use of community-driven open standards with multiple implementations.

Strategic Goals

The NSDI Strategic Plan includes a set of three strategic goals that were developed through extensive consultation with Federal agencies, partners, and stakeholders across the geospatial community. The strategic goals include objectives and actions that describe how the goals will be accomplished. The following section describes the strategic goals and objectives in the plan.

NSDI Strategic Plan 2014–2016



Goal 1 – Develop Capabilities for National Shared Services

This strategic goal describes how the Federal geospatial community will work with partners to develop shared service approaches and leverage the Geospatial Platform initiative and the Administration's Federal Information Technology Shared Services Strategy. This goal includes the following objectives:

Objective 1.1. Develop geospatial interoperability reference architecture

Objective 1.2. Establish the Geospatial Platform as the Federal geospatial data, services, and applications Web-based service environment

Objective 1.3. Expand the use of cloud computing

Objective 1.4. Promote the use of geospatial multiagency acquisition vehicles for interagency and intergovernmental purchases

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

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 core geospatial datasets called National Geospatial Data Assets, and minimize duplicative investments. This goal includes the following objectives:

Objective 2.1. Advance the portfolio management process for National Geospatial Data Assets (NGDAs)

Objective 2.2. Identify potentially duplicative investments and opportunities for collaborative investments

Goal 3 – Convene Leadership of the National Geospatial Community

This strategic goal describes the actions the Federal geospatial community will take to promote institutional leadership for the development and coordination of national and international geospatial standards and policies, integrate geospatial technology into information technology (IT) management processes, contribute to the development of a legal and policy framework that supports the objectives of the NSDI, and foster collaboration across sectors. This goal includes the following objectives:

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

Objective 3.2. Convene the leadership of the geospatial and nongeospatial communities to develop public/private partnerships and shared approaches for addressing critical national issues

Objective 3.3. Raise awareness of the NSDI and its impact on critical national and international issues

Implementing the Strategic Plan

The FGDC community is working collaboratively to implement the NSDI Strategic Plan. The FGDC Executive Committee is responsible for overseeing and monitoring the implementation of the plan. Designated Federal officials, appointed from the FGDC Executive Committee, serve as the champions for each of the objectives in the

plan. The champions are responsible for overseeing the implementation of each objective and its supporting actions.

Implementation plans have been developed for each of the objectives in the strategic plan, describing how the actions will be implemented and the resources available to achieve the objectives. The project plans include:

- Tasks and timelines
- Responsible parties
- Dependencies
- Performance indicators/measures

The performance measurement approach is critical to the successful implementation of the goals and objectives described in the plan. The champions, in collaboration with the Executive Committee, will monitor performance based on review of performance measures and milestones. Updates and adjustments to the plans will be completed as needed.

The successful implementation of the NSDI Strategic Plan requires coordination with a wide range of non-Federal partners and stakeholders. The FGDC is working closely with the NGAC and other partner organizations to develop collaborative approaches to developing and maintaining the Nation's critical geospatial infrastructure and to develop strategies to ensure the sustainability and continuity of the NSDI.

The implementation of the NSDI Strategic Plan is also aligned with the implementation of the geospatial portfolio management approach described in the Supplemental Guidance to Office of Management and Budget (OMB) Circular A-16. These initiatives will lead to a more efficient and systematic approach to the development and management of National Geospatial Data Assets.

The tables in Appendix E of this report provide a summary of the FGDC's 2014 performance in implementing the strategic plan. To read the full plan go to www.fgdc.gov/nsdi/nsdi.html.

Geospatial Interoperability Reference Architecture



The Geospatial Interoperability Reference Architecture (GIRA) was developed under the auspices of the Program Manager-Information Sharing Environment (PM-ISE) and is one of the objectives in the 2014–2016 NSDI Strategic Plan (Objective 1.1. Develop geospatial interoperability reference architecture). It defines governance and an oversight framework for executive leadership to manage geospatial program and acquisition decisions and provides technical architecture guidance on the design and implementation of an interoperable geospatial solution. GIRA documents geospatial and architecture policy alignment, references authoritative practices, and provides practical guidance tools, including templates, charters, exchange agreements, baseline requirements matrices, and architecture artifacts.

The GIRA provides guidance considerations in the areas of governance, business, data, applications/services, infrastructure, standards and security, and performance measures for validating and reporting results. The GIRA is aligned with current Federal policy, principles, and practices for Enterprise Architecture and further adds to the authoritative body of knowledge of geospatial architecture documentation. It is aimed at an audience consisting of executive leaders, program managers, and solution architects across Federal, State, Tribal, territorial, and local governments and associated stakeholders.

The desired outcome of the GIRA is to increase government geospatial information sharing through interoperability and shared capabilities while reducing operational costs for governmental departments and agencies. The GIRA is expected to:

- Define governance oversight considerations that should be taken to ensure consensus and responsible program management to meet mission objectives and drive cost efficiencies.
- Serve as a baseline target reference and identify the necessary interoperability requirements within each of the key architecture elements, such as data, applications/services, infrastructure, security, standards, and performance.
- Provide best practice implementation artifacts, interoperability standards, authoritative reference documentation, performance measures, and procedural guidance.
- Provide sufficient technical details to serve as inputs for operational requirements documentation, engineering designs, contract and procurement language, and related activities associated with implementing interoperable geospatial architectures.

Fiscal Year 2014 Accomplishments

Throughout fiscal year 2014 the FGDC has been actively striving to implement the goals and objectives stated in the NSDI Strategic Plan. These initiatives and activities support the geospatial portfolio management approach described in the Supplemental Guidance to OMB Circular A-16 and lead to a more efficient and systematic approach to the development and management of core geospatial datasets called National Geospatial Data Assets.

Coordinating and Managing National Geospatial Data Assets

The National Geospatial Data Asset (NGDA) Management Plan, approved by the FGDC Steering Committee in March 2014 (www.fgdc.gov/policyandplanning/a-16/ngda-management-plan), outlines the phased milestones for implementing NGDA portfolio management, which is a key objective of the NSDI Strategic Plan. Portfolio management is defined in the Supplemental Guidance to OMB Circular A-16 (November 2010) and clarifies management elements outlined in the circular. This initiative supports Objective 2.1 of the NSDI Strategic Plan.

The Supplemental Guidance describes portfolio management “as the coordination and management of Federal geospatial data assets and investments to most efficiently support national priorities and government missions. Portfolio management applies consistent management approaches that help increase the quality of data through use of best practices and documentation in a manner that reduces duplication and cost, provides greater accessibility, and supports shared services across the Federal Government”. Through portfolio management, NGDA Datasets are organized into management units called Themes, which are managed by Theme Leads who provide cross-agency leadership and coordination for the Theme. The Datasets are managed by Dataset Managers who provide coordination and standards for the Datasets at a national level. Datasets within Themes are being made available through the Geospatial Platform (Geoplatform.gov).

The NGDA Management Plan outlines a vision to develop an NSDI Portfolio consisting of a core set of NGDAs that are sufficiently complete, current, and accessible to support the critical business and mission requirements of the Federal Government and its partners

and stakeholders. In order to realize this vision, the plan encompasses activities to implement a systematic and efficient A-16 Portfolio management process. The process aims to support and optimize investments in Federal geospatial assets for effective sharing, collaboration, and use of core geospatial data in an environment that supports efficient and effective decisionmaking.

A total of 27 actions, implemented over three fiscal years (2014–2016), are described in the Management Plan. These actions are divided into two main phases: (1) preparing the management and reporting framework for inventorying and qualifying the contents of the Federal Geospatial Portfolio and (2) executing the portfolio management process. Phase two is based on the stages outlined in the OMB Circular A-16 Supplemental Guidance, including assessing, planning, reporting, priority setting, and the budget process. Five actions, focused on establishing the framework, were completed in fiscal year 2014 (see list below) and are discussed on the next page.

Fiscal Year 2014 NGDA Management Plan Actions

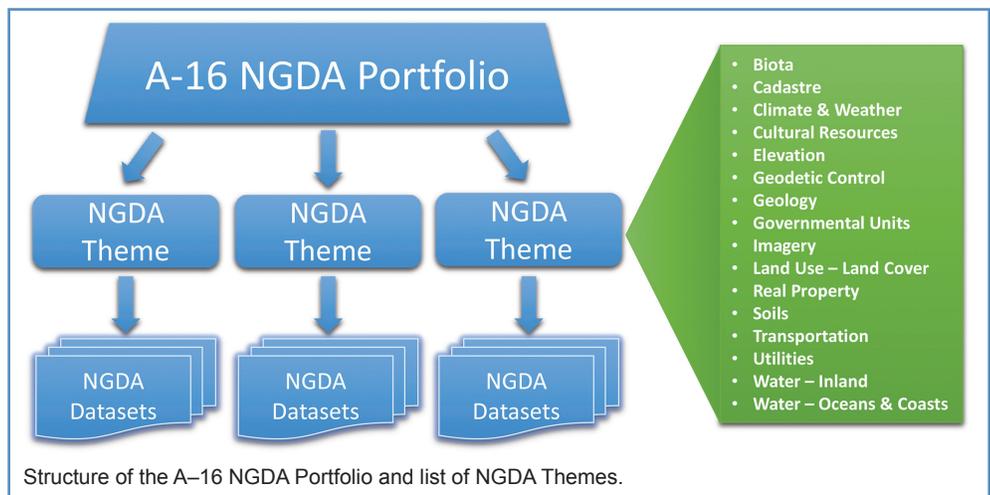
Action 1A.1: Develop a process for selecting and maintaining Executive NGDA Theme Champions, NGDA Theme Leads, and NGDA Dataset Managers

Action 1B.1: Identify initial baseline of NGDA Datasets

Action 1C.1: Activate the NGDA Theme Lead collaboration community on Geoplatform.gov

Action 2C.1: Manage and maintain content for each NGDA Theme public website on Geoplatform.gov

Action 2C.3: Establish and maintain coordination mechanism across NGDA Themes



Action 1A.1: Develop a Process for Selecting and Maintaining Executive NGDA Theme Champions, NGDA Theme Leads, and NGDA Dataset Managers

On June 6, 2014, a memo was sent to FGDC Steering Committee members requesting the identification of NGDA Executive Theme Champions, Themes Leads, and Dataset Managers. Executive Champions were designated for the NGDA Themes and Theme Leads were identified for all NGDA Themes, except for the Utilities - Terrestrial Theme which does not have a lead agency identified. Dataset managers have been identified for all NGDA Datasets. The NGDA Themes and lead agencies are outlined in Appendix C. Full information is available at www.fgdc.gov/initiatives/portfolio-management.

Identifying key personnel to fill and implement the A-16 NGDA Portfolio management roles and responsibilities supports informed decisionmaking that evaluates and adjusts activities to meet the goals for which the portfolio was established. This requires knowing the contents of the portfolio and the quality of the assets, their fitness for use, existing and required investment levels, and effectiveness.

Action 1B.1: Identify Initial Baseline of NGDA Datasets

In July 2014, 189 NGDA Datasets in the 16 NGDA Themes were identified as the fiscal year 2014/2015 baseline NGDA universe. The list of NGDA Datasets is available at www.fgdc.gov/initiatives/portfolio-management.

NGDA Dataset Criteria

To be an NGDA Dataset, a geospatial dataset must meet at least one of the following criteria:

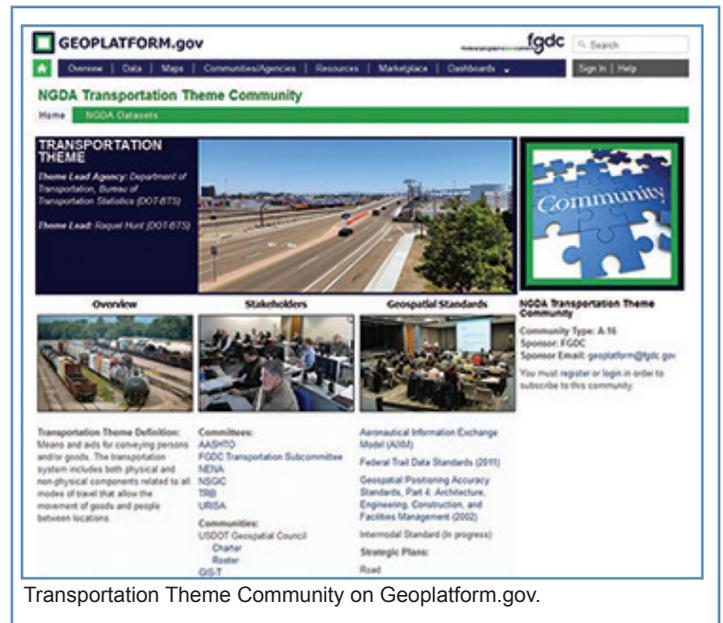
- Used by multiple agencies or with agency partners such as State, Tribal, and local governments;
- Applied to achieve Presidential priorities as expressed by OMB;
- Required to meet shared mission goals of multiple Federal agencies; or
- Expressly required by statutory mandate.

Action 1C.1: Activate the NGDA Theme Lead Collaboration Community on Geoplatform.gov

The FGDC established the NGDA Theme Lead collaboration community on the Geospatial Platform to facilitate communication within and across Themes. This is an internal website on the Geospatial Platform that provides Theme Leads and Dataset Managers access to documents and resources that will aid managing the NGDA Themes and Datasets.

Action 2C.1: Manage and Maintain Content for each NGDA Theme Public Website on Geoplatform.gov

Another key factor in the success of implementation will be the ability for Theme Leads, Dataset Managers and stewards, and other stakeholders to coordinate and work together on implementation. To help encourage and strengthen collaboration across agencies and within communities, the FGDC established the public pages for each NGDA Theme community on the Geospatial Platform. These community pages serve as space for cooperation as well as provide access to Theme-specific data and resources. This action directly supports an identified task in NSDI Strategic Plan Action 1.2.4 (see Appendix E).



Transportation Theme Community on Geoplatform.gov.

Action 2C.3: Establish and Maintain Coordination Mechanism across NGDA Themes

The FGDC Office of the Secretariat coordinates with the Theme Leads to host a monthly meeting that provides Theme Leads, Dataset Managers and stewards, and other stakeholders the opportunity to coordinate and work together on a variety of topics and issues.

To support NGDA Management Plan actions that will be completed in 2015 an interagency FGDC team has developed the NGDA Dataset Maturity Annual Assessment Survey (based on the Geospatial Data Lifecycle) and the NGDA Theme Administrative Maturity Assessment Survey. These will assist Theme Leads and Dataset Managers in assessing/evaluating the current maturity of NGDA Themes and Datasets. The results of the evaluations and baseline assessment are intended to be the basis for Theme Leads and Dataset Managers to report on the maturity of their respective NGDA Themes and Datasets within the NGDA

Portfolio as required by the OMB A–16 Supplemental Guidance. To initiate the process of assessment the Theme Leads have been providing briefings to the FGDC Steering Committee. This year, Transportation and Real Property Themes were presented at the April and June 2014, respectively, FGDC Steering Committee meetings.

NGDA Metadata Focus Group

Discussions about metadata and metadata publication issues during Theme Lead meetings and other forums led to the establishment of the NGDA Metadata Focus Group. This group, comprised of FGDC Secretariat staff and NGDA Theme Leads, has been exploring the metadata process to identify ways to improve metadata development and publishing for NGDA Datasets. The recommendations will be included to update the current metadata publishing guidance on Geoplatform.gov. The outcome will be a more consistent process applicable across the NGDA community. This activity supports Action 1B.2: Register Baseline NGDA Datasets and Services Metadata on the Geoplatform.gov/ Data.gov Catalog with appropriate NGDA and Theme “tags.” Registration in the catalog is due at the end of the first quarter of fiscal year 2015.

Progress Continues on the Geospatial Platform

The Geospatial Platform (Geoplatform.gov) is a major initiative of the FGDC and is called out in Objective 1.2 in the NSDI Strategic Plan. Geoplatform.gov features a shared technology environment that enables the publication and organization of geospatial data provided by government agencies and their trusted partners. This effort is a component of the Administration’s Information Technology (IT) Shared Services initiative and is designed to help agencies more effectively produce and share their geospatial data, services, and applications across the government and with our external partners.

The Geospatial Platform initiative is organized around four major components, as discussed below and shown in the figure on the right.

Facilitating collaboration and Web presentation of geospatial content: The Geoplatform.gov website is a place where agencies and communities of practice can come together to publish their maps, authoritative data, and other multimedia content to facilitate information sharing and collaboration.

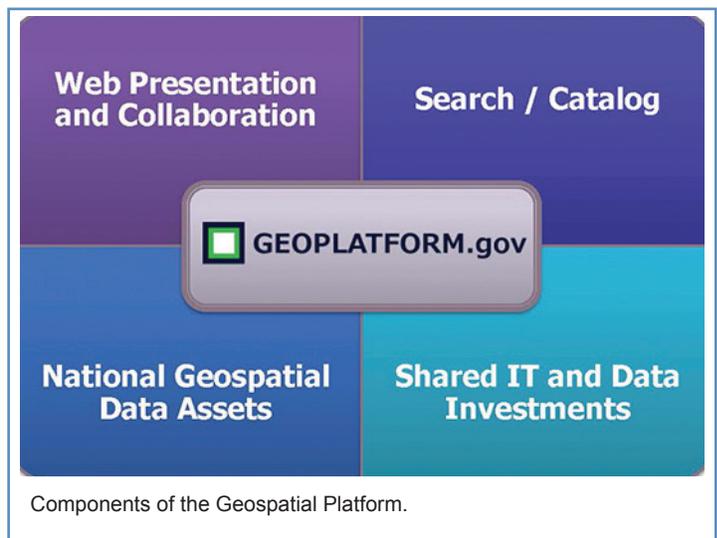
Discovery of spatial data and tools: In partnership with Data.gov, the Geoplatform.gov website features an extensive catalog of over 80,000 geospatial datasets and tools that have been contributed by FGDC agencies and our partners across the Nation.

Supporting the establishment of and reporting on National Geospatial Data Assets (NGDAs): A major component of the Geospatial Platform initiative is to provide the technology framework that enables agencies to develop and manage their NGDA datasets.

Supporting shared information technology and data investments: The shared hosting infrastructure of the Geospatial Platform allows agencies to publish their geospatial data and applications in a secure cloud-computing environment at a low cost. To facilitate partnerships in data acquisition, the Geospatial Platform Marketplace (see callout box on page 11) allows Federal agencies to post information about planned data acquisitions to provide an opportunity to bring together partners to share resources for meeting common needs.

2014 has been another busy year with the release of many new features and capabilities on the Geospatial Platform that support identified objectives in the NSDI Strategic Plan. Some of the highlights of the work include:

- Establishment of Geoplatform.gov Communities for each of the A–16 Themes to support the implementation of the Supplemental Guidance to OMB Circular A–16. Also established was the private Theme Lead Community which enables NGDA Theme Leads and NGDA Dataset Managers to access the suite of geospatial data, tools, and services to support development and management for NGDAs.
- Expansion of the geospatial hosting services to allow more of our partners to develop and publish shared data and applications.
- Implementation of “self-service” capabilities for the management of Geoplatform.gov Communities.



- Implementation of the Open Geospatial Consortium's Catalog Service for the Web (OGC CSW) interface on the Data.gov and Geoplatform.gov data catalogs.
- Support for the President's Climate Data Initiative through the publication of new data and the establishment of a Climate resource area on the Geoplatform.gov website.
- Provided key inputs to components of the Geospatial Interoperability Reference Architecture (GIRA) that describe the role that the Geospatial Platform plays in national information sharing.
- In support of the Department of Homeland Security (DHS) and the department's mission partners, the Geospatial Platform's Homeland Security Geospatial Concept of Operations (GeoCONOPS) community was established (see callout box on page 13).

Expanding Cloud Computing

A central, enabling objective to achieving the desired future state of the NSDI is the expansion of cloud computing. While the NSDI Strategic Plan (Objective 1.3) cites cost savings as an anticipated outcome, the broader value for greater use of the cloud comes with its ability to provide central access to spatial datasets that are reusable, readily available, and able to be leveraged for use with other datasets and (most importantly) a multitude of other potential consumers of that data. Steady and continual progress is underway to put into place a set of robust cloud-based services that provide agencies and other NSDI consumers a way to use, share, and manage their spatial assets efficiently and effectively. Fiscal year 2014 cloud-focused Geoplatform.gov accomplishments

Planning Investments using the Geospatial Platform Marketplace

On September 25, 2013, the FGDC Chair issued guidance for identifying planned investments using the Geospatial Platform. The guidance provides important information regarding the processes Federal agencies will use to utilize the Marketplace capability of the Geospatial Platform to help avoid duplicative creation and acquisition of geospatial data. The guidance was developed by an interagency consortium of FGDC partners, and the policy and procedures can be adapted and customized specifically to agency requirements for utilizing the Marketplace. The Marketplace is important to meeting requirements described in OMB Circular A-16 Revised and Executive Order 12906 (www.whitehouse.gov/omb/circulars_a016_rev/ and www.archives.gov/federal-register/executive-orders/pdf/12906.pdf, respectively) and an important action identified in the NSDI Strategic Plan (www.fgdc.gov/nsdi-plan/index_html).

The Geospatial Platform Marketplace can be accessed via the "Marketplace" tab on the Geospatial Platform website at www.geoplatform.gov. The site provides a listing of datasets that are planned for acquisition by one or more of the FGDC member agencies. The listing can be used to determine whether a potential partner is already trying to acquire data where there is an interest. Future functionality of the Marketplace will be expanded to help Federal agencies and their partners meet their geospatial data needs in the most timely and cost-effective manner possible.

The screenshot shows the Geospatial Platform Marketplace interface. At the top, there is a navigation bar with links for Overview, Data, Maps, Communities/Agencies, Resources, Marketplace, and Dashboards. A search bar is located in the top right corner. Below the navigation bar, there is a 'Filter By Location' section with a map of North America and a search input field. The main content area is titled 'Geospatial Platform Marketplace' and contains a search bar and a 'Footprints' button. Below this, it displays '57 datasets found' and a dropdown menu for 'Order by: Popular'. The search results are filtered by 'Dataset Type: geospatial' and 'Status: planned'. Two results are visible, both from the US Geological Survey, Department of the Interior, related to the 3DEP initiative. Each result includes a title, a brief description, and a 'Federal' tag.

Example of search result using the Geospatial Platform Marketplace.

included (1) expansion of the geospatial hosting services to allow more of our partners to develop and publish shared data and applications, (2) implementation of “self-service” capabilities for the management of Geoplatform.gov Communities, and (3) implementation of the Open Geospatial Consortium’s Catalog Service for the Web (OGC CSW) interface on the Data.gov and Geoplatform.gov data catalogs.

Collaboration with the National Geospatial Advisory Committee

The National Geospatial Advisory Committee (NGAC) is a Federal advisory committee sponsored by the Department of the Interior to provide external advice and recommendations to the member agencies of the FGDC. The NGAC includes a balanced membership of 29 committee members representing a variety of organizations involved in geospatial issues, including all levels of government, the private sector, nonprofit organizations, and academia. The NGAC meets three to four times per year and has established subcommittees that conduct research and develop draft products between committee meetings. Over the past year, the NGAC has analyzed and provided recommendations on a number of key geospatial policy issues. Highlights of the NGAC’s 2014 activities include the following:

- **NSDI Strategic Plan.** The NGAC provided extensive input and comment during the development of the plan. In December 2013, the NGAC unanimously approved a resolution endorsing the NSDI Strategic Plan. After the plan was formally adopted by the FGDC Steering Committee in December 2013, the NGAC has continued to provide valuable input and feedback on implementation of the plan.
- **Geospatial Platform.** The NGAC provided extensive input into the conceptualization, development, and



Members of the National Geospatial Advisory Committee, April 2014.

implementation of the Geospatial Platform initiative since its inception. During 2014, the NGAC reviewed and provided real-time feedback on the latest revisions and enhancements to the Geospatial Platform.

- **Landsat.** The NGAC adopted three papers on the Landsat program: (1) NGAC Landsat Product Improvement Paper, (2) NGAC Landsat Cloud Computing Paper, and (3) NGAC Comments on NRC Landsat Report.
- **Geospatial Privacy.** The NGAC reviewed and provided comments on recent Administration reports related to big data and privacy. The NGAC paper summarized the potential impacts on the geospatial community of big data and privacy issues addressed in the Administration reports.
- **Geospatial Education and Workforce.** The FGDC and the NGAC provided input to the Department of Labor (DOL) on the next round of revisions to the DOL Standard Occupational Classifications (SOCs). The input included recommendations to revise or establish several SOC codes related to geospatial and surveying occupations.



Dr. Carolyn Merry

In June 2014 the National Geospatial Advisory Committee unexpectedly lost one of its members when Dr. Carolyn Merry died in a car accident. She was appointed to the NGAC in 2013 and served as Chair of the Education and Workforce Subcommittee. Dr. Merry recently retired from her position as Professor and Chair of the Department of Civil, Environmental and Geodetic Engineering at The Ohio State University. She began her career as a Research Physical Scientist and Geologist with the U.S. Army Corps of Engineers. She was active in many professional organizations. Dr. Merry served on the Mapping Science Committee of the National Academy of Sciences (2009–2013) and was also the 2012 Chair of the Coalition of Geospatial Organizations (COGO). She is a Past President of the American Society of Photogrammetry and Remote Sensing (ASPRS), the University

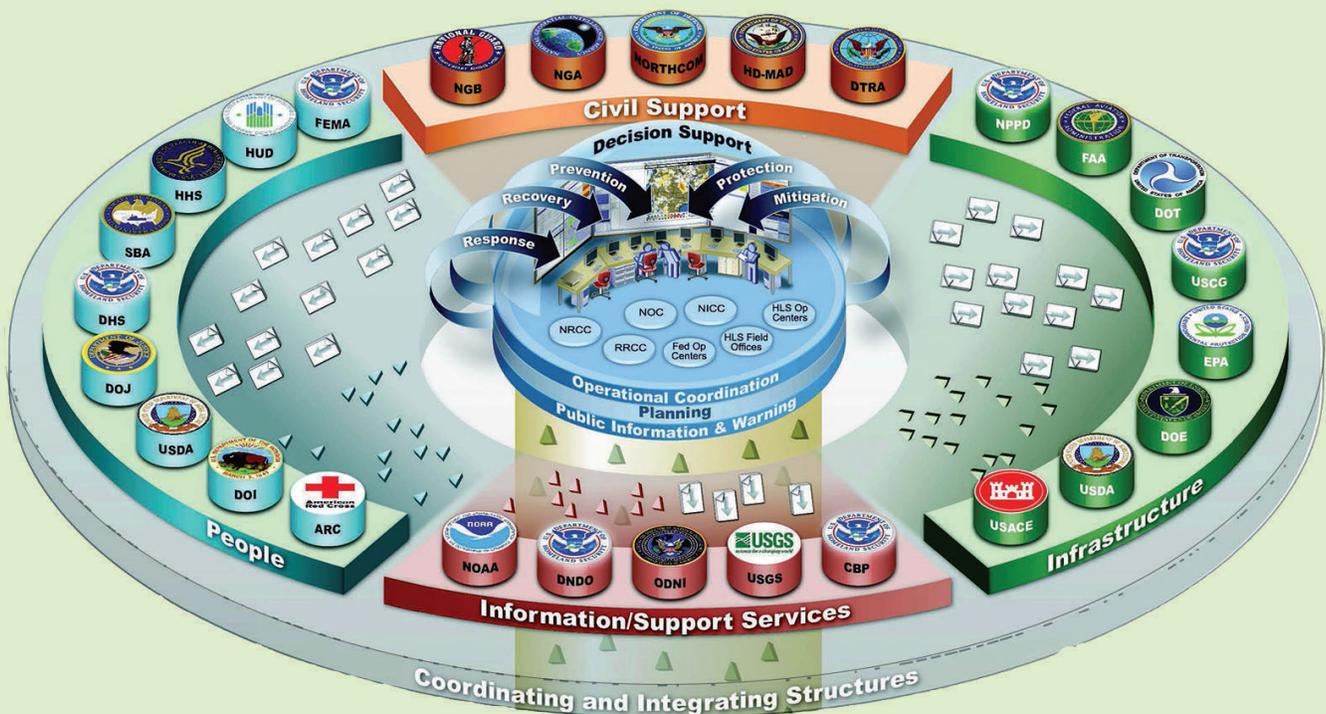
Consortium for Geographic Information Science (UCGIS), and the Central Ohio Section of the American Society of Civil Engineers (ASCE). Dr. Merry was a distinguished leader in the geospatial community and her expertise and knowledge will be greatly missed by her colleagues.

Release of the Homeland Security GeoCONOPS Community

Working closely with the Department of Homeland Security's Geospatial Management Office, the Geospatial Platform has released the new online version of the Homeland Security (HLS) Geospatial Concept of Operations (GeoCONOPS), www.geoplatform.gov/geoconops-home.

The HLS GeoCONOPS is a strategic roadmap in support of Homeland Security and Homeland Defense to understand and improve the coordination of geospatial activities across the Nation from Federal to State and local governments, the private sector and community organizations, academia, the research and development industry, and citizens. The intended audience is the entire geospatial community within the Homeland Security Enterprise that supports the missions of the Federal Government under The Stafford Act, the National Response Framework, and Presidential Policy Directives (PPD-8) and (PPD-21). Benefits of the HLS GeoCONOPS include:

- A geospatial mission blueprint of the resources and capabilities available for supporting the Homeland Security Enterprise,
- Identification of points of coordination and collaboration,
- Documentation of authoritative geospatial data sources,
- Description of best practices, and
- Identification of technical capabilities.



The GeoCONOPS community.

- **National Address Database.** The NGAC developed a set of use cases documenting the value and utility of the development of a National Address Database. The NGAC worked closely with representatives of the U.S. Census Bureau and other agencies to provide continuing feedback on the development of a National Address Database.
- **Review of Geospatial Policy Documents.** In 2014, NGAC members provided feedback and comments on the National Geospatial Data Asset (NGDA) Management Plan and the Geospatial Interoperability Reference Architecture (GIRA).

Standards Moving Forward

The FGDC continued its leadership and participation in development and coordination of national and international standards applicable to the geospatial community that helps support Objective 3.1 of the NSDI Strategic Plan. The FGDC endorsed two standards in 2014: the Real Property Asset Data Standard and the OpenGIS Web Feature Service 2.0 Interface Standard. Additional standards developments in fiscal year 2014 included the endorsement of Open Geospatial Consortium (OGC) GeoPackage 1.0 and OGC Sensor Web Enablement (SWE) 2.0 by the OGC; development of Geopolitical Entities, Names, and Codes (GENC) Standard Edition 2 by the National Geospatial-Intelligence Agency, and execution of Interoperability Assessment Exercises by the USGS.

Real Property Asset Data Standard (RPADS) supports the Real Property NGDA Theme. Its objectives are to (1) establish fundamental definitions for real property assets (RPAs); (2) develop a minimum set of attributes describing RPAs, with standardized attribute values where appropriate; (3) provide minimum geospatial standards for the collection of geospatial data on RPAs; and (4) minimize the duplication of data collection and maintenance on Federal RPA information. RPAs are foundational data essential to Federal asset accountability and will provide the basis for support of Federal real property management, homeland security, emergency response, high-performance green buildings management, and other Federal Government initiatives. The RPADS includes the minimal set of attributes needed to locate RPAs on a map and identify what the RPA is. While much of the attribute data inclusive to the standard is not geospatial in nature, the standard does define the geospatial context of RPAs.

OpenGIS Web Feature Service 2.0 Interface Standard (WFS 2.0) is applicable to the development of systems that have requirements to access or distribute geospatial feature data over a network. A Web Feature Service (WFS) request consists of a description of query or data

transformation operations that are to be applied to one or more features. The request is generated on the client side and posted to a WFS using HTTP. The Web feature server then reads the request and returns a set of results that conforms to the OpenGIS Geography Markup Language (GML) Implementation Specification. Web Feature Services offers direct fine-grained access to geographic information at the feature and feature property level. They allow clients to retrieve or modify only the data they are seeking, rather than retrieving an entire file. The FGDC previously endorsed WFS 1.1 and will retain it as a legacy standard. The Open Geospatial Consortium identifies nearly 40 product implementations of WFS 2.0. A search on “WFS” on Geoplatform.gov identified 2,564 datasets published as a Web Feature Service.

Open Geospatial Consortium (OGC) GeoPackage 1.0, which was adopted by the OGC as an official standard on February 14, 2014, enables customers to access geospatial intelligence data in a simple, open format tailored to handheld mobile devices, even in environments where there is limited or no connectivity. While initially developed with the military as the primary user, GeoPackage (www.geopackage.org) has demonstrated capabilities to support anyone from first responders to hikers going into backcountry where Internet connectivity does not exist. A GeoPackage file is a single SQLite (sqlite.org) container for the storage, dissemination, and direct use of vector features, tile matrix sets, and metadata on a variety of platforms, including Android and IOS platforms.

The OGC adopted the last of the **OGC Sensor Web Enablement (SWE) 2.0** suite of standards as an official OGC standard in 2014. The standards provide a set of interoperability interfaces and metadata encodings that enable real-time integration of heterogeneous sensor webs into the information infrastructure. Developers can use these specifications in creating applications, platforms, and products involving Web-connected devices such as flood gauges, air pollution monitors, stress gauges on bridges, mobile heart monitors, Webcams, and robots as well as space and airborne earth imaging devices.

Geopolitical Entities, Names, and Codes (GENC) Standard Edition 2 expands on Edition 1 with the formal establishment of administrative subdivision code content in the GENC Registry. The GENC Standard specifies a U.S. Government profile of ISO 3166, Codes for the representation of names of countries and their subdivisions. It addresses unique U.S. Government requirements for complying with U.S. national sovereignty recognition policy restrictions; identification and recognition of geopolitical entities not included in ISO 3166; and use of names of countries and administrative subdivisions that have been approved by the U.S. Board on Geographic Names.

With the goal to improve user experience with USGS data services the USGS began to execute the **Interoperability Assessment Exercises**. The exercises will evaluate the current tools, service instances, standard services, and best practices and provide recommendations that will guide developers of tools and standards to better serve the needs for the communities of use.

Metadata Program Helps Build the NSDI

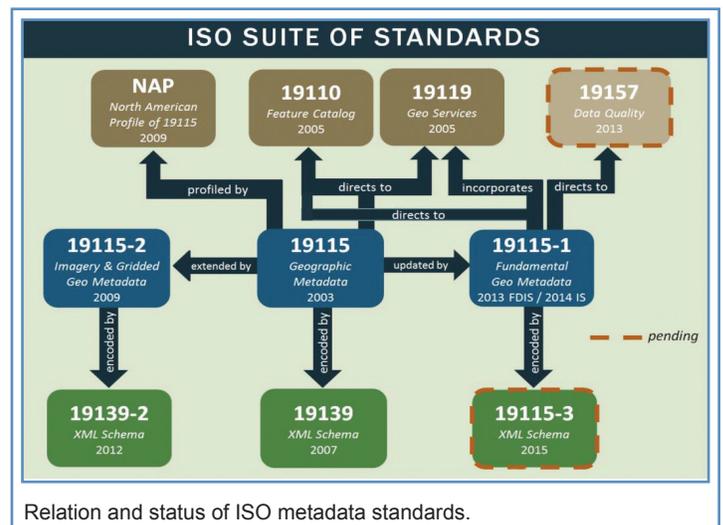
The FGDC’s continued support of the Geospatial Metadata Program helps address Objective 3.1 of the NSDI Strategic Plan. In 2014, the program was called upon to serve as a key member of several national initiatives, such as the Geospatial Platform (Geoplatform.gov) and the National Geospatial Data Asset (NGDA) Management Plan. Metadata was recognized by both initiatives as a means to enhance the management, discoverability, and usability of geospatial data.

For the Geoplatform.gov, the Metadata Program team was tasked to crosswalk the data documentation requirements of the ISO metadata standard, the FGDC Content Standard for Digital Geospatial Metadata (CSDGM), Project Open Data, and the Data.gov CKAN (Comprehensive Knowledge Archive Network) portal application. The crosswalk facilitated the creation of metadata records that could support multiple program requirements and provided an opportunity to identify challenges in meeting those requirements. As a result, specific metadata content and format guidance was developed by the team to aid data developers in creating robust, operational metadata that better serve Federal, national, and individual data-management efforts.

Metadata is fundamental to the successful implementation of the A–16 Supplemental Guidance through the National Geospatial Data Asset (NGDA) Management Plan. In support of the plan, an NGDA Metadata Focus Group was established to facilitate and update metadata guidance to support NGDA Dataset publication, including the population of key metadata elements that support NDGA reporting, data life cycle management, and the assessment of geospatial maturity. Members include FGDC Secretariat staff as well as several NGDA Theme Leads from the agencies are outlining specific content and format recommendations to facilitate the discovery of NDGA Datasets and the creation of an NGDA Theme community within the Geospatial Platform.

The Metadata Program’s education and outreach efforts continue to expand as community interest in ISO metadata implementation has increased. These activities include:

- **ISO Metadata Implementation Forum.** In January 2014, the FGDC Secretariat launched the ISO Metadata Implementation Forum, which was a direct result of recommendations that came out of the 2013 ISO Metadata Implementation Webinar. The purpose of the Forum is for the FGDC Metadata Working Group and other interested participants to present and discuss ISO geospatial metadata standards implementation efforts through shared experiences, strategies, topics, and resources. Topics are selected by participants and have included why to implement ISO standards, ISO tools and applications, as well as experiences with the workflow model. Community members present their perspectives and experiences on a monthly schedule and all sessions are recorded and available at www.fgdc.gov/metadata/events/iso-geospatial-metadata-implementation-forum/index_html.
- **ISO Geospatial Metadata Editors Registry.** The ISO Geospatial Metadata Editors Registry was updated and simplified to highlight the specific selection criteria specified by the metadata community such as metadata standards supported, user interface, operating platform, proprietary nature, Extensible Markup Language (XML) capabilities, validation, and import/export operations. The review also provides editor developers with text options in order to more fully describe support features, edit operations, customization, metadata management, and publication capabilities. In addition, the Registry is now a Web application that enables metadata editor software application developers and individuals submitting metadata editor reviews to enter and update information directly online. The information is reviewed by the FGDC metadata program staff prior to publication. The Metadata Editors Registry is fully developed and currently in beta testing pending approval for compliance with the Paperwork Reduction Act.



Relation and status of ISO metadata standards.

- **FGDC Geospatial Metadata Website.** The metadata website redesign has been implemented, internally, to test operations and content presentation. The "learning-based" redesign enables the site to focus on presenting information in a logical sequence that is built upon the FGDC Metadata Curriculum and supports the exploration of metadata topics. Strong emphasis is placed on ISO Metadata implementation. FGDC metadata training materials are incorporated into the site design as well as links to available resources.

Promoting the NSDI via the Cooperative Agreements Program

The FGDC has sponsored the Cooperative Agreements Program (CAP) to encourage and enable local, regional, State, and academic geospatial data communities to build the NSDI since 1994. The geospatial community not only benefited financially from NSDI cooperative agreements but more importantly validated organizational geospatial initiatives, which opened new opportunities. This year saw the conclusion of 18 CAP projects.

Training and outreach continued to be valued outcomes of the program. The Sonoma Ecology Center's metadata training reached a wide range organizations and individuals in California. One project investigated the transition from FGDC Content Standard for Digital Geospatial Metadata (CSDGM) to internationally accepted geospatial metadata standards (ISO 19115). Other FGDC-endorsed standards promoted this year were the National Vegetation Classification (NVC) Standard and the Wetland Mapping Standard. The standard for Cadastral Data Content benefited from the development of a draft implementation model in Extensible Markup Language/Geographic Markup Language (XML/GML) for parcel data. Oregon held several successful outreach efforts to introduce the benefits and capabilities of sharing data catalogs using open standards and developed training materials available at www.coastalmarinedata.net/resources.

As part of the Fifty States Initiative, three projects were completed in Maine, Maryland, and Nevada to advance each State's geospatial business plans. Maine's orthoimagery business plan implementation resulted in greater community involvement, especially in small communities and rural counties. Maryland's plan focused on activities necessary to support the creation, expansion, and widespread distribution of statewide parcel data. Nevada completed business plans for statewide parcel data and enhanced elevation data, which both point out the need for a single organization to set priorities for geospatial data at a statewide level and coordinate strategies for data acquisition and dissemination.

Iowa, Louisiana, Maryland, and Ohio increased participation in the National States Geographic Information Council's (NSGIC) GIS Inventory System (gisinventory.net), adding metadata containing links to standards-compliant data or data services that support Federal Geoplatform.gov activities. A project completed by the California Emergency Management Agency promoted the adoption of Unified Incident Command Decision Support (UICDS) middleware to achieve geospatial data sharing and interoperability in the emergency management environment.

And finally, three Geospatial Platform Cloud Service Testbed projects were completed. These projects provided valuable information about the deployment costs and performance characteristics of secure geospatial cloud services at the State and Tribal levels. For more information on the NSDI CAP, please see www.fgdc.gov/grants.

International Activities

The FGDC continues to support international efforts through the FGDC Global Geospatial Information Management Working Group, the intergovernmental Group on Earth Observations, and the Global Spatial Data Infrastructure (GSDI) Association. These organizations are underpinned by the adoption of common techniques and standards to promote interoperability worldwide and thereby facilitate access to geospatial data and services. These efforts help advance NSDI Strategic Plan Objective 3.3, which includes raising awareness of the NSDI and its impact on international issues.

The United Nations Global Geospatial Information Management Working Group (UN-GGIM) is a United Nations intergovernmental body that brings together global level experts from all member States and international geospatial organizations in order to play a leading role in setting the agenda for the development of global geospatial information management. The committee addresses key global challenges, including climate change, disaster management, peace and security, and environmental quality. Support of information about the changing roles of governments in relation to the growing capability of the private sector to develop geospatial information and location-based services is another key goal of the UN-GGIM. Additionally, overcoming legal and institutional barriers based on principles, policies, methods, and mechanisms for standardization of rapidly evolving technologies, and interoperability and sharing of geospatial data and services constitutes another major focus for the group.

Members of the FGDC GGIM Working Group have identified geospatial information technologies, resources, standards,

best practices, and data available within the United States government. Members also contribute to the creation of effective strategies on how to build and strengthen national capacity. In 2014, members of the working group represented the United States at the International Workshop on Integrating Geospatial and Statistical Information in Beijing, China, the United Nations Global Forum on the Integration of Statistical and Geospatial Information in New York, and the Fourth Session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) in New York.



The U.S. delegation to the Fourth Session of the United Nations Committee of Experts on Global Geospatial Information Management. Jerry Johnston (DOI), Tim Trainor (U.S. Census Bureau), John Nyberg (NOAA), Marzio Dellagnello (NGA), Chuck Boyer (NGA).

The FGDC actively participated in the U.S. Group on Earth Observations (USGEO), a Subcommittee of the Committee of the Environment, Natural Resources and Sustainability (CENRS) with representatives from sixteen U.S. Federal agencies and the Executive Office of the President. The USGEO continued to seek opportunities to advance the use of Earth observations by agencies and their stakeholders. Two key activities to note are (1) the completion of the National Plan for Civil Earth Observations, which establishes priorities and supporting actions for advancing civil Earth observations capabilities, and (2) collaborating with the international Group on Earth Observations (GEO) in participating in the 2014 GEO Geneva Ministerial Summit and the exhibition for the GEO Portal demonstration.

The GSDI Association receives support from the FGDC in its efforts to increase international collaboration on spatial data infrastructure (SDI) development. This year with resources from the Geoconnections Program of Natural Resources Canada, the FGDC, and the GISCorps of The Urban and Regional Information Systems Association (URISA), the GSDI Association was able to provide resources to several projects in support of national or

sub-national activities that foster partnerships, develop in-country technical capacity, improve data compatibility and access, and increase political support for SDI. For more information see www.gsdi.org/sic1.

Finally, the FGDC was represented at the 2014 Geospatial World Forum in May 2014 by Ivan DeLoatch, FGDC Executive Director. The forum was held at Centre International de Conférences Genève, Geneva, Switzerland. The Geospatial World Forum has gained a reputation for being a not-to-be-missed conference for professionals engaged in the geospatial sector and its application domain. It is a premium environment for the geospatial community and offers opportunities for learning, sharing, connecting, networking, branding, and positioning with senior decision makers associated with the geospatial world. Mr. DeLoatch shared the results of the U.S. NSDI Strategic Plan development and how it is supporting the U.S. Open Data Policy and National Geospatial Platform.



Ivan DeLoatch, FGDC Executive Director, discussing the NSDI Strategic Plan at the 2014 Geospatial World Forum.

Goals for Fiscal Year 2015

NGDA Management Plan

The coming year will see the continuation of activities to meet the objectives and actions outlined in the NGDA Management Plan (www.fgdc.gov/policyandplanning/a-16/ngda-management-plan) and will support meeting the objectives in the NSDI Strategic Plan. The actions to be completed in fiscal year 2015 are listed below and will take the combined efforts of the FGDC Steering Committee, NGDA Executive Theme Champions, NGDA Theme Leads, NGDA Dataset Managers, FGDC Office of the Secretariat, and the Geoplatform.gov Team.

Action 1B.2: Register Baseline NGDA Datasets and Services Metadata on the Geoplatform.gov/Data.gov Catalog with Appropriate NGDA and Theme “tags”

Action 1B.3: Develop an Approval Process for Nomination/Removal of NGDA Datasets within the A–16 NGDA Portfolio

Action 1D.2: Develop NGDA Dataset Report Template and Tool

Action 1D.4: Develop Support Theme Strategic Plan Template and Tool

Action 1D.5: Develop Annual Theme Report Template and Tool

Action 1E.1: Review/Revise the Definition of Geospatial Investment and Budget Reporting Codes

Action 2A.1: Complete and Submit NGDA Dataset Maturity Annual Assessment

Action 2A.2: Complete and Submit NGDA Theme Administrative Maturity Annual Assessment

Action 2D.1: Complete and Submit Annual NGDA Dataset Report

Action 2E.1: Develop the A–16 NGDA Portfolio-level Processes, Reporting Requirements, and Roles and Responsibility Requirements for Federal Geospatial Portfolio Management

Challenges: Obtaining continued participation from Federal partner agencies for the many concurrent activities, developing meaningful and consistent reporting for NGDA Themes and Datasets, and ensuring adequate resources to implement the portfolio and its supporting tools. If these challenges are overcome, core Federal geospatial assets will be available for effective sharing, collaboration, and use of core geospatial data to support efficient and effective decisionmaking.

Geospatial Platform Initiative

In fiscal year 2015, there will be continued development and advancement of the Geospatial Platform in a number of ways. The Geospatial Platform initiative directly supports a number of the identified goals and actions of the NSDI Strategic Plan, and several milestones will be reached in 2015 as the community works to advance the NSDI. Some of the most significant areas of effort will include:

- Expanding the use of cloud computing for the benefit of FGDC agencies.
- Implementing a “Data as a Service” offering within the Geospatial Platform Marketplace.
- Expansion of Geoplatform.gov Portfolio Management support and reporting capabilities.

Challenges: Technological advancements are important to the overall success of the Geospatial Platform; however, a true measure of success in this effort will be the volume and quality of nationally significant data that are made available through Geoplatform.gov.

National Geospatial Advisory Committee

- The NGAC will provide ongoing review, feedback, and recommendations regarding the development and implementation of key issues and initiatives, including implementation of the NSDI Strategic Plan, the continued development of the Geospatial Platform, development of portfolio management approaches, geolocation privacy issues, and partnerships with other levels of government.
- The NGAC will provide support to the FGDC in addressing important components of the 2014–2016 NSDI Strategic Plan, including the objective to “Raise awareness of the NSDI and its impact on critical national issues.”
- The FGDC will review and respond to advice and recommendations from the NGAC.
- The FGDC will initiate the next cycle of NGAC nominations and appointments in fiscal year 2015.

Challenges: The NGAC will face continuing challenges in developing effective advice and recommendations that reflect a consensus view across multiple sectors and perspectives on key issues such as the implementation of

the NSDI Strategic Plan, geospatial portfolio management, and the Geospatial Platform, as well as emerging issues such as geolocation privacy.

Standards

- Continue to support NSDI initiatives such as Geoplatform.gov, NGDA Management Plan, and implementation of NSDI Strategic Plan Objective 3.1.

Challenges: The main challenge facing the FGDC standards program is getting active support from NGDA Dataset Managers, Theme Leads, Executive Theme Champions, and Theme Lead Agencies, and the FGDC Subcommittees/Working Groups.

Geospatial Metadata

- Continue involvement with NSDI implementation initiatives such as the NSDI Strategic Plan, Geospatial Platform (Geoplatform.gov) and A-16 Supplemental Guidance – National Geospatial Data Asset Management Plan implementation.
- Continue ISO Metadata Implementation Forum series.
- Publish and manage content for the FGDC Metadata Website.
- Publish and manage the ISO Geospatial Metadata Editors Registry.
- Provide technical guidance and support for ISO Geospatial Metadata implementation, particularly with respect to ISO 19115-1 released in 2014.

Challenges: The greatest challenge that the FGDC metadata program faces is effectively addressing the wide range of metadata issues associated with a growing number of NSDI-related initiatives and current Federal policies and directives. In addition, the technical expertise and geospatial metadata investments of NSDI stakeholders creates challenges for ISO metadata implementation, especially with the new ISO 19115-1 release and the ability to develop resources that address the needs of multiple programs and communities.

International

- FGDC members of the United Nations Global Geospatial Information Management Working Group will continue representing the United States on UN-GGIM activities and will coordinate among Federal agencies participating on the FGDC GGIM Working Group.

- For the Group on Earth Observations/Global Earth Observation System of Systems (GEO/GEOSS), a continuing focus is on simplifying discovery and access to quality Earth observation data and services. The FGDC will participate and continue to support the USGEO.

FGDC Subcommittees and Working Group Reports

The FGDC is supported by data theme subcommittees and crosscutting working groups to address geospatial issues for the specific data types. FGDC subcommittees and working groups are comprised of representatives from Federal agencies and FGDC recognized stakeholder groups who share a common interest. Each subcommittee focuses on issues that pertain to coordination and standards associated with a geospatial data theme with regard to data collection, access, exchange, and applications using those data. Working groups address activities that cross-cut or affect several data theme subcommittees. Further information is available at www.fgdc.gov/participation/working-groups-subcommittees.

Many of the FGDC subcommittees actively assist in the implementation of the NGDA Management Plan and, in fact, many members of the subcommittees are designated as NGDA Theme Leads or NGDA Dataset Managers. Members of the subcommittees have reviewed the NGDA Dataset baseline inventory and updated and (or) registered metadata for harvesting by Data.gov/Geoplatform.gov. These actions increase opportunities for discovery, access, and shared use of the NGDA Datasets. The subcommittees' members have provided input on the proposed NGDA Dataset maturity assessment, which is critical to providing relevant and meaningful information for decisionmaking by senior executives.

Cadastral Subcommittee

The Cadastral Subcommittee develops and implements plans to coordinate cadastral data-related activities among Federal, State, Tribal, and local governments and the private sector. As examples, the subcommittee works with the wildland fire community to identify sources of land parcel data, standardize available data, and build sustainable operational procedures to provide land parcel data for wildland fire applications in coordination with States. The subcommittee works with public domain States—those States using the Public Land Survey System—to standardize the best available statewide data in the State, to identify the optimum maintenance work flow, and to publish a maintainable standardized dataset. Highlights for the subcommittee include:

- **Indian Buy-Back Program.** The Indian Buy-Back Program is an outcome from the *Cobell v. Salazar* lawsuit and is a program to support the reconsolidation of the fractionated interests on Indian Lands. There

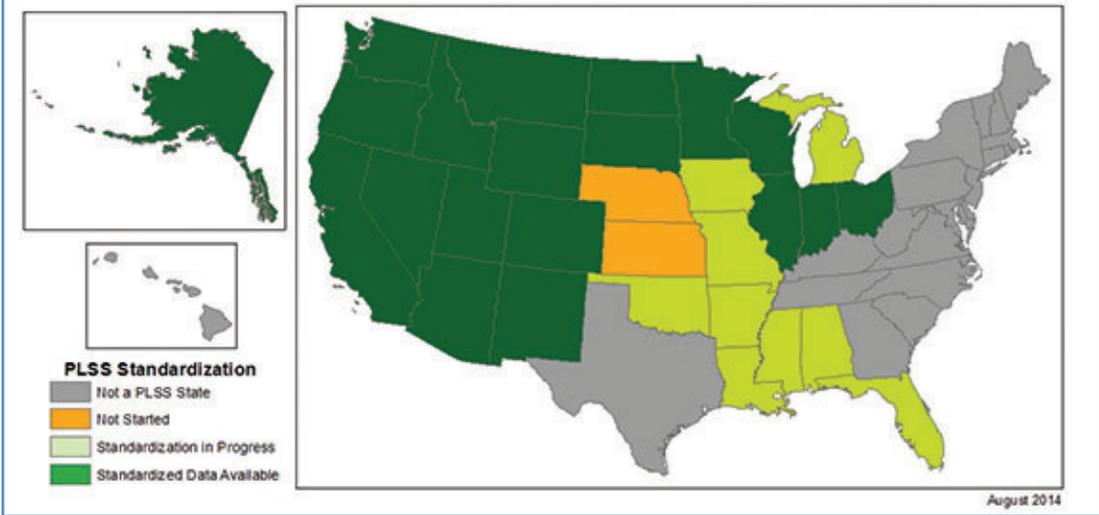
are over 300 Indian reservations in the United States and of these, 153 were identified as candidates for the program. The Bureau of Land Management (BLM) has completed the records improvement and land descriptions for over 500,000 Indian parcels on 56 of the 153 reservations. This work is ongoing and included updating the standardized Public Land Survey System data (PLSS Cadastral National Spatial Data Infrastructure (CadNSDI)) in areas where improved positional information is completed as part of the Buy-Back Program.

- **Federal Rights and Interests.** The Cadastral Subcommittee initiated the review of Federal rights and interests by forming a multiagency working group. Information on the working group can be found at the subcommittee's outreach website, nationalcad.org/.
- **Standardized PLSS – Nationwide Status.** The Cadastral Subcommittee continues to support the BLM efforts to develop standardized PLSS CadNSDI data for all 30 public domain States. In 2014, the Version 2 PLSS CadNSDI dataset was updated and available data was expanded. The subcommittee's role has been to provide standardization review as well as coordination for the publication of State data. The goal is that where practical, the State geospatial portals will publish the standardized PLSS CadNSDI with BLM and other Federal agencies, providing links to the State-hosted data. In many of the western States, because of the prevalence of federally managed lands, the BLM is expected to be the maintainer of this dataset. One of the significant developments in 2014 was the State of Montana assuming the maintenance and publishing for Montana's PLSS CadNSDI. BLM provided seed funding for this work and participated with the State of Montana in this effort.
- **Digital Parcel Map Data and State Stewardship.** The Cadastral Subcommittee continues to support the advancement of State stewardship for the assembling, aggregation, standardization, and publishing of locally sourced parcel data. Through the wildland fire support efforts it is very apparent that State-hosted standardized accessible parcel data is essential to support many Federal, State, and local programs.

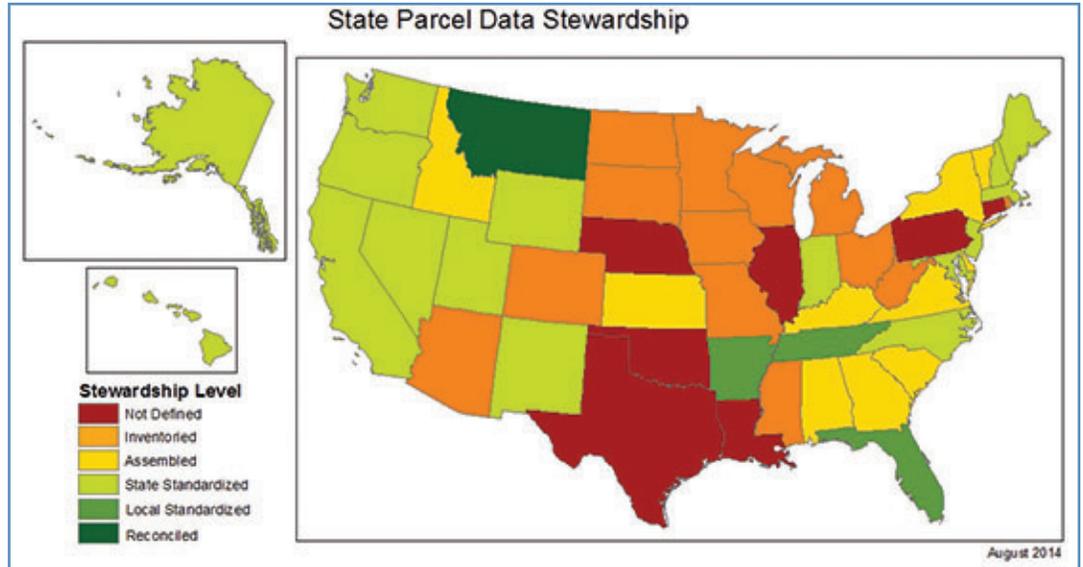
Cultural Resources Subcommittee

The purpose of Cultural Resources Subcommittee is to identify, prioritize, implement, coordinate, and oversee the strategies and tasks required to support the national

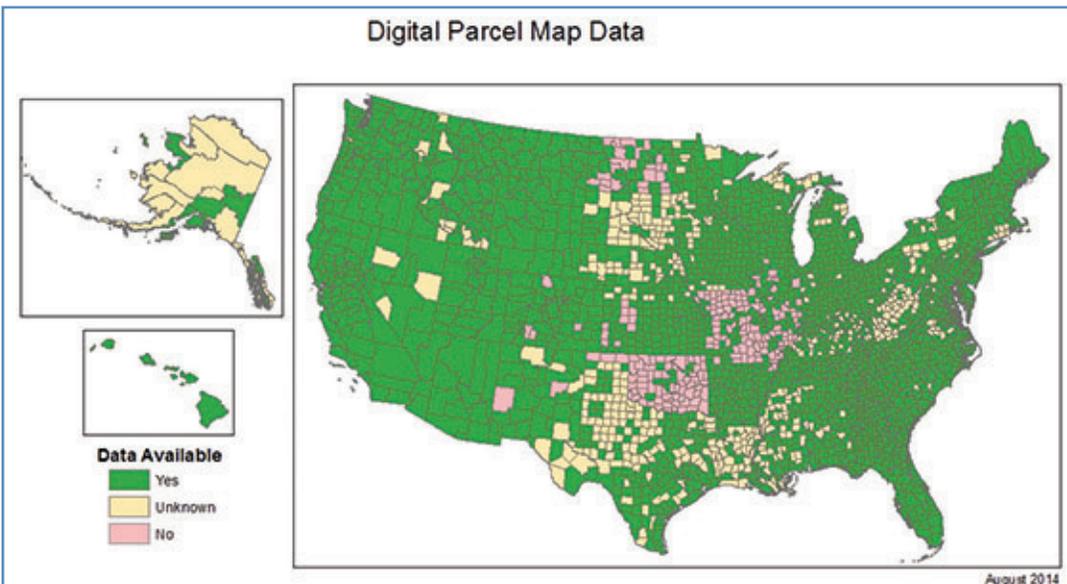
PLSS Standardization Status by State



State Parcel Data Stewardship



Digital Parcel Map Data



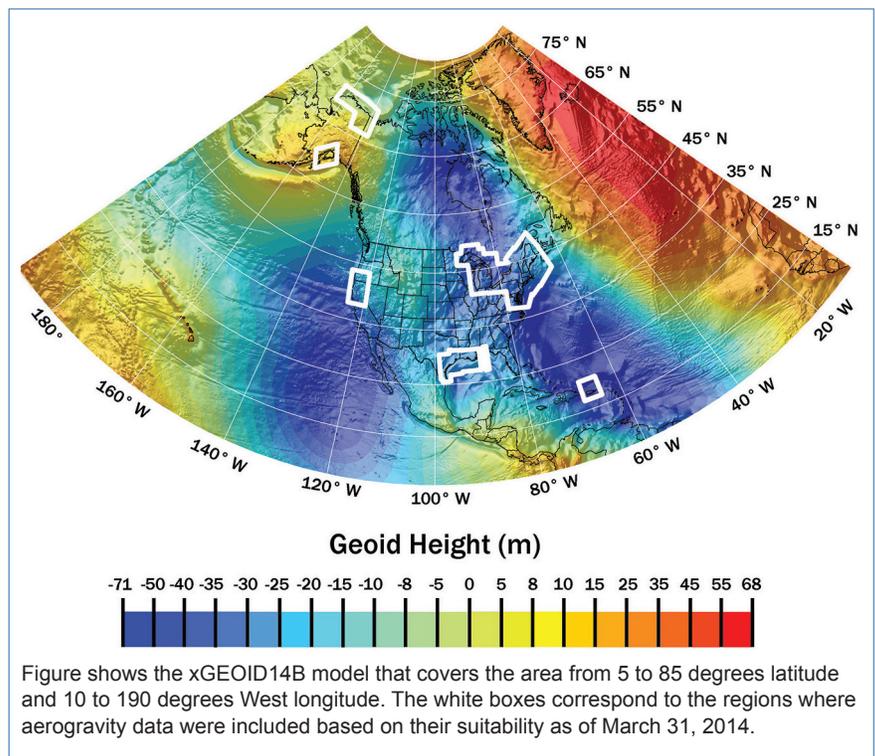
cultural resource geospatial data theme and to coordinate these activities across Federal, State, Tribal, local, and private sector geospatial programs to that end. Because each State/Tribal historic preservation office, certified local government, and Federal agency operates independently to collect, maintain, and utilize their portion of the repository of over four million cultural resources nationwide, coordination in data standards is a key aspect for the utility of the data that is required for Federal regulatory needs and disaster response and preparedness as well as climate change studies. The subcommittee provides the framework for developing cultural resource data standards to facilitate data sharing in addition to fostering coordination of data collection efforts among stakeholders. Subcommittee members include 20 Federal agencies as well as 10 State and 10 Tribal participants. The subcommittee's accomplishments for 2014 include:

- Elevation of the Cultural Resources Working Group under the Subcommittee on Cultural and Demographic Data to the Cultural Resources Subcommittee and approval of a new charter for the Cultural Resources Subcommittee in September 2013.
- Approval of an amended standard proposal in June 2014, revising the originally planned cultural resource geospatial data content standard to a more critically needed cultural resource geospatial data transfer standard.
- Preparation of an initial working draft of the proposed cultural resource geospatial data transfer standard in July 2014, based on work conducted by the original cultural resources working group begun in earnest in 2008.
- Supported the implementation of the NGDA Management Plan by designating an Executive Theme Champion for the Cultural Resources Theme, reviewing and updating NGDA Dataset baseline inventory for the Cultural Resources Theme, and updating the Theme's NGDA Datasets metadata to be NGDA compliant for harvesting by Data.gov/ Geoplatform.gov.

Geodetic Control Subcommittee

The Federal Geodetic Control Subcommittee exercises governmentwide leadership in coordinating the planning and execution of geodetic surveys, in developing standards and specifications for these surveys, and in the exchange of geodetic survey data and technical information. The subcommittee accomplished the following in fiscal year 2014:

- Supported the implementation of the NGDA Management Plan by reviewing and updating the NGDA Dataset baseline inventory for the Geodetic Control Theme, registering the Theme's NGDA Datasets on Data.gov/ Geoplatform.gov, and providing input on the proposed NGDA Dataset maturity assessment.
- The National Geodetic Survey (NGS) released an experimental geoid height model spanning one quarter of the Earth's surface: beta.ngs.noaa.gov/GEOID/xGEOID14/. The new model, the first to cover all of Hawaii, Alaska, Puerto Rico, and the U.S. mainland incorporates all available satellite, airborne, and surface gravity data, which represents a significant step toward defining a new regional vertical datum. The efforts and continuing collaborations provide expertise in developing a world height system. It will be tested by surveyors, engineers, geographic information specialists, and others interested in defining accurate heights. NOAA is collaborating with Canada, Mexico, Central American and Caribbean nations, and Denmark (for Greenland) to provide a unified height model for scientific, engineering, disaster mitigation, and emergency response purposes. For example, this model may improve the ability of forecasters to predict the effects on Florida of storm surge from a hurricane in Haiti. Release of this experimental model allows for a better understanding of what the final geoid model will look like when it replaces the current national vertical datum (North American Vertical Datum of 1988) in the year 2022.



- Released a series of short videos, produced in collaboration between NOAA's National Geodetic Survey and The COMET Program, a part of the University Corporation for Atmospheric Research's Community Programs. The videos provide an introduction to geodetic datums for anyone who uses mapping products or other geospatial tools (www.youtube.com/playlist?list=PLsyDI_aqUTdFY6eKURmiCBBk-mP4R10Dx).
- Updated Guidelines for Real Time Global Navigation Satellite System (GNSS) Networks (www.ngs.noaa.gov/PUBS_LIB/NGSGuidelinesForRealTimeGNSSNetworks.pdf) and User Guidelines for Single Base Real Time GNSS Positioning (www.ngs.noaa.gov/PUBS_LIB/UserGuidelinesForSingleBaseRealTimeGNSSPositioningv.3.1A-PR2014-1.pdf).
- Updated guidelines for the establishment of calibration base lines.
- Continued education, outreach, development of transition tools and applications, and capacity-building activities to prepare users for the transition to new geometric and geopotential datums.
- Subcommittee meetings occurred in January and July 2014.

Geologic Data Subcommittee

The Geologic Data Subcommittee coordinates Federal and non-Federal interests in geologic data, including the facilitation of exchange of information and transfer of data; the establishment and implementation of standards for quality, content, and transferability; and the coordination of the identification of requirements and the collection of spatial data to minimize duplication of effort where practicable and economical. The Geologic Data Subcommittee website is at ngmdb.usgs.gov/fgdc_gds/. This year's accomplishments include:

- On behalf of the subcommittee, the U.S. Geological Survey, the National Park Service, and the Association of American State Geologists (representing the State geological surveys) have made significant progress on the evaluation and proposed minor revisions to "NCGMP09" (ngmdb.usgs.gov/Info/standards/NCGMP09/), the emerging standard database design for publication and management of digital geologic maps. This design is named "NCGMP09" to indicate its origin, under the auspices of the National Cooperative Geologic Mapping Program (NCGMP). In the past 2 years, several agencies have published maps in this design, and acknowledgment of this design as the general standard is gaining broader acceptance (see Progress Report at ngmdb.usgs.gov/Info/standards/NCGMP09/docs/NCGMP09_ProgressReport_Sept2013.pdf). Two

monthly teleconferences are now being held in order for the various agencies to share technical questions and to resolve issues related to whether the draft standard needs modification. A steering committee and a working group have been formed; the working group is tasked with collecting and evaluating comments and suggestions for possible modifications to the design, and recommendations for efficient workflow in creating NCGMP09-compliant files.

- The Geologic Data Subcommittee continues to support the FGDC Digital Cartographic Standard for Geologic Map Symbolization through responses to technical questions regarding implementation, and by soliciting suggestions for updates to the Standard.

Homeland Infrastructure Foundation-Level Data Subcommittee

The Homeland Infrastructure Foundation-Level (HIFLD) Subcommittee is a new committee this year. The proposal from the HIFLD Working Group was presented to the FGDC Executive Committee in February 2014 and the committee requested DHS and NGA to work with HIFLD Working Group principles to develop the draft HIFLD Subcommittee charter that was approved by the FGDC Coordination Group on April 25, 2014, and by the FGDC Steering Committee on June 13, 2014. The purpose of the HIFLD Subcommittee is to develop, promote, and execute a coordinated strategy for acquisition or development of homeland infrastructure geospatial information for Federal agencies while creating and utilizing partnerships with State, Tribal, territorial, local, and private organizations. The subcommittee serves as a focal point to coordinate homeland infrastructure geospatial information requirements among Federal, State, Tribal, territorial, local, and private organizations and to ensure coverage of homeland infrastructure geospatial information for all States, territories, and possessions. It consists of Federal agencies that, as part of their mission, collect or finance the collection of infrastructure geospatial information. The subcommittee is supported by a HIFLD Program Management Group, which is composed of the following organizations: Department of Homeland Security (DHS) Geospatial Management Office, Office of Infrastructure Protection, Federal Emergency Management Agency; Department of Defense Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs; Department of the Interior Office of the Geospatial Information Officer; and National Geospatial Agency (NGA) Office of the Americas. The fiscal year 2014 accomplishments of the subcommittee include:

- DHS agreed to provide resources to support the new HIFLD Subcommittee and HIFLD Program Management Group.

- The first meeting of the HIFLD Program Management Group was scheduled during a HIFLD workshop that was held at the end of September 2014 and was combined with an NGA World Wide Human Geography Data Working Group water security workshop.

Marine and Coastal Spatial Data Subcommittee

The primary mission of the Marine and Coastal Spatial Data (MCSD) Subcommittee is to develop and promote the Marine and Coastal National Spatial Data Infrastructure (NSDI). The vision of the Marine and Coastal NSDI is that current and accurate geospatial coastal and ocean data will be readily available to contribute locally, nationally, and globally to economic growth, environmental quality and stability, and social progress. The subcommittee is chaired by the NOAA Geospatial Information Officer.

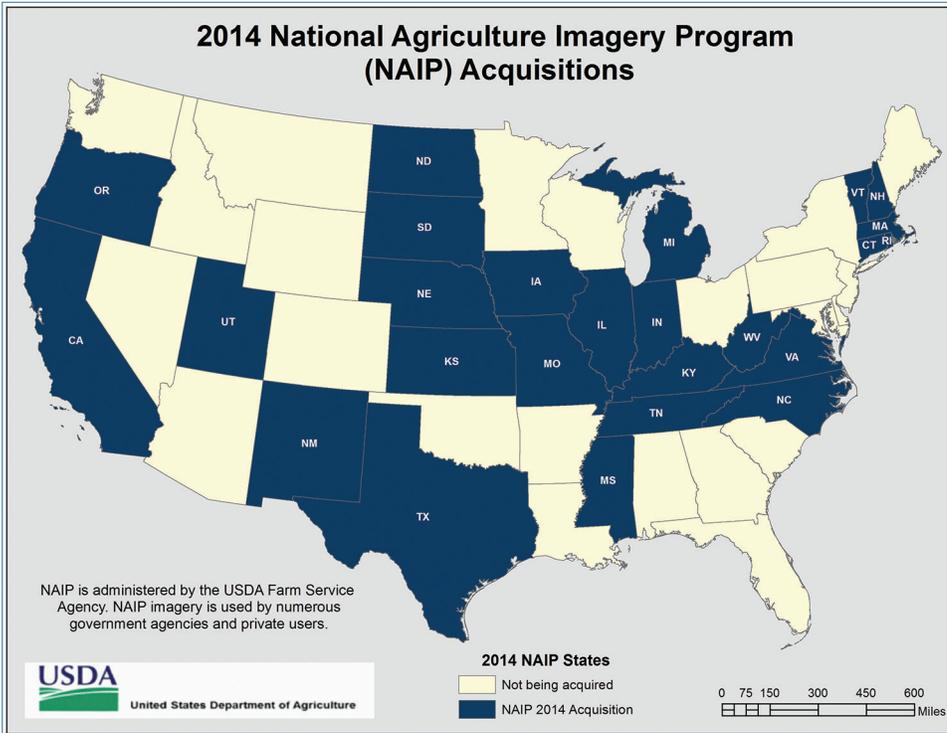
For the past 4 years the subcommittee has worked in an integrated manner, seeking critical partnerships with other Federal, State, and local governments, as well as interagency and multi-sector activities in the marine and coastal environment focusing on spatial data. These activities include the National Ocean Council and the *ocean.data.gov* data portal, the Integrated Working Group on Ocean and Coastal Mapping, and the Integrated Ocean Observing System, to name a few key initiatives. The marine and coastal geospatial community is broad and diverse; therefore, the need for the FGDC's MCSD Subcommittee to seek to leverage ongoing activities in other sectors. For the year 2014, accomplishments of the subcommittee include:

- Supported the implementation of the NGDA Management Plan by reviewing and updating NGDA Dataset baseline inventory for the Water – Oceans and Coasts Theme and registering the Theme's NGDA Datasets on Data.gov/ Geoplatform.gov.
- The Ocean Community on Data.gov (*ocean.data.gov*) is sponsored by the National Ocean Council and has full support from the MCSD membership. The Ocean Community website was migrated from Drupal to WordPress and a new version was released in January 2014.
- The Marine Planning Portal Network (MPPN), through a combination of a listserv, webinar series, and informational resources serves as one of the main conduits for communication between State, regional, and national portals, applications, and planning efforts. The MPPN continues to grow and now has 110 listserv members. This year four webinars were hosted. In August the MPPN convened a meeting in Portland, Oregon, for marine planning portal and coastal atlas practitioners.

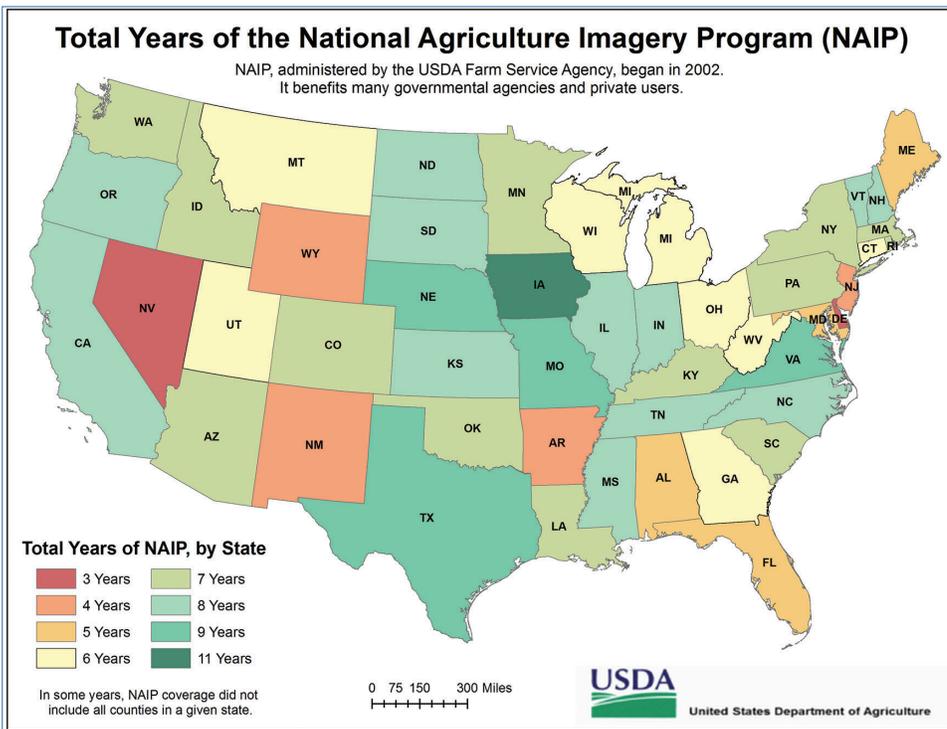
- A Federal mandate under the Ocean and Coastal Mapping Integration Act of 2009 (OCMIA) established the requirement to “coordinate and leverage ocean and coastal mapping efforts to improve access to existing data and efficiently collect future data.” The Interagency Working Group on Ocean and Coastal Mapping has developed a National Coastal Mapping Strategy to meet this mandate. The strategy initially focuses on topographic-bathymetric lidar data collection in the shoreline and littoral zones and will provide a framework for coordinated coastal/nearshore data collection across Federal agencies.
- The U.S. Integrated Ocean Observing System (IOOS) continued the IOOS Common Product Initiative (CPI) with a goal of exploring product development efforts being made by the regional associations and identifying areas where common products could be developed that would meet regional and IOOS product development goals. The U.S. IOOS Data Management and Communication (DMAC) core services have released their fifth Quality Assurance of Real Time Ocean Data (QARTOD) manual.
- The Coastal Geospatial Services Contract continued to be utilized as a mechanism for coordinated data acquisitions for the marine and coastal community. Twenty-five coastal geospatial contracts were awarded in fiscal year 2014. Notable work includes updating Environmental Sensitivity Index Maps for the Hurricane Sandy affected areas, benthic and bathymetry mapping in San Francisco Bay, lidar surveys in Northern California to support salmon habitat restoration, sand and gravel GIS development on the East and Gulf Coasts, and spatially enabling Bureau of Ocean Energy Management (BOEM) funded environmental studies.
- A new MarineCadastre.gov website was released that includes a new data registry with custom map creation functionality, as well as a new organization and look and feel to the entire website. The MarineCadastre.gov team won two awards: (1) the Department of Commerce Energy and Environmental Stewardship Award in the Renewable Energy Category and (2) a multimedia map award at the User Applications Fair during the 2014 Esri User Conference.

National Digital Orthoimagery Program Subcommittee

The National Digital Orthoimagery Program (NDOP) Subcommittee is responsible for developing, promoting, and executing a national strategy for acquisition or development of orthoimagery data for Federal agencies while creating and utilizing partnerships with State, local, Tribal, and private organizations and supports NSDI Strategic Plan Objective 2.2. The NDOP Subcommittee is accountable to the FGDC Steering Committee and provides



- Orthoimagery for 25 States were collected in 2014 under the National Agriculture Imagery Program (NAIP).
- High resolution imagery was collected through multiple funding partnerships with 139 local partners, 12 States, and 5 Federal agencies. By combining the requirements and funding of these entities, 107,799 square miles of 1-foot imagery was efficiently collected for the benefit of all. This resulted in a 9.6:1 leverage of Federal monies on these projects, with the bulk of the Federal funds provided by the National Geospatial-Intelligence Agency (NGA). In other words, for every 1 dollar that the Federal Government used to collect high resolution imagery, they received nearly 10 dollars' worth of imagery.



- Among the actions taken to absorb the permanent cuts to the program, the National Geospatial Program of the USGS eliminated the “in-kind” services that have been provided to the 133 Urban Areas Imagery project. The discontinued services include partnership development using the USGS network of Geospatial Liaisons and project support at the USGS National Geospatial Technical Operations Center consisting of quality assurance, data management, and data delivery. The USGS honored all previous agreements as written with the goal to complete the NGA-identified 18 projects in fiscal year 2014.
- NOAA has collected coastal areas in orthoimagery and in lidar.
- Natural Resources Conservation Service (NRCS) continued to fund satellite imagery collection of Pacific Basin areas.

recommendations to the FGDC Coordination Group. These are the policy and operational authorities, respectively, responsible for providing leadership and direction in the use and development of geospatial data and information across Federal geospatial programs and in conjunction with public, academic, and private sector partners/stakeholders. The subcommittee accomplished the following in 2014:

- U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) continued to administer NAIP with partnership funding contributions from Department of the Interior bureaus (USGS, BLM, FWS, NPS) and other USDA agencies (NRCS, USFS). This work supports NSDI Strategic Plan Objective 1.4.

- NDOP Technical Subgroup members have contributed comments to the American Society for Photogrammetry and Remote Sensing (ASPRS) Positional Accuracy Standard for Digital Geospatial Data that will move forward for approval in fiscal year 2015.

Spatial Water Data Subcommittee

The Advisory Committee on Water Information (ACWI) and FGDC created the Subcommittee on Spatial Water Data (SSWD) to assist coordination of Federal and non-Federal interests in spatial water data, including (1) facilitating the exchange of information and transfer of data; (2) establishing and implementing standards for quality, content, and transferability; and (3) coordinating the identification of requirements and the collection of spatial data to minimize duplication of effort where practicable and economical. In fiscal year 2014, leadership of the subcommittee changed due to changes in staff assignments. During the year, the subcommittee:

- Supported the implementation of the NGDA Management Plan by reviewing and updating NGDA Dataset baseline inventory for the Water – Inland Theme and registering the Theme’s NGDA Datasets on Data.gov/Geoplatform.gov.
- Established a core membership consisting of the Dataset Managers for each of the Water – Inland Theme NGDA Datasets.
- Re-established a regular meeting schedule and agenda for the subcommittee.
- Continued to focus on the national delivery of water quality and quantity results using standard geography, GIS, and internationally adopted standards to harmonize the delivery of sampling points and time series data on flow, water levels, water quantity, and water quality.
- Identified a pilot project to examine integration of National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) data based on user needs.
- Worked with the Department of Transportation (DOT) to address issues identified in a 2012 U.S. Government Accountability Office (GAO) report. The work included preparing goals for the transportation datasets, designating the DOT’s SAOGI, and establishing a geospatial advisory council for the DOT. After the Geospatial Council was created the Theme leadership assisted it in creating the DOT’s policies for metadata, procedures and guidelines for using the clearinghouse, developing transportation data standards, and creating a geospatial strategic plan for the DOT.
- The Theme lead supported the implementation of the NGDA Management Plan by reviewing and updating NGDA Dataset baseline inventory for the Transportation Theme, registering the Theme’s NGDA Datasets on Data.gov/Geoplatform.gov, and coordinating activities to support the Theme’s Executive Theme Champion, Theme Lead, and Dataset Managers.
- The DOT received the first submissions of the All Roads Network of Linear Referenced Data (ARNOLD). Of the 52 submissions (one from each State DOT plus the District of Columbia and Puerto Rico), 31 were able to meet the new “all roads” requirement, 21 were slightly lacking, and 6 are in need of assistance.
- DOT began discussions with stakeholders to determine what role DOT should play in the development and maintenance of a National Address Database (NAD). With the natural tie in between ARNOLD and addresses and with the Next Generation 911 (NG911) program falling under the National Highway Traffic Safety Administration, DOT realized the need to play a larger role in the NAD.

Transportation Subcommittee

The Transportation Subcommittee works to coordinate and support the NSDI and other transportation data-related activities among stakeholders. The subcommittee’s current areas of interest include all modes of transportation, transportation networks, terminals, and services (including intermodal freight and passenger), and the movements of people and commodities using them. The Transportation Theme had an active 2014 with efforts centering on areas that have helped the subcommittee enhance Transportation National Geospatial Data Assets as well as promote transportation data in the Geospatial Platform. These activities will be the primary focus of the Subcommittee in the upcoming year.

Vegetation Subcommittee

The mission of the Vegetation Subcommittee is the coordination of terrestrial vegetative data-related activities among Federal agencies and the establishment of mechanisms for the coordinated development, use, sharing, and dissemination of terrestrial vegetation data. In fiscal year 2014, the subcommittee completed the following activities:

- Finalized a new Memorandum of Understanding to formalize the partnership between Federal and non-Federal partners working toward the vegetation goals.
- Supported ongoing vegetation hierarchy revisions, including the middle (macrogroup) and lower levels (alliance) of the U.S. National Vegetation Classification (NVC) standard. The current status of the classification can be found at usnvc.org.
- Finalized a pilot project U.S. National Vegetation Process Testing Peer Review to identify new types and

performance modifications to vegetation types currently described in the NVC standard. Results of the process document the peer review process and the policy decisions necessary to standardize the evaluation of proposals for revising the dynamic content of the NVC.

- Continued to develop the cyber infrastructure to support the NVC, specifically the Hierarchy Browser search capability. Also, continued to maintain a public archive for vegetation records in *vegbank.org*.
- Finalized the NSDI Cooperative Agreements Program project with the California Native Plant Society and the California Department of Fish and Game to establish linkages between the alliances recognized in the Manual of California Vegetation and alliances of the NVC, www.fgdc.gov/grants/2012CAP/projects/G12AC20142.
- Hosted a workshop at the National Military Fish and Wildlife Association meeting in Denver, Colorado; briefed the Interagency Land Management Adaptation Group on the application of the NVC in mapping; and manned a booth at the annual Ecological Society of America (ESA) Conference in August 2014.
- Held monthly teleconferences and developed educational materials that are available to the public.
- Helped to develop auto-keys for Federal agencies to allow crosswalks with existing databases to NVC.

Wetlands Subcommittee

The Wetlands Subcommittee promotes standards of accuracy and consistency in Federal geospatial wetlands data, exchanges information on technological improvements for collecting spatial wetlands data, encourages Federal and non-Federal communities to identify and adopt standards and specifications for spatial wetlands data, and collects and processes the requirements of Federal and non-Federal organizations for spatial wetlands data. This year the subcommittee:

- Completed the digital wetland coverage for the conterminous 48 States, Hawaii, Puerto Rico, the U.S. Virgin Islands, Guam, the major Northern Mariana Islands, and 35 percent of Alaska. This was accomplished by adding updated data, accepting contributed data from States, digitizing existing hardcopy maps and producing scalable wetland data for those areas without maps. Completing the wetland layer for the conterminous United States is an important milestone in the history of the National Wetlands Inventory. Except for Alaska, every State and territory has at least basic digital wetland data.
- Completed the largest one-time increase in the amount of digitized legacy National Wetlands Inventory data in

the program's history, which contributed to completing the wetland coverage for the conterminous 48 States.

- Continued the development of the National Wetlands Inventory (NWI) Version 2 (Surface Waters and Wetlands Inventory) that includes the never-before-served legacy NWI linear data with augmentation from National Hydrography Data (NHD) to complete segmented connections. This newly derived dataset depicts all surface water and wetland features in a single polygonal feature class and applies the Classification of Wetlands and Deepwater Habitats of the United States (1979) system to provide consistent ecological descriptors.

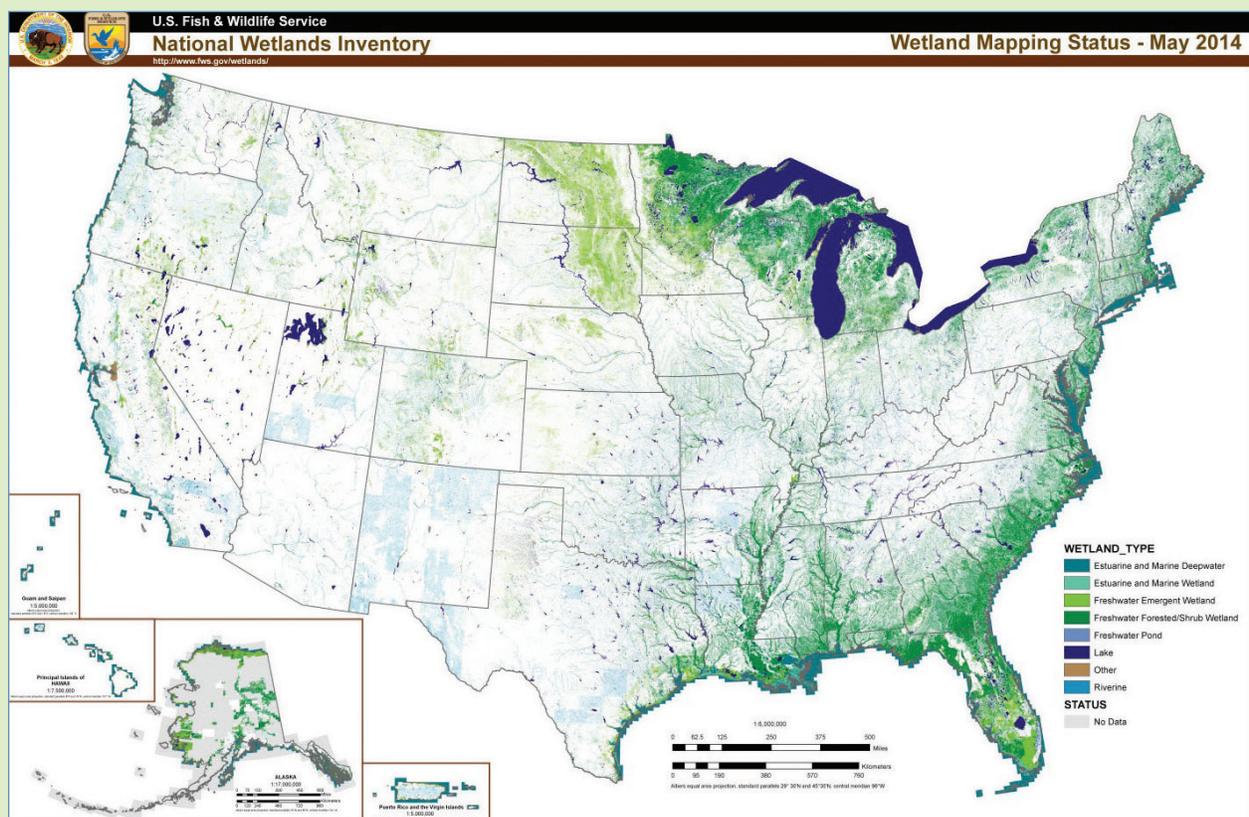
Metadata Working Group

The Metadata Working Group promotes awareness and best practices among FGDC member agencies and other interested stakeholders about the metadata component of geospatial data; facilitates the coordination, development, use, sharing, and dissemination of geospatial metadata; supports the implementation of geospatial metadata and other related semantic and structural (that is, non-geospatial) metadata standards established by Federal, national, and international standards organizations such as the FGDC, Open Geospatial Consortium (OGC), American National Standards Institute (ANSI), International Organization for Standardization (ISO), Dublin Core Metadata Initiative (DCMI), Open Source Metadata Framework (OMF), Ecological Metadata Language (EML), and the World Wide Web Consortium (W3C). In fiscal year 2014, the Metadata Working Group provided direct support to the FGDC Metadata Program and actively engaged in a range of NSDI initiatives, including:

- Participation and presentations within the Metadata Working Group quarterly teleconferences, FGDC Standards Working Group, and ISO Implementation Forums.
- Assessment of the NSDI Strategic Plan and the role of metadata to support specific tasks.
- Development of the FGDC ISO Geospatial Metadata Editors Registry assessment components and specification of components critical to the editor selection process.
- Identification of organizations that had implemented the ISO 19115 North American Profile and coordination with the Standards Working Group to develop recommendations for maintaining the standard.
- Serve as the primary conduit for the communication about geospatial metadata and other related semantic and structural (non-geospatial) metadata standards, tools, training, and implementation.

National Wetlands Inventory Application of NSDI Guiding Principles

The U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory is working to implement the guiding principles for the Federal geospatial community as it relates to the wetlands layer of the NSDI. In May 2014 the National Wetlands Inventory announced the completion of the digital wetland coverage. With this effort, the FWS will have achieved the legislative mandate to map and digitize the wetlands of the conterminous United States, which is an NGDA Dataset designated by OMB Circular A-16. It is built using these FGDC standards: the FGDC Wetlands Mapping Standard, FGDC-STD-015-2009, and the revised FGDC Wetlands Classification Standard, FGDC-STD-004-2013 (www.fws.gov/wetlands/Data/Data-Standards.html).



National Wetlands Inventory mapping status, May 2014.

The FWS ensures that spatial data from multiple sources are available and integrated by providing organizations or individuals the opportunity to contribute wetlands data to the wetlands geospatial data layer. The development and maintenance of the wetlands layer of the NSDI has become more and more dependent on the contributors. Information on contributing data is available at www.fws.gov/wetlands/Data/Contributed-Data.html and includes submission guidelines, data collection requirements and procedures, and acknowledgement of the 35 agencies and organizations contributing data.

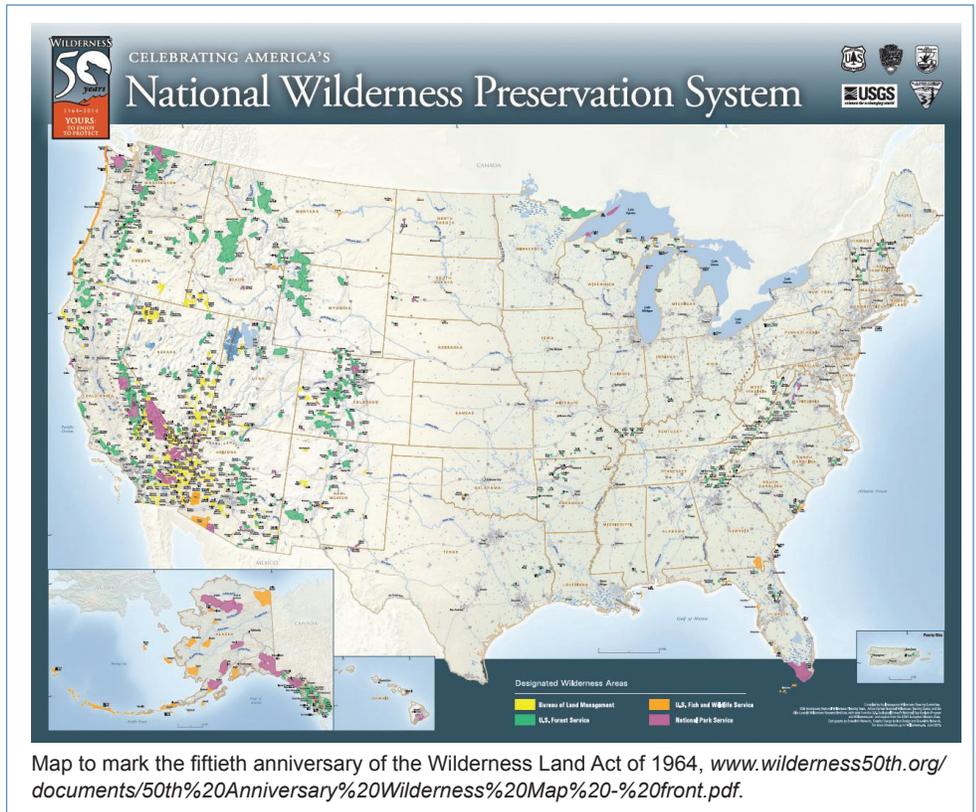
The FWS provides access to all citizens to wetlands geospatial data in a variety of methods to serve the needs of the advanced GIS users and the general public. The Wetlands Mapper is an online application that allows users to view wetlands data interactively from any Web browser and many handheld devices. Downloadable data is available to GIS practitioners. Interoperability map services are available to enable open access to the wetlands data from a suite of applications and software from multiple agencies and partners. Further information can be found at www.fws.gov/wetlands/Data.

- Coordinate with the INCITS-L1 group (standards.incits.org/a/public/group/11) who provided regular ISO geospatial metadata updates for the Metadata Working Group.

National Boundaries Group Working Group

This year the National Boundaries Group (NBG) Working Group was formally designated as an FGDC Working Group and met four times during the year. The purpose of the NBG Working Group is to develop nationally consistent boundaries that are integrated using the same geographic base. The goal is to make sure Federal boundary sources are consistent, accurate, and integrated. In fiscal year 2014 the NBG accomplished the following:

- The Federal Lands Working Group within the NBG has collaborated with BLM to enhance the Surface Management Agency (SMA) dataset as an interim step toward parcel-level administrative boundaries. The SMA shows which agencies are managing the surface of the land. The Federal Lands Working Group has focused on data management system presentations by agencies (BLM, BOR, NPS, USFS) to share lessons learned and identify how land transaction records are transferred to BLM's SMA.
- The Federal Lands Working Group has completed a draft national geodatabase of Federal lands using the Protected Areas Database of the United States (PADUS) schema and multiple feature classes (Ownership, Designation, etc.) with simple topology errors defined (exceeded fiscal year 2014 goal to test in two pilot States). The group also developed a Source Data Documentation spreadsheet to track the migration of source data files into the geodatabase model, including tests for the completeness and compatibility of attributes between agencies.
- September 3, 2014, marks the fiftieth anniversary of the Wilderness Land Act of 1964. To commemorate this event, the USGS, National Park Service, Fish and Wildlife Service, and U.S. Forest Service collectively integrated wilderness boundary data.
- The U.S. Census Bureau provided an overview describing statistical boundaries and geographical



areas defined solely for data collection, tabulation, and analysis. Statistical areas are used in a wide variety of Federal programs, as well as for urban and transportation planning.

- The International Boundary and Water Commission (IBWC) continues to map the U.S. border with Mexico. Disputes arise as a result of the constantly shifting Rio Grande River. Land boundary image maps are available as of fall 2014. This dataset is a National Geospatial Digital Asset.
- The International Boundary Commission (IBC) maintains the 5,625-mile-long boundary between the United States and Canada. This fixed boundary was digitized using some resurveying. Portions of the file are under dispute. This dataset is a National Geospatial Digital Asset.
- The U.S. Census Bureau, the IBC, and the IBWC continue to collaborate to update the international boundaries in the Census Bureau's digital map of the United States, Puerto Rico and island areas, and TIGER (Topologically Integrated Geographic Encoding and Referencing system). The U.S. Census Bureau met with the USGS on the collaborative effort to update the international boundaries for Alaska to complete the USGS topographical quadrangles.

Standards Working Group

The FGDC Standards Working Group is responsible for promoting the development and implementation of standards in support of the NSDI and helps support Objective 3.1 of the NSDI Strategic Plan. This year the Working Group met quarterly and recommended advancing the following standards for FGDC endorsement: (1) the Real Property Asset Data Standard (RPADS); (2) Web Feature Services 2.0; (3) GeorSS Simple and GeorSS GML; (4) Corrigenda 1:2007 and 2:2008 JPEG 2000 to ISO/IEC 15144-1:2004, Information technology—JPEG 2000 image coding system: Core coding system; and (5) Aeronautical Information Exchange Model (AIXM) 5.1. It also recommended withdrawing the dated Spatial Data Transfer Standard (SDTS), Parts 1–7.

Users/Historical Data Working Group

The Users/Historical Data Working Group (UHDWG) promotes and coordinates activities among Federal agencies that are primarily users of, not generators of, geospatial data. The UHDWG promotes awareness among Federal agencies of the historical dimension to geospatial data; facilitates the long-term retention, storage, preservation, and accessibility of selected geospatial data; and works to establish mechanisms for the coordinated development, use, sharing, and dissemination of historically valuable geospatial data that have been financed in whole or part by Federal funds.

In the past year the UHDWG continued work on the “Guidance on the Selection and Appraisal of Geospatial Content of Enduring Value” document. The UHDWG prepared this guidance document to help Federal agencies and data stewards define geospatial content of enduring value to the Nation. This guidance suggests possible priority approaches on how resources might be allocated to support long-term preservation and access through appropriate Selection and Appraisal (S&A) processes in a challenging funding environment. While many Federal Government applications rely on the most current available content, there is increasing demand for older content to support historical and temporal analyses related to change in the earth’s natural and human landscape, including physical infrastructures. Examples of applications that require historic content include the study of climate change, disaster planning, environmental impact analysis, industry site location planning, and the resolution of legal challenges. While still under review, the document provides inputs to future FGDC lifecycle planning, including future iterations of the National Geospatial Data Asset management strategy.

In addition, the UHDWG held monthly webinars for members to discuss issues and share topical information

on geospatial use, preservation, and stewardship. Topics included the implementation of the National Geospatial Data Asset Management Plan; the USDA Farm Service Agency’s Aerial Field Office program for scanning historical aerial film; and the use of GeoPDF, a geospatial extension to the Portable Document Format (PDF), across the Federal Government.

Appendix A

FGDC Leadership Profiles



Anne Castle

**Assistant Secretary for Water and Science, Department of the Interior
Chair, FGDC Steering Committee**

Ms. Anne Castle, confirmed as Assistant Secretary for Water and Science in June 2009, is responsible for overseeing water and science policy for the U.S. Department of the Interior (DOI), specifically through oversight of the U.S. Bureau of Reclamation and the U.S. Geological Survey. In addition to her leadership on water issues, Ms. Castle has been a champion of the National Land Imaging Program. Prior to joining the DOI, Ms. Castle practiced law for 28 years in Denver, Colorado, focusing on water issues. She received a bachelor of science degree in applied mathematics, with honors, from the University of Colorado and earned a juris doctorate from the University of Colorado.



Scott Bernard

**Federal Chief Enterprise Architect, Office of E-Government and Information
Technology
Office of Management and Budget
Vice Chair, FGDC Steering Committee**

Prior to his 2010 appointment to OMB, Dr. Scott Bernard was the Deputy Chief Information Officer and Chief Enterprise Architect for the Federal Railroad Administration. He received a doctorate in Public Administration and Policy from Virginia Polytechnic Institute and State University and a master of science degree from Syracuse University.



Ivan DeLoatch

**Executive Director
Federal Geographic Data Committee**

Mr. Ivan DeLoatch has served as the Executive Director of the FGDC for the past 11 years. Previously he served as Chief of the Data Acquisition Branch in the U.S. Environmental Protection Agency's Office of Environmental Information. He earned a bachelor of science degree in biology from Bowie State University.

FGDC Executive Committee



David Alexander
Director, Geospatial Management Office
U.S. Department of Homeland Security

Mr. Alexander's career in the geospatial information field spans more than three decades. He assumed responsibility for the U.S. Department of Homeland Security (DHS) Geospatial Management Office in 2012 after having spent 4 years in senior leadership roles with the DHS Office of the Chief Information Officer. Mr. Alexander has led several national initiatives, including the Homeland Security Geospatial Concept of Operations (GeoCONOPS), the DHS Geospatial Information Infrastructure (GII), the Homeland Infrastructure Foundation Level Data (HIFLD) Working Group, and technical lead for response coordination in the Department of Health and Human Services, the Secretary's Operations Center. Mr. Alexander holds several advanced degrees encompassing history, geography, and business management.



Jeff Bell
Deputy Director, Geospatial Intelligence Standards and Enterprise
Architecture, Office of the Chief Information Officer, National Geospatial-
Intelligence Agency

Mr. Jeffrey Bell directly supports the National Geospatial-Intelligence Agency Chief Information Officer in fulfilling his functional management responsibilities for geospatial intelligence standards and architecture for the National Systems for Geospatial-Intelligence community. Mr. Bell has been active in geospatial standards development, governance, and implementation for the last 9 years, coordinating and harmonizing military requirements and standards development activities with civil, industry, and international standards organizations. He serves as the Chair of the Geospatial Intelligence Standards Working Group (GWG).



Jerry Johnston
Geographic Information Officer
U.S. Department of the Interior

Dr. Jerry Johnston has been with the U.S. Department of the Interior for the past 3 years. Prior to this he served as the Geographic Information Officer for the U.S. Environmental Protection Agency (EPA) for several years. Before his time with EPA, Dr. Johnston conducted research on complex environmental systems modeling and served as the project manager for numerous geospatial projects in the private sector. He holds a master's degree and doctorate in environmental science from Indiana University, Bloomington, as well as a bachelor of science degree in environmental science from Michigan State University. Dr. Johnston currently serves as Vice Chair for the National Geospatial Advisory Committee.

FGDC Executive Committee (continued)

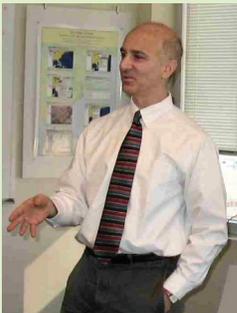


Stephen Lowe
Geospatial Information Officer
U.S. Department of Agriculture

Mr. Stephen Lowe has over 24 years of Federal Government business and technology transformation experience. He has also completed two term appointments supporting the White House Executive Office of the President and served as Senior Solutions Architect for Enterprise Innovation and Strategy with SRA International. Mr. Lowe holds graduate degrees in management of information technology from the University of Virginia and in public administration from Virginia Polytechnic Institute and State University. He also holds a bachelor of arts degree in political science from James Madison University.



Keith Keller, (Acting)
Associate Director for Innovation/Chief Technology Officer
National Aeronautics and Space Administration



Harvey Simon
Geospatial Information Officer, Office of Environmental Information
Immediate Office
U.S. Environmental Protection Agency

Mr. Harvey Simon has been EPA's Geospatial Information Officer since July 2012 and is responsible for coordinating EPA's geospatial program. Prior to that he was Chief of the Information Services Branch in the Office of Information Analysis and Access, which is responsible for the Envirofacts database, a number of national geospatial applications and services, and operational management of the EPA GeoPlatform. Previously, Mr. Simon held the role of Geographic Information System (GIS) Coordinator for Region 2 and Chair of the EPA GIS Workgroup, including its Emergency Response GIS subgroup. Mr. Simon brings 28 years of GIS and risk analysis experience to his current position. He has an undergraduate and a master's degree from the State University of New York.

FGDC Executive Committee (continued)



Timothy Trainor

**Chief, Geography Division, U.S. Census Bureau
U.S. Department of Commerce**

Mr. Timothy Trainor is Chief of the Geography Division at the U.S. Census Bureau and is responsible for managing the MAF/TIGER System, a national resource of addresses and geospatial information to support data collection, tabulation, and dissemination for censuses and surveys. As a Rotary Fellow, he holds a post-graduate diploma in cartography from Glasgow University, Scotland. He has a master's certificate in project management from George Washington University School of Business and Public Management and a bachelor of arts degree in history from Rutgers University. He leads the U.S. Delegation to the UN-Global Geospatial Information Management Committee. He serves as a vice president to the International Cartographic Association.

Appendix B FGDC Structure and Membership

The Federal Geographic Data Committee (FGDC) operates under Office of Management and Budget (OMB) Circular A-16 (revised August 2002). The circular incorporates Executive Order 12906 and reaffirms the FGDC's role to provide leadership for the National Spatial Data Infrastructure (NSDI) and to coordinate the development, use, sharing, and dissemination of the Nation's geospatial data. Close coordination among the many agencies involved in Federal geospatial activities helps ensure the efficient and effective investment and use of geospatial resources.

The FGDC is an organized structure of Federal geospatial professionals and constituents that provide executive, managerial, and advisory direction and oversight for geospatial decisions and initiatives across the Federal Government. In accordance with OMB Circular A-16, the FGDC is chaired by the Secretary of the Interior or his/her designee, and the OMB Deputy Director for Management or his/her designee serves as Vice Chair.

FGDC Structure

The FGDC is governed by a Steering Committee that sets the FGDC's high-level strategic direction and is the Federal decisionmaking body. The Executive Committee, which is a subset of the Steering Committee, provides advice and guidance to the Chair and the Vice Chair.

The National Geospatial Advisory Committee (NGAC) is a Federal advisory committee that provides advice and recommendations on Federal and national geospatial programs. The FGDC Coordination

Group consists primarily of geospatial program leads and technical experts and conducts the FGDC's day-to-day business. The FGDC Office of the Secretariat, which is located at the U.S. Geological Survey headquarters in Reston, Virginia, provides strategic support and management for FGDC committees, components, and initiatives.

The FGDC infrastructure also includes agency-led subcommittees and working groups, and collaborating

partners that represent State, Tribal, and local governments, as well as industry and academic and professional organizations. All participants initiate and (or) support the following activities that are crucial to expanding the NSDI and addressing national priorities:

- Providing advice and leadership in applying geospatial capabilities to address national priorities and Presidential initiatives.

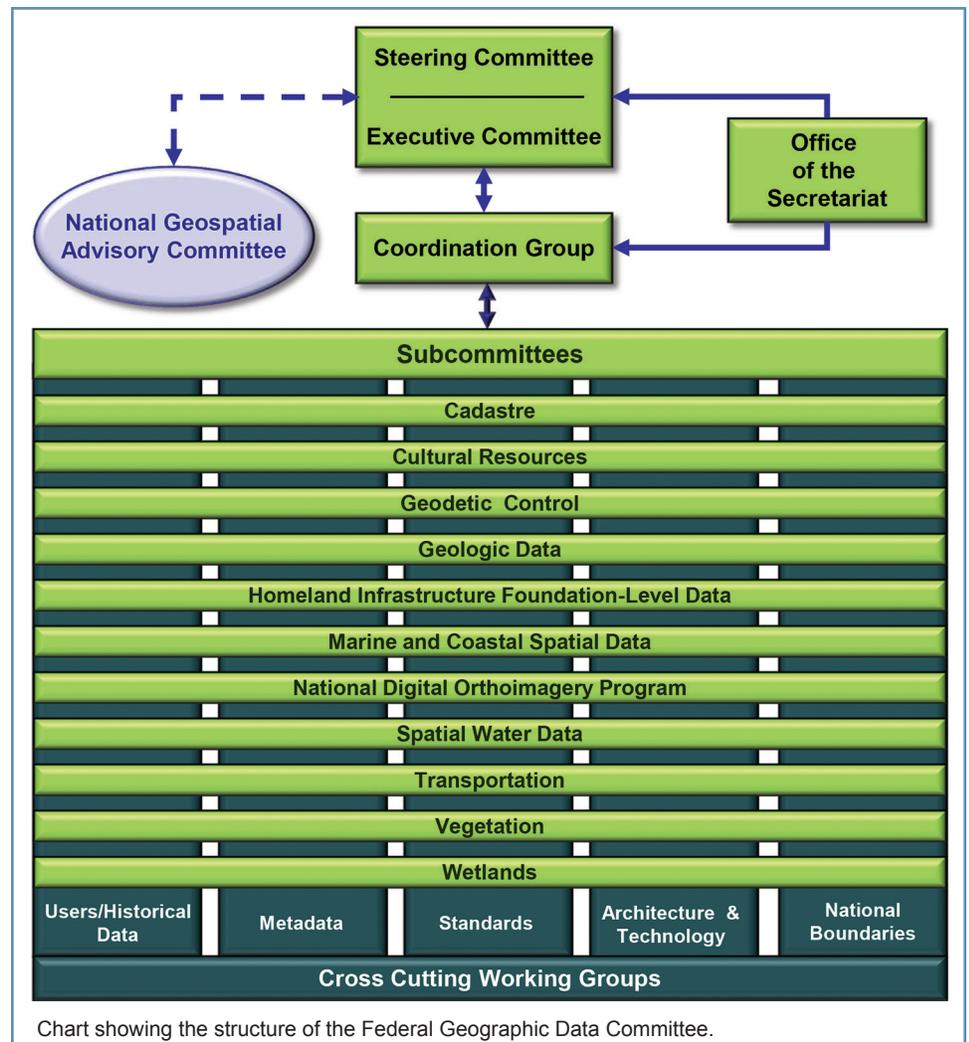


Chart showing the structure of the Federal Geographic Data Committee.

- Developing and establishing the National Geospatial Data Clearinghouse on the Internet.
- Developing and implementing standards.
- Creating a national digital geospatial data framework.
- Promoting collaborative relationships for sharing geospatial data among and between Federal and non-Federal partners.
- Developing policies and processes to better harmonize collective action.

More information about the FGDC structure and specific membership can be found at www.fgdc.gov/participation.

Steering Committee

The FGDC is governed by the Steering Committee, which is the policy-level interagency group whose central focus is to provide executive leadership for the coordination of Federal geospatial activities between, among, and within agencies. The committee does this by establishing policy and providing guidance and direction to the member agencies, based on business best practices. The Steering Committee is responsible for overseeing activities related to OMB Circular A-16 and for the implementation of the National Spatial Data Infrastructure. The FGDC Chair and Vice Chair lead the committee, which is made up of senior agency officials for geospatial information (SAOGIs) and includes representatives from Federal organizations, including the Executive Office of the President, Federal Executive Departments, and independent Federal agencies.

A subset of the Steering Committee, the Executive Committee, provides advice and guidance to the FGDC Chair and the Vice Chair on major Federal geospatial priorities and initiatives. The FGDC Chair and Vice Chair lead this committee, which includes representatives from the OMB and the seven Federal agencies that have the largest investments in geospatial technologies. The Executive Committee makes recommendations to the Steering Committee and provides a focal point for coordination with the National Geospatial Advisory Committee.

2014 Steering Committee Agencies

Federal Communications Commission (non-voting member)
General Services Administration
Library of Congress
National Aeronautics and Space Administration
National Archives and Records Administration
National Capital Planning Commission (non-voting member)
National Science Foundation
Office of Management and Budget (tie-breaking vote only)
Office of Personnel Management
Small Business Administration
Smithsonian Institution
Social Security Administration
Tennessee Valley Authority
U.S. Agency for International Development
U.S. Army Corps of Engineers (non-voting member)
U.S. Department of Agriculture
U.S. Department of Commerce
U.S. Department of Defense
U.S. Department of Education
U.S. Department of Energy
U.S. Department of Health and Human Services
U.S. Department of Homeland Security
U.S. Department of Housing and Urban Development
U.S. Department of the Interior
U.S. Department of Justice
U.S. Department of Labor
U.S. Department of State
U.S. Department of Transportation
U.S. Department of the Treasury
U.S. Department of Veterans Affairs
U.S. Environmental Protection Agency
U.S. Nuclear Regulatory Commission

Appendix C

National Geospatial Data Asset Themes

Geospatial data is described in the Office of Management and Budget (OMB) Circular A–16 Supplemental Guidance, released November 10, 2010, as a capital asset, and its importance to the success of Federal Government and partner programs is emphasized. This focus provides the foundation for a portfolio management approach for Federal geospatial datasets of National Significance—a National Geospatial Data Asset (NGDA) portfolio called for by OMB in fiscal year 2011 budget guidance. All NGDAs are associated with a National Geospatial Data Asset Theme. These Themes serve as the management units for collections of related NGDA Datasets that would benefit from coordinated development and management. In February 2013, the FGDC Steering Committee endorsed the revised version of the A–16 NGDA Themes and Theme Lead Agencies list. This endorsement revises the earlier list that was approved by the Steering Committee in 2011. The list of the NGDA Themes and Datasets and further information is available on the FGDC website (www.fgdc.gov/initiatives/portfolio-management).

NGDA Themes

Theme	Theme Lead Agency
Biota	U.S. Department of the Interior, U.S. Geological Survey
Cadastre	U.S. Department of the Interior, Bureau of Land Management
Climate and Weather	U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Cultural Resources	U.S. Department of the Interior, National Park Service
Elevation	Co-Leads: U.S. Department of the Interior, U.S. Geological Survey and U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Geodetic Control	U.S. Department of Commerce, National Oceanic and Atmospheric Administration
Geology	Co-Leads: U.S. Department of the Interior, U.S. Geological Survey and U.S. Department of the Interior, Bureau of Ocean Energy Management
Governmental Units, and Administrative and Statistical Boundaries	U.S. Department of Commerce, U.S. Census Bureau
Imagery	Co-Leads: U.S. Department of Agriculture, Farm Service Agency and U.S. Department of the Interior, U.S. Geological Survey
Land Use—Land Cover	Co-Leads: U.S. Department of Agriculture, U.S. Forest Service and U.S. Department of the Interior, U.S. Geological Survey
Real Property	General Services Administration
Soils	U.S. Department of Agriculture, Natural Resources Conservation Service
Transportation	U.S. Department of Transportation
Utilities, Offshore	U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement
Utilities, Terrestrial	Lead to be determined.
Water — Inland	Co-Leads: U.S. Department of the Interior, U.S. Fish and Wildlife Service and U.S. Department of the Interior, U.S. Geological Survey
Water — Oceans and Coasts	U.S. Department of the Commerce, National Oceanic and Atmospheric Administration

Appendix D

Fiscal Year 2014 FGDC Office of the Secretariat

Financial Summary

The Federal Geographic Data Committee (FGDC) is a 32-member interagency committee that promotes the coordinated development, use, sharing, and dissemination of geospatial data on a national basis. The FGDC Office of the Secretariat, administered in the U.S. Geological Survey in the Department of the Interior, provides program, management, coordination, administrative, and technical support for FGDC initiatives, activities, and priorities. The following table summarizes actual expenditures of appropriated funds for fiscal year 2014.

FGDC Office of the Secretariat Fiscal Year 2014 Expenditures

Activity	Function	Expenditure
Staff Operations and Projects	<ul style="list-style-type: none"> - Committee management/support - Contract execution/reporting - NSDI training and Web services - Special projects - Position, Navigation, and Timing Coordination Office support - Conferences 	\$2,300,000
Geospatial Platform Shared Service/ Line of Business*	<ul style="list-style-type: none"> - DOI/USGS contribution - GeoCloud - Services registry 	\$928,000
National Geospatial Advisory Committee (NGAC)	<ul style="list-style-type: none"> - Committee management - Meetings and facilitation - Subcommittee activities 	\$190,000
International Activities	<ul style="list-style-type: none"> - Group on Earth Observations (GEO), GEOSS - Global Spatial Data Infrastructure - Arctic Spatial Data Infrastructure 	\$83,000
Geospatial Standards	<ul style="list-style-type: none"> - Interoperability - FGDC and Geospatial Standards Working Group standards - Open Geospatial Consortium 	\$144,000
Bureau Shared Costs		\$155,000
Total Expenditures		\$3,800,000

*Contributions from other agencies are not included.

Appendix E

NSDI Strategic Plan – Fiscal Year 2014

Performance Summary

NSDI Plan Implementation Approach

The FGDC community is working collaboratively to implement the NSDI Strategic Plan. The FGDC Executive Committee has the lead responsibility for overseeing and monitoring the implementation of the plan. Designated Federal officials, appointed from the FGDC Executive Committee, are serving as executive champions for each of the objectives in the plan. Implementation plans were developed for each of the objectives in the strategic plan, describing how the actions will be implemented and measured. This summary describes the fiscal year (FY) 2014 implementation status for all of the actions and tasks included in the NSDI Strategic Plan and implementation plans.

Performance Summary

The NSDI Strategic Plan includes 3 strategic goals, 9 objectives, and 29 actions. The implementation plan for the strategic plan includes more detailed tasks and performance metrics for each of the actions in the strategic plan. The following table is a summary of the implementation status:

- **FY 2014.** The status report includes 28 tasks for fiscal year 2014. Of these tasks, 19 are reported as complete (shown in gray), and 9 are reported as not complete but in progress (shown in yellow).
- **FY 2015/2016.** The status report includes 37 draft tasks for FY 2015 and FY 2016. Currently, all of these draft tasks are reported as on schedule (shown in green).

The FGDC Executive Committee will continue to monitor the implementation of the goals and objectives in the NSDI Strategic Plan. The Executive Committee and FGDC Office of the Secretariat will continue to keep the FGDC community and key partners, such as the National Geospatial Advisory Committee, apprised of the status of implementation. The Executive Committee and Secretariat will also seek feedback on strategies to improve the implementation process and more effectively communicate results.

Additional information on the NSDI Strategic Plan, including the complete version of the fiscal year 2014 Status Report, is available at www.fgdc.gov/nsdi-plan.

STRATEGIC GOAL 1 – DEVELOP CAPABILITIES FOR NATIONAL SHARED SERVICES

Objective 1.1: Develop geospatial interoperability reference architecture

Action 1.1.1. Establish reference architecture to assure interoperability utilizing published open service standards to share data among unclassified, controlled unclassified information (CUI), and classified domains and missions.

Task	Performance Indicator	Task Status
1.1.1.1. Develop draft Geospatial Information Reference Architecture (GIRA)	Metric: Completion of draft GIRA FY 14 Target: Draft completed and prepared for distribution for comments	Complete
1.1.1.2. Review by participating agencies	Metric: Review of comments received from DHS, DOI, & NGA FY 14 Target: 100% comments adjudicated	In Progress
1.1.1.3. Review by FGDC agencies	Metric: Review of comments received FY 14 Target: 100% of comments received adjudicated	In Progress
1.1.1.4. Final approval of GIRA by FGDC and transmittal to the Federal CIO Council for inclusion as a Federal Enterprise Architecture reference document	Metric: Transmittal of GIRA to Federal CIO Council Draft FY 15 Target: 100% complete	On Schedule

Action 1.1.2. Define the role of the Geospatial Platform as a technology and collaboration environment for unclassified geospatial information sharing.

Task	Performance Indicator	Task Status
1.1.2.1. Develop components of GIRA that describe the role of the Geospatial Platform for information sharing	Metric: Draft completed and prepared for distribution for comments FY 14 Target: 100% complete	Complete
1.1.2.2. Develop and present outreach and training materials to educate the community on the role of the Geospatial Platform for supporting information sharing	Metric: Presentation on Geospatial Platform role for information sharing environment at one national geospatial meeting Draft FY 15 Target: 100% complete	On Schedule

Action 1.1.3. Identify Federal Chief Information Officer (CIO) Council requirements, shared services, and other infrastructure that can be reused and leveraged by the NSDI, including access control, search, and discovery.

Task	Performance Indicator	Task Status
1.1.3.1. Develop and deliver briefing to CIO Council/Shared Services Executive Steering Committee on Geospatial Platform and NSDI	Metric: Delivery of briefing Draft FY 15 Target: 100% complete	On Schedule
1.1.3.2. Work with OMB Financial Management Line of Business (OMB MAX team) to identify collaboration and technology re-use opportunities	Metric: Completion of outline/brief white paper on opportunities for sharing between MAX and Platform Draft FY 15 Target: 100% complete	On Schedule
1.1.3.3. Develop white paper on use/sharing of technology components existing within Departments and among the OMB shared services for the benefit of the NSDI	Metric: Completion of white paper Draft FY 15 Target: 100% complete	On Schedule

Objective 1.2: Establish the Geospatial Platform as the Federal geospatial data, services, and applications Web-based service environment		
Action 1.2.1. Establish Service Level or Interagency Agreements between and among government agencies and the Geospatial Platform Managing Partner.		
Task	Performance Indicator	Task Status
1.2.1.1. Complete FY 14 Funding Agreements	Metric: Completion of FY 14 Funding Agreements FY 14 Target: 100% of Agreements completed	Complete
1.2.1.2. Develop model SLA for customers hosting data on Geospatial Platform	Metric: Completion of model SLA FY 14 Target: 100% complete	In Progress
Action 1.2.2. Establish the Geospatial Platform Oversight Body and develop its operating procedures, scope, and roles for Federal and non-Federal members.		
Task	Performance Indicator	Task Status
1.2.2.1. Establish Charter for Geospatial Platform Oversight Body	Metric: Completion of Charter Draft FY 15 Target: 100% complete	On Schedule
1.2.2.2. Establish Geospatial Platform Oversight Body	Metric: Establishment of Oversight Body Draft FY 15 Target: 100% complete	On Schedule
Action 1.2.3. Implement the primary contracting mechanism to continue Geospatial Platform development and operations and maintenance for FY 2014 and beyond.		
Task	Performance Indicator	Task Status
1.2.3.1. Award contract for Geospatial Platform support	Metric: Award of contract FY 14 Target: 100% complete	Complete
Action 1.2.4. Implement communities of interest on the Geospatial Platform for collaboration, including a shared investment planning “Marketplace” and data theme communities, as outlined in OMB Circular A-16.		
Task	Performance Indicator	Task Status
1.2.4.1. Establish Geospatial Platform Marketplace as operational capability	Metric: Establishment of Marketplace capability FY 14 Target: 100% complete	Complete
1.2.4.2. Establish initial capabilities for A-16 Theme communities on Geospatial Platform	Metric: Establishment of initial capabilities for A-16 communities FY 14 Target: 100% complete	Complete
1.2.4.3. Define workflow for creating new communities on Geospatial Platform	Metric: Completion of workflow document Draft FY 15 Target: 100% complete	On Schedule
Action 1.2.5. Develop guidance for Federal agencies and their partners that describes how to use the Geospatial Platform to store and publish data and metadata and how to use services in the Platform’s common hosting infrastructure.		
Task	Performance Indicator	Task Status
1.2.5.1. Develop draft guidance for use of the Geospatial Platform	Metric: Completion of draft guidance FY 14 Target: 100% complete	Complete
1.2.5.2. Finalize guidance for use of the Geospatial Platform	Metric: Completion of final guidance Draft FY 15 Target: 100% complete	On Schedule
Action 1.2.6. Solicit advice and recommendations from the NGAC and community partners on ways to expand and enhance the Geospatial Platform for broader use and value by the non-Federal community.		
Task	Performance Indicator	Task Status
1.2.6.1. Include section on Geospatial Platform in 2014 FGDC Guidance to NGAC	Metric: Inclusion of Platform language in 2014 NGAC Guidance FY 14 Target: 100% complete	Complete
1.2.6.2. Provide briefings and seek feedback from NGAC on Geospatial Platform developments	Metric: Completion of NGAC briefings/feedback Draft FY 15 Target: 100% complete	On Schedule

Action 1.2.7. Define the concept and develop an implementation plan for a “Data as a Service” (DAAS) offering within the Geospatial Platform Marketplace.

Task	Performance Indicator	Task Status
1.2.7.1. Develop concept paper for Platform Marketplace DAAS offering	Metric: Completion of concept paper Draft FY 15 Target: 100% complete	On Schedule
1.2.7.2. Complete implementation plan for Platform Marketplace DAAS offering	Metric: Completion of implementation plan Draft FY 15 Target: 100% complete	On Schedule

Objective 1.3: Expand the use of cloud computing

Action 1.3.1. Define the Department of the Interior (DOI) Foundation Cloud Services consumer requirements, scope of service levels, and repeatable workflows for Geospatial Platform users.

Task	Performance Indicator	Task Status
1.3.1.1. (1) Draft acquisition Task Order and government cost estimate for Cloud-IaaS using a DOI-sanctioned vehicle, and complete review by FGDC Executive Committee; (2) Develop draft performance work statement measures/metrics	Metric: Completion of draft Task Order FY 14 Target: 100% complete	In Progress
1.3.1.2. Execute Cloud IaaS Task Order to initiate Geospatial Platform server hosting	Metric: Completion of final Task Order Draft FY 15 Target: 100% complete	On Schedule
1.3.1.3. Complete memorandum announcing Shared Cloud hosting and managed services bundles	Metric: Completion and distribution of memorandum and guide Draft FY 15 Target: 100% complete	On Schedule

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

Task	Performance Indicator	Task Status
1.3.2.1. Provide guidance, best practices, and case studies for agencies considering migration of agency-stored content and services to commodity cloud providers	Metric: Completion of workshop Draft FY 15 Target: 100% complete	On Schedule
1.3.2.2. Develop workshop report highlighting tutorial materials, best practices, and case studies for use of geospatial cloud services	Metric: Completion of workshop report Draft FY 15 Target: 100% complete	On Schedule

Action 1.3.3. Develop an options paper for expanding the currently defined common hosting environment with capabilities available in the commercial market.

Task	Performance Indicator	Task Status
1.3.3.1. Perform and document market review of existing geospatial service hosting options that support endorsed standards to enable Geospatial Platform community publishers to host compatible data and services.	Metric: Completion of market review Draft FY 16 Target: 100% complete	On Schedule

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

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

Task	Performance Indicator	Task Status
1.4.1.1. Complete implementation Action Plan for Objective 1.4 (FY 15 implementation)	Metric: Completion of Action Plan Draft FY 15 Target: 100% complete	On Schedule

Action 1.4.2. Create a mechanism for sharing information on the availability and use of consolidated acquisition vehicles.

Task	Performance Indicator	Task Status
1.4.2.1. Complete implementation Action Plan for Objective 1.4 (FY 15 implementation)	Metric: Completion of Action Plan Draft FY 15 Target: 100% complete	On Schedule

STRATEGIC GOAL 2 – ENSURE ACCOUNTABILITY AND EFFECTIVE DEVELOPMENT AND MANAGEMENT OF FEDERAL GEOSPATIAL RESOURCES		
Objective 2.1: Advance the portfolio management process for National Geospatial Data Assets (NGDA)		
Action 2.1.1. Identify foundational NGDAs and high-priority data themes and datasets to be included in NSDI portfolio management.		
Task	Performance Indicator	Task Status
2.1.1.1. Identify initial baseline of NGDA Datasets	Metric: Initial NGDA Datasets identified Target: FY14 Q3, 100%	Complete
2.1.1.2. Complete and submit NGDA Dataset maturity baseline assessment	Metric: NGDA Dataset Maturity Assessment complete Draft Target: FY15 Q1, 30%; FY15 Q3, 100%	On Schedule
2.1.1.3. Complete and submit NGDA Theme administrative maturity baseline assessment	Metric: NGDA Theme Administrative Maturity complete Draft Target: FY15 Q1, 40%; FY15 Q4, 100%; FY16 and beyond, Ongoing	On Schedule
Action 2.1.2. Define Federal roles and responsibilities in national data management, including metadata and data delivery, taking into account OMB Circular A–16 Supplemental Guidance portfolio management requirements, the Open Data Policy, Geospatial Platform, Data.gov, and other relevant requirements.		
Task	Performance Indicator	Task Status
2.1.2.1. Develop a process for selecting and maintaining Executive NGDA Theme Champions, NGDA Theme Leads, and NGDA Dataset Managers	Metric: Process developed and roles filled Draft Target: FY14 Q4, 100%; FY15 and beyond, Ongoing	Complete
Action 2.1.3. Finalize and implement the Circular A–16 Portfolio Implementation Plan to include reporting investments and defining investment requirements.		
Task	Performance Indicator	Task Status
2.1.3.1. Review/revise the definition of geospatial investment and budget reporting codes	Metric: Geospatial Investment and Budget Reporting Codes defined Draft Target: FY15 Q1, 100%	On Schedule
2.1.3.2. Apply the Geospatial Investment definition and budget reporting codes	Metric: Agencies have instituted revised definition and coding Draft Target: FY16 Q4, 30%; FY17 and beyond, Ongoing	On Schedule
2.1.3.3. Develop the A–16 NGDA Portfolio-level processes, reporting requirements, and roles and responsibility requirements for Federal geospatial portfolio management	Metric: Developed the A–16 processes, reporting requirements, and roles and responsibility requirements Draft Target: FY15 Q4, 100%	On Schedule
2.1.3.4. Develop a process for Federal agencies to identify resources required for managing geospatial data beyond their agency's mission	Metric: Process developed Draft Target: FY16 Q4, 100%	On Schedule
Action 2.1.4. Develop a process for monitoring and reporting on the progress of Circular A–16 Data Theme and Geospatial Platform Community management responsibilities, including the use and proliferation of content and technology standards.		
Task	Performance Indicator	Task Status
2.1.4.1. Develop NGDA Dataset maturity baseline assessment survey and tool	Metric: Survey and tool complete Target: FY14 Q4, 100%	In Progress
2.1.4.2. Develop NGDA Dataset report template and tool	Metric: Template and Tool complete Draft Target: FY15 Q1, 100%	On Schedule

2.1.4.3. Develop NGDA Theme administrative maturity baseline assessment survey and tool	Metric: Survey and tool complete Target: FY14 Q4, 100%	In Progress
2.1.4.4. Develop NGDA strategic theme plan template and tool	Metric: Template and Tool complete Draft Target: FY15 Q2, 100%	On Schedule
2.1.4.5. Develop NGDA Theme report template and tool	Metric: Template and Tool complete Draft Target: FY15 Q3, 100%	On Schedule
2.1.4.6. Develop NGDA Services and (or) applications investment report template, tool, and report	Metric: NGDA Services and (or) Applications Investment Report template complete; CPIC harvesting algorithms complete; NGDA Services and (or) Applications Investment Report 100% complete Draft Target: FY15 Q4, NGDA Services and (or) Applications Investment Report template 100% complete; CPIC harvesting algorithms 100% complete; FY16 Q2, NGDA Services and (or) Applications Investment Report 100% complete; FY17 and beyond, Ongoing	On Schedule
2.1.4.7. Develop NGDA portfolio summary report template and tool	Metric: Template and Tool complete Draft Target: FY16 Q3, NGDA Portfolio Summary Report Template and Tool 100% complete	On Schedule

Objective 2.2: Identify potentially duplicative investments and opportunities for collaborative investments

Action 2.2.1. Provide guidance and instructions to Federal agencies on use of the Geospatial Platform Marketplace.

Task	Performance Indicator	Task Status
2.2.1.1. Provide FGDC guidance for use of the Marketplace to FGDC member agencies	Metric: Submittal of guidance to FGDC agencies FY 14 Target: 100% complete	Complete
2.2.1.2. Provide draft guidance on use of the Marketplace that each FGDC member can customize for issuance of their own internal policies	Metric: Submittal of draft guidance for customization to FGDC agencies FY 14 Target: 100% complete	Complete

Action 2.2.2. Develop process and technology implementation to track use of the Geospatial Platform Marketplace and cost savings/avoidance through its application.

Task	Performance Indicator	Task Status
2.2.2.1. Prototype and/or mockup of cost savings/avoidance report with ties to data sources and collection methodology	Metric: Prototype submitted to FGDC Coordination Group for review and feedback Draft FY 15 Target: 100% complete	On Schedule
2.2.2.2. Implementation of Marketplace performance metrics dashboard on Geoplatform.gov	Metric: Dashboard available on Geoplatform.gov Draft FY 16 Target: 100% complete	On Schedule

Action 2.2.3. Solicit feedback from the Geospatial Platform user community on future requirements for Marketplace functionality.

Task	Performance Indicator	Task Status
2.2.3.1. Solicit feedback on Marketplace from attendees at national geospatial meetings	Metric: National conference presentations on Geospatial Platform given with feedback sessions FY 14 Target: Presentations at two (2) national conferences	Complete

STRATEGIC GOAL 3 – CONVENE LEADERSHIP OF THE NATIONAL GEOSPATIAL COMMUNITY		
Objective 3.1: Lead and participate in the development and coordination of national and international standards applicable to the geospatial community		
Action 3.1.1. Consult and collaborate with both existing and emerging geospatial communities to advance common standards and approaches.		
Task	Performance Indicator	Task Status
3.1.1.1. Identify, monitor, and participate in existing and emerging external geospatial communities (for example, volunteered geographic information, indoor navigation, mobile applications)	Metric: Periodic distribution of information about existing and potential opportunities for consultation and collaboration online FY 14 Target: At least one information outreach cycle	Complete
Action 3.1.2. Develop strategic partnerships with existing standards development organizations.		
Task	Performance Indicator	Task Status
3.1.2.1. Identify gaps and opportunities for partnerships with existing standards development organizations	Metric: Register FGDC participation in existing standards development organizations Target FY 14: 50% complete	In Progress
3.1.2.2. Encourage and maintain FGDC membership in existing standards organizations	Metric: Periodic synopsis of participation in existing standards organizations published online FY 14 Target: At least one publication cycle	In Progress
Action 3.1.3. Provide technical and educational support to agencies implementing NSDI standards and engage the standards community through workshops or online information-sharing tools such as Web meetings or social media.		
Task	Performance Indicator	Task Status
3.1.3.1. Identify means to provide wanted/needed technical and educational support to agencies implementing NSDI standards	Metric: Register training opportunities FY 14 Target: Needs assessment; 75% complete	In Progress
3.1.3.2. Develop repeatable (yearly) process to provide technical and educational support	Metric: Guidance on yearly process to provide technical and educational support Draft FY 16 Target: 100% complete	On Schedule
3.1.3.3. Continually update content on standards on www.fgdc.gov , including dynamic information	Metric: Information content about standards is continually maintained and updated on the FGDC website FY 14 Target: Timely updates	Complete
Objective 3.2: Convene the leadership of the geospatial and nongeospatial communities to develop public/private partnerships and shared approaches for addressing critical national issues		
Action 3.2.1. Engage with the NGAC, key geospatial organizations, and other stakeholders to inform policy decisions and collaboratively identify and address issues of common concern.		
Task	Performance Indicator	Task Status
3.2.1.1. Complete 2014 FGDC Guidance to NGAC describing study topics and focus areas	Metric: Completion of guidance FY 14 Target: 100% complete	Complete
3.2.1.2. Hold three in-person meetings with NGAC in FY 2014	Metric: Completion of in-person meetings FY 14 Target: Three in-person NGAC meetings	Complete
3.2.1.3. Hold NSDI Leaders Forum meetings to seek input and dialogue on key NSDI issues	Metric: Completion of Leaders Forum meetings FY 14 Target: One Leaders Forum meeting (Q4 FY 14)	Complete

3.2.1.4. Collaborate with NGAC subcommittees to develop products addressing 2014 NGAC guidance	Metric: Completion of NGAC products/papers addressing 2014 NGAC guidance Draft FY 15 Target: Adoption of all 2014 NGAC products/papers by December 2014	On Schedule
Action 3.2.2. Collaborate with the NGAC and other partners to review and develop common approaches to the issue of geolocation privacy.		
Task	Performance Indicator	Task Status
3.2.2.1. Incorporate geolocation privacy into 2014 FGDC guidance to the NGAC	Metric: Inclusion of geolocation privacy into 2014 NGAC guidance FY 14 Target: 100% complete	Complete
3.2.2.2. Collaborate with NGAC privacy subcommittee to address 2014 NGAC guidance	Metric: Completion of NGAC products/papers addressing 2014 NGAC guidance on geolocation privacy Draft FY 15 Target: Adoption of 2014 NGAC products/papers by December 2014	On Schedule
Objective 3.3: Raise awareness of the NSDI and its impact on critical national and international issues		
Action 3.3.1. Develop and implement a communication strategy and outreach plan to promote the benefits of NSDI data and the goals of the NSDI Strategic Plan.		
Task	Performance Indicator	Task Status
3.3.1.1. Complete implementation Action Plan for Objective 3.3 (FY 15 implementation)	Metric: Completion of Action Plan Draft FY 15 Target: 100% complete	On Schedule
Action 3.3.2. Collaborate with the NGAC and other partners to review and develop common approaches to the issue of geolocation privacy.		
Task	Performance Indicator	Task Status
3.3.2.1. Complete implementation Action Plan for Objective 3.3 (FY 15 implementation)	Metric: Completion of Action Plan Draft FY 15 Target: 100% complete	On Schedule

Appendix F

Glossary of Abbreviations and Terms

ACWI	Advisory Committee on Water Information	INCITS	International Committee for Information Technology Standards
ANSI	American National Standards Institute	INSPIRE	Infrastructure for Spatial Information in the European Community
BLM	Bureau of Land Management	IOOS	Integrated Ocean Observing System
CadNSDI	Cadastral National Spatial Data Infrastructure	ISO	International Organization for Standardization
CAP	Cooperative Agreements Program	IT	Information Technology
CIO	Chief Information Officer	lidar	light detection and ranging
CKAN	Comprehensive Knowledge Archive Network	MCSO	Marine and Coastal Spatial Data
CPIC	Capital Planning and Investment Control	MPPN	Marine Planning Portal Network
CSDGM	Content Standard for Digital Geospatial Metadata	NAIP	National Agriculture Imagery Program
CSW	Catalog Service for the Web	NBG	National Boundaries Group
DHS	Department of Homeland Security	NCGMP	National Cooperative Geologic Mapping Program
DOI	U.S. Department of the Interior	NDOP	National Digital Orthophoto Program
DOL	U.S. Department of Labor	NGA	National Geospatial-Intelligence Agency
DOT	U.S. Department of Transportation	NGAC	National Geospatial Advisory Committee
EPA	U.S. Environmental Protection Agency	NGDA	National Geospatial Data Asset
ESA	Ecological Society of America	NHD	National Hydrography Dataset
FGDC	Federal Geographic Data Committee	NOAA	National Oceanic and Atmospheric Administration
FSA	Farm Service Agency	NPS	National Park Service
FWS	U.S. Fish and Wildlife Service	NRCS	Natural Resources Conservation Service
GAO	U.S. Government Accountability Office	NSDI	National Spatial Data Infrastructure
GENC	Geopolitical Entities, Names, and Codes	NVC	National Vegetation Classification
GEO	Group on Earth Observations	NWI	National Wetlands Inventory
GeoCloud	Geospatial Cloud	OGC	Open Geospatial Consortium, Inc.
GeoCONOPS	Geospatial Concept of Operations	OMB	Office of Management and Budget
GEOS	Global Earth Observation System of Systems	PLSS	Public Land Survey System
GGIM	Global Geospatial Information Management	RPA	Real Property Asset
GIRA	Geospatial Interoperability Reference Architecture	RPADS	Real Property Asset Data Standard
GIS	Geographic Information System	SAOGI	Senior Agency Official for Geospatial Information
GML	Geography Markup Language	SDI	Spatial Data Infrastructure
GNSS	Global Navigation Satellite System	SLA	Service Level Agreement
GSDI	Global Spatial Data Infrastructure	SSWD	Subcommittee on Spatial Water Data
GWG	Geospatial Intelligence Standards Working Group	UHDWG	Users/Historical Data Working Group
HIFLD	Homeland Infrastructure Foundation-Level Data	UN-GGIM	United Nations Global Geospatial Information Management Working Group
HLS	Homeland Security	USDA	U.S. Department of Agriculture
HTTP	Hypertext transfer protocol	USFS	U.S. Forest Service
IaaS	Infrastructure as a Service	USGEO	U.S. Group on Earth Observations
IBC	International Boundary Commission	USGS	U.S. Geological Survey
IBWC	International Boundary and Water Commission	WFS	Web Feature Service
		XML	Extensible Markup Language

