

FGDC Annual Report to OMB Format for Agency Reports – FY 2004

The following outline should be used by FGDC Member Agencies (or Bureaus) for their Annual Spatial Data Reports, which will be consolidated by the FGDC and submitted to OMB. Reports **should be brief, using bullets where possible**. Please provide only the information that will be useful for OMB to assess the agencies' achievements and for establishing future direction.

Part A

GENERAL FEDERAL AGENCY RESPONSIBILITIES REPORT (All Agencies)

1. Agency or Bureau: **Department of Commerce, US Census Bureau
Department of Commerce, NOAA**

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5. Subcommittee or Working Group Participation (Subcommittees or Working Groups your agency is involved with, but does not lead).

FGDC Base Cartographic Subcommittee
FGDC Cadastral Subcommittee
GPS Interagency Council
FGDC Subcommittee on Spatial Climate Subcommittee
FGDC Biological Data Working Group
FGDC Clearinghouse Working Group
FGDC Coordination Group
FGDC Standards Working Group
FGDC Civil Imagery and Remote Sensing Taskforce
FGDC Homeland Security Working Group
FGDC Tribal Working Group
FGDC Subcommittee on Federal Geodetic Control (Lead)
FGDC Subcommittee on Marine and Coastal Spatial Data (Lead)
FGDC Marine Boundary Working Group (Lead)
FGDC Subcommittee on Cultural & Demographic Data (Lead)
FGDC Cultural and Demographic Statistics Working Group (Lead)
FGDC Governmental Units Working Group (Lead)

6. Strategy: Has your agency prepared a detailed strategy for integrating geographic information and spatial data activities into your business process - in coordination with the FGDC strategy, pursuant to OMB Circular A-16? If yes, briefly describe.

Three primary DOC agencies are involved in this: (a) the U.S. Census Bureau; (b) NOAA's Coastal Services Center; and (c) NOAA's National Geodetic Survey. Geographic and spatial data activities are central to their business processes.

A) The primary business process of the U.S. Census Bureau has always depended upon geographic based information; demographic data tabulation is inextricably based upon and defined by geographic boundaries. In respect to FGDC standards and coordination, agency policies are established and continue to be in management's interest and oversight.

B) The Coastal National Spatial Data Infrastructure (NSDI) theme of the NOAA Coastal Services Center's strategic plan outlines a strategy pursuant to Circular A-16. The goals specifically related to spatial data activities are as follows:

- The coastal management community understands and embraces the vision, concepts, and benefits of the NSDI.
- Geospatial coastal and marine framework data are readily available for use by the coastal management community.
- Innovative practices and technologies that facilitate the discovery, collection, description, access, and preservation of geospatial data are widely available to the coastal zone management community.
- Foster, develop, and implement geospatial data applications in response to the needs of the coastal and marine communities.

C) The collecting, processing, archiving, and distribution of spatial data are the principal activities of the NOAA's National Geodetic Survey (NGS). The business process of the agency and these activities are one in the same.

7. Compliance: How are your spatial data holdings compliant with FGDC Standards? How is your agency involved in Framework Standards development and adoption? Also, please list the FGDC Standards you are using or plan to use in your organization.

NOAA and Census are both members of the FGDC Standards Working Group and are well aware of the standards that have been endorsed or are in the FGDC standards process. For example NOAA's Coastal Services Center has adopted and uses FGDC standards where applicable, including the *Content Standards for Digital Geospatial Metadata*, the *Shoreline Metadata Profile of the Content Standards for Digital Geospatial Metadata*, and the *Remote Sensing Extension of the Content Standard for Geospatial Metadata*.

The draft Geodetic Data Content Standard has, along with the other draft framework data content standards, undergone the 60-day public review and adjudication of comments is underway. The agency's pertinent data holdings will be compliant with this standard. The draft Shoreline Data Content Standard has

been develop and is undergoing agency review. Other existing standards currently used are:

- Geospatial Positioning Accuracy Standards, Part 1: Reporting Methodology
- Geospatial Positioning Accuracy Standards, Part 2: Standards for Geodetic Networks
- Spatial Data Transfer Standard (SDTS) Part 6: Point Profile Metadata Profile for Shoreline Data

FGDC standards do not mandate internal business practices; therefore, Census Bureau spatial data compliance is solely at the exchange level. In regards to data exchange and availability, Census Bureau data are compliant with all applicable approved FGDC standards, including the Content Standard for Digital Geospatial Metadata version 2 and the Geospatial Positioning Accuracy Standards: Part 3 National Standard for Spatial Data Accuracy.

The Census Bureau participates in Framework standards development and adoption in the following capacity:

- As the theme lead for the Framework Governmental Unit Boundary Standard, coordinating the content development, public review and comments adjudication, and standards processing for the Governmental Units Framework theme,
 - Through implementing the draft Framework Governmental Unit Boundary Standard in the WebTIGER pilot project, a prototype system to provide open, vendor-neutral access to TIGER[®] data and map images over the Internet using non-proprietary, standards-based software interfaces and data encodings.
 - Through participation on the Framework standards harmonization team to harmonize the content of the Framework standards and to address the common, cross-cutting issues in the Framework standards.
8. Performance Measures: Does your agency have performance measures for spatial data activities? If so, please list the measures and target and describe how they contribute to development of the NSDI.

Yes. The Census Bureau has two performance measures associated with spatial data:

Measure 1a. Achieve pre-determined collection rates for Census Bureau censuses and surveys in order to provide statistically reliable data to support effective decision-making of policymakers, businesses, and the public.

The Boundary and Annexation Survey is the vehicle to collect any changes to governmental unit boundaries. The Census Bureau had a performance measure of an 83% response rate. This goal was achieved with an actual response rate of 85.5%. Updated boundaries are released publicly in the annual release of the TIGER/Line files, contributing to the NSDI.

The second performance measure associated with spatial data is Measure 1d: Correct street features in TIGER (geographic) database to more effectively support: Census Bureau censuses and surveys, facilitate the geographic partnerships between federal, state, local and tribal governments, and support the E-Government initiative in the President's Management Agenda.

This measure was met by the completion of an additional 18.6% (600) of the Nations counties by 9/30/2004. These spatially accurate files will be released publicly in TIGER-derived products, on the web, and will be furnished to the US Geological Survey for incorporation into the National Map.

NOAA's Strategic Plan outlines performance measures based on mission goals. NOAA's mission goals are ecosystems, water and weather, commerce and transportation, and climate. Spatial data are critical to the success of the mission goals and their supporting programs. NOAA's performance measures can be found in the NOAA Strategic Plan at <http://www.spo.noaa.gov/>.

NOAA National Geodetic Survey's (NGS) performance measure that is specifically related to spatial data is: Percentage of U.S. counties rated as enabled or substantially enabled with accurate positioning capacity. Twenty-five percent are currently substantially enabled, with target goal 90% enabled by 2011. The local capacity for accurate positioning is fundamental to reliable geographic data.

9. Reducing Redundancy of Planned Acquisitions Do you use the Geospatial One-Stop portal, geodata.gov, to ensure that the data are not already available?

The Census Bureau and NOAA provide information on planned investments in geospatial information to the Geospatial One-Stop portal through the harvesting of the planned data acquisition metadata files posted to the US Census Bureau node of the FGDC Metadata Clearinghouse and by directly posing planned acquisitions on the Geospatial One-Stop Portal.

Furthermore, the Census Bureau maintains direct contact with more than 40,000 state, local, and tribal governments and, when possible, takes full advantage of local information. Examples of collaboration include the Boundary and Annexation Survey (BAS), and the MAF/TIGER Accuracy Improvement Program, both of which utilize state, local, and tribal resources in updating data holdings. The TIGER Enhancement Database (TED) integrates and maintains the state, local, and tribal contact information for those who provide local GIS files to the Census Bureau, with the content, accuracy and other relevant information pertaining to the local dataset. The Census Bureau provides periodic releases of information from the TED to other Federal and State agencies upon request. Lastly, the Census Bureau maintains close contact with other agencies that have an interest in geographic data and, when possible, collaborates with them in collection and provides them with extracts from Census Bureau holdings.

NOA NGS uses geodata.gov for imagery to assist in shoreline mapping. NGS coordinates data collection activities with its federal partners through the Federal Geodetic Control Subcommittee (FGCS) and works jointly with state and

local entities in the collection of geodetic survey data. The FGCS website hosts the Federal Survey: <http://www.ngs.noaa.gov/FIELDOPS/opsplan.html>

10. Collection: Do your agency contracts and grants involving data collection include costs for following and using NSDI standards?

Yes, where applicable. All data development contracts/grants at NOAA's Coastal Services Center (CSC) require the contractor/grantee to develop metadata that meet FGDC's guidelines or to provide the CSC with the information needed to develop such metadata. Additionally, NOAA CSC is determining how best to incorporate the Geospatial Grant Guidelines for Federal Partners issued by the FGDC and Geospatial One-Stop (GOS) into future grants announcements. NOAA NGS statements of work include requirements to meet the pertinent NSDI standards, the cost of which is covered by the contractor's cost estimates.

11. Clearinghouse for Existing Data: Is all the data and/or metadata that your agency is able to share with the public published on the NSDI Clearinghouse? If not, please cite barriers encountered.

Yes. Census Bureau metadata on geospatial data holdings is available on the US Census Bureau node of the FGDC Metadata Clearinghouse and on the Geospatial One-Stop portal through harvesting of the data from the US Census Bureau node.

In addition, there is a NOAA Clearinghouse for metadata from across all NOAA Line Offices known as NOAA Server, which hosts 14 data clearinghouse nodes. Finally, NOAA's Coastal Services Center hosts and FGDC Clearinghouse gateway into the larger NSDI network of nodes. NOAA nodes are also being harvested by the Geospatial One-Stop project.

12. Clearinghouse for Planned Investments: Is your agency posting information on planned investments in geospatial information to the Geospatial One-Stop portal to encourage partnerships and leverage investments in the acquisition of geospatial data? If not, please cite when you will begin doing so and what barriers you have encountered that would prevent posting this information.

The Census Bureau and NOAA provide information on planned investments to the Geospatial One-Stop portal; however, the requirement to submit metadata for each investment will greatly inhibit the success of this module. A more effective method is needed to keep this module functioning and to encourage greater agency participation.

13. Geodata.gov: If metadata for your agency's geospatial data/information holdings is on a Clearinghouse Node already, has that Node been registered on geodata.gov for scheduled harvesting visits? If not, when is the Node scheduled to begin regular visits by the geodata.gov harvester?

The Census Bureau provides information on geospatial data/information holdings on the US Census Bureau node of the FGDC Clearinghouse, and this node is registered on geodata.gov for weekly harvesting visits.

NOAA has registered all of its nodes and is working out the details of harvesting with GOS staff.

14. E-Gov: How are you using geospatial data in your mission activities to provide better services? (Please list)

Many of DOC's projects are E-gov applications.

The National Ocean Service (NOS) Enterprise Geographic Information System project is an example of an E-GOV application that's providing e-services to its constituents. Geospatial data from all of the offices within NOS will be included in this system. The NOS Enterprise Spatial Information System is developing a unified and coordinated enterprise approach to spatial information management, utilization, and access across NOS. Using this approach to spatial information systems (GIS, remote sensing, Internet-based applications, and others) ensures that the power of diverse data is harnessed and makes it possible for internal and external users to benefit from NOS spatial data efforts. NOS spatial data resources can be accessed at the NOS Data Explorer (<http://www.oceanservice.noaa.gov/dataexplorer/welcome.html>).

All aspects of the NGS primary mission of providing geodetic control for spatial reference are reliant upon geospatial data. Providing electronic access to spatial reference has major improvement in the agency's delivery of geospatial data products and services, and include:

- Web access to geodetic control data sheets
- Web access to GPS Continuously Operating Reference Station (CORS) data,
- Web-based On-line User Positioning Service (OPUS)

The data are also used in-house to accurately position aircraft when gathering remote sensing imagery for shoreline mapping and airport surveys.

From the Census Bureau:

- QuickFacts (<http://quickfacts.census.gov/qfd/index.html>), provides "Quick, easy access to facts about people, business, and geography", through general geographic based demographic and economic statistics.
- American FactFinder (<http://factfinder.census.gov/servlet/BasicFactsServlet>), accesses datasets and maps for population, housing, economics by geospatial references.
- Tiger/Line files (<http://www.census.gov/geo/www/tiger/index.html>), provides access to the publicly available detailed spatial data holdings of the Census Bureau
- Participation in FedStats (<http://www.fedstats.gov/>), which provides access to statistics collected by more than 70 federal agencies.

15. Geospatial One-Stop: How is your agency involved in the Geospatial One-Stop (Funding Partner, Channel Stewardship, geospatial framework data

interoperability pilots, posting standards based Web Mapping services to the portal, etc)?

- Census and NOAA are principle partners in Geospatial One-Stop
 - Funding Partner
 - GOS Board of Directors
 - Steward of 5 Channels:
 - Administrative and Political Boundaries
 - Cultural, Society, and Demographic Data
 - Oceans and Estuaries
 - Atmosphere and Climate
 - Locations and Geodetic Networks
- Lead Agency for the Framework Governmental Unit Boundary standard
- Lead agency involved in the development of the Geodetic Data Content Standard.
- Participation in the development of the Geospatial One-Stop Framework Base standard and on the Framework standards harmonization team
- Participation in the Geospatial One-Stop portal development team
- As the chair of the FGDC Marine and Coastal Spatial Data Subcommittee and the FGDC Marine Boundary Working Group, NOAA is coordinating and communicating the objectives of the Geospatial One-Stop to its constituents and members of the subcommittee and working group.
- NOAA NGS is also taking the lead in development of the Shoreline Data Content Standard.
- The NGS Survey Control Map, used for retrieving geodetic control data, and the Shoreline Data Explorer are accessible via the Geospatial One-Stop Portal.

16. Enterprise Architecture: Is geospatial data a component of your enterprise architecture? Please provide a brief summary of how geospatial data fits into your enterprise architecture.

Geospatial data is a fundamental component of all statistical data collection activities, tabulation operations, and publication activities at the Census Bureau. The foundation of Census geospatial data is TIGER, which provides geospatial data about individual features, address ranges, statistical and legal boundaries, and names, where applicable, for all of the U.S., Puerto Rico, and the Island Areas.

NOAA Coastal Services Center (CSC) is leading the National Ocean Service (NOS) Enterprise Geographic Information System project. Geospatial data from all of the offices within NOS will be included in this system. The NOS Enterprise Spatial Information System is developing a unified and coordinated enterprise approach to spatial information management, utilization, and access across NOS. Using this approach to spatial information systems (GIS, remote sensing, Internet-based applications, and others) ensures that the power of diverse data is harnessed and makes it possible for internal and external users to benefit from NOS spatial data efforts.

Finally, NOAA National Geodetic Survey (NGS) performs functions necessary for NOAA to attain its objective to “Develop the National Spatial Reference System (NSRS),” which is part of NOAA’s strategic goal to “Promote Safe Navigation.” NSRS provides the United States with a common geographic framework, is the foundation for the National Spatial Data Infrastructure (NSDI), and is essential for mapping, charting, navigation, boundary determination, property delineation, resource evaluation surveys, and scientific applications. Efforts to increase the reliability, accessibility, availability, accuracy, currency, and timeliness of NSRS are fully coordinated with NOAA’s enterprise architecture.

17. Partnerships: What efforts are being taken to coordinate data and build partnerships at the field level for data collection and standards development? Identify partnerships and data sharing activities with other federal agencies, state, local, and tribal governments and other entities. Does your agency have any formal agreements or MOU’s concerning data sharing and integration?

NOAA NGS is very actively involved in numerous partnerships with other entities in providing access to consistent and accurate spatial reference.

- Over half of the states have a Geodetic State Advisor in jointly funded agreement between NGS and the individual state. Geodetic State Advisors provide liaison between the state and NGS and assist in coordinating data collection and standards implementation in the state.
- Sixty-one state, local, academic, private, and other federal agencies partner with NGS in providing Global Positioning System (GPS) data from Continuously Operating Reference Stations (CORS) to the NGS-managed National CORS network. NGS distributes data from National CORS over the Internet to aid GPS users in accurate positioning activities.
- NGS accepts survey data from state and local organizations for validation, archiving in and distribution from the NGS database. These data are used to build out the nationwide Federal Base, Cooperative Base, and User Densification Networks of permanently marked geodetic control points.
- NGS works in local partnerships developing spatial reference centers in California and Louisiana as well as with state geodetic surveys in North and South Carolina and with the Wisconsin Department of Transportation to implement Height Modernization in those states. Height Modernization is an NGS-led effort to provide local access to consistent and accurate height information through the use of GPS technology.

The Census Bureau continues a long-standing policy of interagency cooperation, as well as cooperation with state, local, and tribal governments for data collection. For example, the Census Bureau continues to collaborate with the USGS on the National Map project. At the state, local, and tribal level, Census conducts the Boundary and Annexation Survey (BAS) to elicit current boundary, name, and defining geographic content from state, local, and tribal entities. Furthermore, Census has maintained a key role in standards development for over forty years; dating back to original FIPS State, County, and Associated

Areas Code development of the 1960s. The Census Bureau has an active partnership program to coordinate the use of state, local and tribal geospatial data, and works closely with the members of the National States Geographic Information Council, I-Teams, and similar organizations.

The Coastal National Spatial Data Infrastructure theme is one of the NOAA Coastal Services Center's (CSC) four strategic themes. Through its many partnerships and projects, CSC engages coastal and marine customers and encourage participation in NSDI activities, demonstrates the benefits of participation in the NSDI to existing and prospective coastal and marine management practitioners, and promotes the principles and practices of the NSDI to the coastal and marine community through formal and informal education, training, and marketing. Partnerships between CSC and coastal management organizations give rise to over 100 projects each year. These projects produce new tools and approaches that often can be applied nationwide. Many of the Coastal Services Center's activities are undertaken in collaboration with partners from the NOAA line offices—National Ocean Service (NOS), National Environmental Satellite, Data, and Information Service (NESDIS), Office of Oceanic and Atmospheric Research (OAR), National Marine Fisheries Service (NMFS), and National Weather Service (NWS)— other federal agencies, public and private coastal resource management and the private sector.

Additionally, the NOAA Coastal Services Center holds the bi-annual Coastal GeoTools Conference which brings the all sectors of the coastal resource community together.

18. Concerns or Lessons Learned: Are there areas or issues regarding spatial data that require attention, or lessons learned that you would like to share with others? Please describe.

There are four concerns to be addressed:

- Consistency – The ability to smoothly integrate a point's coordinates with other points from different sources has been addressed by the promulgation of official national datums. The North American Datum of 1983 (NAD 83) applies to horizontal coordinates and ellipsoid heights and the North American Vertical Datum of 1988 (NAVD 88) applies to vertical coordinates. Software tools for have been developed by NGS to transform coordinates between datums.
- Accuracy – The ability to regularly achieve high levels (a few centimeters) of positional accuracy has been vastly improved by employing GPS techniques developed by NGS. This effort continues in concert with enhancements to GPS satellites.
- Timeliness – The ability to determine consistent and accurate coordinates when there needed (i.e., as quickly as possible) is the major issue at present, as the longer it takes to accurately position a point, the greater the labor costs per point. Techniques, procedures, and best practices are continually being developed by NGS to reduce the time required to position a point to the desired level of accuracy.
- State Legislation on spatial reference – The issue is relevancy of existing state legislation regarding spatial reference for establishing boundaries and the use of electronically accessed geodetic control (i.e.,

GPS continuously operating reference stations) for this purpose. This is primarily of concern to land surveyors who use NGS data. Most states have explicit language in their legislation regarding land surveying and how valid boundaries are referenced. Most of this legislation was written in the era when classical line-of-sight surveying techniques were used to connect, either directly or indirectly, boundary surveys to permanently marked geodetic control. The use of GPS techniques has revolutionized surveying such that a land surveyor no longer needs to physically visit a survey control marker. Some existing state legislation may no longer adequately relevant to current technology.