

The Department Has Made Progress Meeting Its Responsibilities Under the Geospatial Data Act But Must Improve Controls to Ensure Full Compliance

FINAL REPORT NO. OIG-21-001-A

OCTOBER 1, 2020



U.S. Department of Commerce
Office of Inspector General
Office of Audit and Evaluation



October 1, 2020

MEMORANDUM FOR: Karen Dunn Kelley
Deputy Secretary of Commerce

FROM: Frederick J. Meny, Jr.
Assistant Inspector General for Audit and Evaluation

SUBJECT: *The Department Has Made Progress Meeting Its Responsibilities Under the Geospatial Data Act But Must Improve Controls to Ensure Full Compliance*
Final Report No. OIG-21-001-A

Attached is our final report on our audit of the U.S. Department of Commerce's (the Department's) collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data. Our objective was to assess the Department's progress toward compliance with the 13 covered agency responsibilities under section 759(a) of the Geospatial Data Act (Pub. L. No. 115-254, H.R. 302).

We found the following:

- I. The Department should ensure its new geospatial data strategic plan aligns with the mission and design controls for adequate implementation.
- II. The Department should develop procedures to ensure compliance with its *Policy on Planned Geospatial Acquisitions*.
- III. Data harvesting issues are causing inconsistencies in Department metadata.
- IV. Census Bureau should document compliance with metadata standards as part of its system of internal control for geospatial data.

In its September 23, 2020, response to our draft report, the Department agreed with our findings and recommendations. The formal response is included within the final report as appendix E.

Pursuant to Department Administrative Order 213-5, please submit to us an action plan that addresses the recommendations in this report within 60 calendar days. This final report will be posted on OIG's website pursuant to sections 4 and 8M of the Inspector General Act of 1978, as amended (5 U.S.C. App., §§ 4 & 8M).

We appreciate the cooperation and courtesies extended to us by your staff during our audit. If you have any questions or concerns about this report, please contact me at (202) 482-1931 or Kevin Ryan, Director for Audit and Evaluation, at (202) 695-0791.

Attachment

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Report in Brief

October 1, 2020

Background

On October 5, 2018, Congress enacted the Geospatial Data Act of 2018 (GDA) to foster efficient management of geospatial data, technologies, and infrastructure through enhanced coordination among the federal government, State and local authorities, the private sector, and academia. The GDA requires inspectors general of covered agencies to audit the agencies' collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data, not less than once every 2 years. This is our initial audit of the U.S. Department of Commerce (the Department) under the GDA.

Department geospatial data of national significance is collected, produced, acquired, maintained, distributed, used, and preserved by either the National Oceanic and Atmospheric Administration (NOAA) or the U.S. Census Bureau.

Why We Did This Review

Our original objectives—in accordance with the GDA—were to review the Department's (1) compliance with the standards for geospatial data, including metadata for geospatial data established under section 757; (2) compliance with the requirements under subsection 759(a); and (3) compliance on the limitation on the use of federal funds under section 759A.

We revised our audit objective to assess the Department's progress toward compliance with the requirements of subsection 759(a). Because the Department's National Geospatial Data Assets and management thereof reside within NOAA and the Census Bureau, we limited our scope to those two operating units and the activities of the Department's Senior Agency Official for Geospatial Information, Chief Data Officer, data governance board, and geospatial working group. (See appendix A for additional details.)

OFFICE OF THE SECRETARY

The Department Has Made Progress Meeting Its Responsibilities Under the Geospatial Data Act But Must Improve Controls to Ensure Full Compliance

OIG-21-001-A

WHAT WE FOUND

We found the Department has made progress towards complying with the 13 requirements under section 759(a). In addition, we noted the need for improvements in the following areas:

1. The Department should ensure its new geospatial data strategic plan aligns with the mission and design controls for adequate implementation.
2. The Department should develop procedures to ensure compliance with its *Policy on Planned Geospatial Acquisitions*.
3. Data harvesting issues are causing inconsistencies in Department metadata.
4. Census Bureau should document compliance with metadata standards as part of its system of internal control for geospatial data.

WHAT WE RECOMMEND

We recommend that the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information do the following:

1. Ensure that the Department's geospatial data strategy aligns and integrates with the Department's mission and strategy.
2. Define a system of internal control to ensure the geospatial data strategic plan is effectively implemented and that progress against it is appropriately tracked.
3. Develop Department-wide procedures to ensure operating units consistently implement the *Department's Policy on Planned Geospatial Acquisitions*.
4. Work with the U.S. Department of the Interior to design internal control to ensure metadata on GeoPlatform is both accurate and current.
5. In the interim, work with the U.S. Department of the Interior to notify GeoPlatform users that some metadata may not be current.

We recommend that the Census Bureau's Chief of the Geography Division do the following:

6. Assess geospatial data standards licensing needs and ensure the bureau adequately documents compliance with data and metadata standards.

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Cover: Herbert C. Hoover Building main entrance at 14th Street Northwest in Washington, DC. Completed in 1932, the building is named after the former Secretary of Commerce and 31st President of the United States.

Introduction

On October 5, 2018, Congress enacted the Geospatial Data Act of 2018 (GDA)¹ to foster efficient management of geospatial data, technologies, and infrastructure through enhanced coordination among the federal government, State and local authorities, the private sector, and academia. The GDA requires inspectors general of covered agencies to audit the agencies' collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data, not less than once every 2 years.² This is our initial audit of the U.S. Department of Commerce (the Department) under the GDA.

Geospatial Data

Under the GDA, geospatial data is defined, with several exceptions, as

- (A) ... information that is tied to a location on the Earth, including by identifying the geographic location and characteristics of natural or constructed features and boundaries on the Earth, and that is generally represented in vector datasets by points, lines, polygons, or other complex geographic features or phenomena;
- (B) may be derived from, among other things, remote sensing, mapping, and surveying technologies;
- (C) includes images and raster datasets, aerial photographs, and other forms of geospatial data or datasets in digitized or non-digitized form.³

Department geospatial data of national significance is collected, produced, acquired, maintained, distributed, used, and preserved by either the National Oceanic and Atmospheric Administration (NOAA) or the U.S. Census Bureau. Some of the uses of Departmental geospatial data include the following:

- Providing inputs for models, forecasts, and predictions for weather, climate, fisheries, and the U.S. economy, and helping policy makers understand related issues.
- Enhancing decision support services by providing socio-economic data for emergency managers.
- Producing maps and charts for marine transportation and recreational boating.
- Providing the geographic foundation for every economic and social data product produced by Census Bureau, including the Decennial Census.

¹ Pub. L. No. 115-254, H.R. 302, Subtitle F.

² Pub. L. No. 115-254, H.R. 302 § 759(c).

³ Pub. L. No. 115-254, H.R. 302 § 752(5).

Metadata and the GeoPlatform

GDA requires covered agencies to document geospatial data with relevant metadata and make that metadata available through the *GeoPlatform*—an electronic service that provides access to geospatial data and metadata to the general public.⁴

Metadata for geospatial data, as defined under GDA, “means information about geospatial data, including the content, source, vintage, accuracy, condition, projection, method of collection, and other characteristics or descriptions of the geospatial data.”⁵ Standardized, structured metadata ensures geospatial data is used appropriately, contributes to credible analysis, and facilitates search and access to data.

National Geospatial Data Asset Data Themes and Datasets

National Geospatial Data Asset (NGDA) data themes represent conceptual topics describing digital spatial information for the United States and consist of associated datasets (with attribute records and coordinates).⁶ Data themes are the primary topics and subjects for which the coordinated development, maintenance, and dissemination of geospatial data is led by a covered agency. Department operating units are the designated lead or co-lead for 6 of the 17 NGDA data themes, with NOAA responsible for 4 and the Census Bureau responsible for 2. For the scope of this audit, we focused on the Department’s management of its 6 data themes and their associated datasets.⁷

Federal Geographic Data Committee and the National Spatial Data Infrastructure (NSDI)

The Federal Geographic Data Committee (FGDC) provides direction and oversight for geospatial initiatives and activities. The GDA designated FGDC as the lead entity in the executive branch to develop, implement, and review policies, practices, and standards relating to geospatial data.⁸ FGDC is responsible for overseeing and coordinating the NSDI.

NSDI is the technology, processes, standards, and employees necessary to promote geospatial data sharing throughout the federal government, State, Tribal, and local governments, and the private sector (including nonprofit organizations and institutions of higher education).⁹ As one of its responsibilities, the FGDC creates a strategic framework, plans, and initiatives that form the foundation for future NSDI strategic plans. The new NSDI strategic plan that is currently under development will build upon that foundation by identifying new strategic goals and objectives that will further develop the NSDI and meet requirements within the GDA.

⁴ See Pub. L. No. 115-254, H.R. 302 § 759(a)(6). The GeoPlatform is available online at geoplatform.gov (accessed August 28, 2020).

⁵ See Pub. L. No. 115-254, H.R. 302 § 752(11).

⁶ Pub. L. No. 115-254, H.R. 302 § 756 (a)(1) and (2).

⁷ See appendix C of this report for a list of the Department’s data themes and datasets.

⁸ Pub. L. No. 115-254, H.R. 302 § 753(a).

⁹ Pub. L. No. 115-254, H.R. 302 § 752(13).

Covered Agency Responsibilities

GDA section 759(a) defines 13 responsibilities for covered agencies. See appendix B for a summary, listing, and description of these 13 responsibilities.

As defined under GDA, the Department of Commerce is a covered agency subject to these requirements.

Objective, Findings, and Recommendations

Our audit objective was to assess the Department's progress toward compliance with the 13 covered agency responsibilities under section 759(a) of GDA. See appendix A for a full description of our objective, scope, and methodology.

We found the Department has made progress towards complying with the 13 requirements under section 759(a). We summarize our findings for all 13 requirements in appendix B. In addition, we noted the need for improvements in the following areas:

- I. The Department should ensure its new geospatial data strategic plan aligns with the mission and design controls for adequate implementation.
- II. The Department should develop procedures to ensure compliance with its *Policy on Planned Geospatial Acquisitions*.
- III. Data harvesting issues are causing inconsistencies in Department metadata.
- IV. Census Bureau should document compliance with metadata standards as part of its system of internal control for geospatial data.

I. The Department Should Ensure its New Geospatial Data Strategy Aligns with the Mission and Design Controls for Adequate Implementation

The Department has made progress in readying itself to implement a geospatial data strategy consistent with the GDA, OMB mandates, and best practice. First, the Department has established the position of the Chief Data Officer (CDO).¹⁰ The CDO is the Department's primary official charged with oversight and governance of the Department's overall data strategy, which includes geospatial data as a component.

Second, the Department created the Commerce Data Governance Board¹¹ (the "governance board") in 2019 and the Commerce Geospatial Working Group (the "working group") in 2020. These two bodies will guide and monitor the Department's geospatial data strategy and related activities. The governance board serves as a decision-making body and is responsible for developing strategies for effective management and sharing of the Department's geospatial (and other) data. The CDO chairs the governance board, and the Department's Senior Agency Official for Geospatial Information (SAOGI) serves as a member.

The geospatial working group is a decision-recommending body to the governance board and is responsible for establishing and applying geospatial governance policies, developing

¹⁰ The CDO is a position required under the Open, Public, Electronic, and Necessary Government Data Act, which is part of the Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. No. 115-435, 132 Stat. 5529, § 202(e).

¹¹ This governance board is required per OMB M-19-23. See OMB, July 10, 2019. *Phase I Implementation of the Foundations for Evidence-Based Policymaking Act of 2018: Learning Agendas, Personnel, and Planning Guidance*, M-19-23. Washington, DC: OMB.

strategies for management, and sharing of Department geospatial data and services. As the chair of the working group and a member of the governance board, the SAOGI will coordinate and communicate geospatial activities and requirements between the two bodies.

The working group planned to begin development of the Department's geospatial data strategy in September 2020, with the goal of ensuring that it complies with GDA requirements. In December 2020, the working group will submit the geospatial data strategic plan to the governance board for approval.

The GDA requires that the Department prepare, maintain, publish, and implement a strategy that advances its geospatial data, information, and related activities appropriate to the mission of the covered agency and supports the NSDI strategic plan.¹² Additionally, best practices require a selected strategy to be aligned with an organization's mission and vision.¹³ A misaligned strategy increases the risk that an organization will not achieve its mission and vision.¹⁴

The Department plans to issue a new geospatial data strategic plan in December 2020, approximately 2 years since its previous strategic plan expired and the enactment of the GDA. While there was no current geospatial data strategy to assess, we found that the Department's action in response to a 2015 audit of geospatial activities¹⁵ indicates a need for a system of internal control to ensure the Department implements the strategic plan, once it is published, and tracks progress against it. In response to that audit, the Department published an implementation and monitoring plan for its geospatial data strategy.¹⁶ However, we learned that the Department subsequently only tracked progress against this plan for approximately 2 years.

The SAOGI stated that the Department's timeline for publishing a new geospatial data strategy stems from the need to support the NSDI strategic plan, which the FGDC will not complete a mature draft of until October 2020. Until the Department issues its geospatial data strategy and begins implementing and monitoring activities, geospatial data management actions executed by the bureaus will not be fully aligned and integrated with the mission of the Department, nor can management have confidence that the Department is achieving its goals for geospatial data in accordance with the GDA.

¹² Pub. L. No. 115-254, H.R. 302 § 759(a)(1).

¹³ Committee of Sponsoring Organizations of the Treadway Commission, June 2017. *Enterprise Risk Management, Integrating with Strategy and Performance, Executive Summary*. New York, NY: COSO, p. 5.

¹⁴ *Ibid*, p. 5.

¹⁵ U.S. Government Accountability Office, February 2015. *Geospatial Data: Progress Needed on Identifying Expenditures, Building and Utilizing a Data Infrastructure, and Reducing Duplicative Efforts*, GAO-15-193. Washington, DC: GAO. See finding "Federal Departments and Agencies Have Made Progress on NSDI Initiatives, but Shortfalls Remain and States Have Concerns about Changes in, Restrictions on, and Limitations of Coordination," p. 48-54.

¹⁶ U.S. Department of Commerce, February 5, 2016. *Department of Commerce FY 16 Geospatial Strategy Implementation Plan Report*. Washington, DC: DOC. Available online at https://www.cio.noaa.gov/pdfs/Commerce_FY16_Geospatial_Implementation_Plan.pdf (accessed August 28, 2020).

Recommendations

We recommend that the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information do the following:

1. Ensure that the Department's geospatial data strategy aligns and integrates with the Department's mission and strategy.
2. Define a system of internal control to ensure the geospatial data strategic plan is effectively implemented and that progress against it is appropriately tracked.

II. The Department Should Develop Procedures to Ensure Compliance with its Policy on Planned Geospatial Acquisitions

Under the GDA, covered agencies are required to search all sources—including GeoPlatform—to determine whether existing sources of geospatial data meet an agency's needs before expending funds for geospatial data collection.¹⁷ Five years prior to GDA, in September 2013, the Department issued its *Policy on Planned Geospatial Acquisitions*, which establishes requirements that all bureaus must meet before acquiring geospatial data.¹⁸

The policy requires bureaus to conduct and document a search to determine if an existing source of geospatial data is available. If it exists and meets mission requirements, bureaus shall not expend funds in order to avoid duplication and waste. Bureaus must also coordinate with other organizations if they plan to produce or acquire geospatial data that meets mission requirements.¹⁹ The policy indicates that the SAOGI is responsible for implementation, monitoring, and general administration of the policy and for issuing guidance and procedures related to operating units.

We found a lack of procedures for, and records of, searches that would ensure compliance with the policy. Of NOAA's four NGDA data themes, we were only able to verify that one data theme (for *Water-Oceans and Coasts*) documented searches for alternative sources and had written procedures to ensure it did so consistently.²⁰ (The Census Bureau does not expend funds to collect geospatial data from its Tribal, federal, State, and local partners, so our assessment was limited to NOAA's activities.)

¹⁷ See Pub. L. No. 115-254, H.R. 302 § 759(a)(11).

¹⁸ DOC, September 20, 2013. *Policy on Planned Geospatial Acquisitions*. Washington, DC: DOC. Available online at https://www.cio.noaa.gov/pdfs/Commerce_Policy_on_Planned_Geospatial_Acquisitions.pdf (accessed August 28, 2020).

¹⁹ The Department should eventually update this policy to ensure it is fully consistent with the GDA. The policy implements requirements defined in OMB Circular A-16 Revised (August 19, 2002). An update to OMB Circular A-16 that is intended to implement requirements of GDA is currently under development. OMB's revision is a likely precursor to the Department's update to its policy for planned geospatial acquisitions.

²⁰ NOAA also refers to the support staff for each data theme by the name of the data theme.

Without a fully defined system of internal control for geospatial acquisitions (to include procedures with documentation requirements), management cannot ensure operating units meet their objectives and avoid duplication and waste, as required under the GDA.²¹

Recommendation

3. We recommend that the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information develop Department-wide procedures to ensure operating units consistently implement the Department's *Policy on Planned Geospatial Acquisitions*.

III. Data Harvesting Issues Are Causing Inconsistencies in Department Metadata

The GDA requires covered agencies to collect, maintain, disseminate, and preserve geospatial data such that the resulting data, information, or products can be readily shared.²² In addition, covered agencies shall document geospatial data with the relevant metadata and make metadata available through the GeoPlatform.²³ We found that due to software harvesting issues involving data.gov and the GeoPlatform, metadata inconsistencies exist between the platforms.

All geospatial data that NOAA and the Census Bureau produce from their programs and partnerships are freely available on platforms such as census.gov, data.noaa.gov, data.gov and the GeoPlatform. According to the NSDI strategic framework, the GeoPlatform is

[a] strategic national resource that provides a suite of **well-managed, highly available, and trusted geospatial data**, services, and applications for use by Federal agencies—and their State, local, Tribal, and regional partners to meet their mission needs and the broader needs of the Nation.²⁴

The process for making metadata available on GeoPlatform varies slightly between the Census Bureau and NOAA. For the Census Bureau, personnel upload the metadata directly to data.gov. Then, an automated software mechanism harvests the metadata from data.gov to the GeoPlatform. For NOAA, dataset managers use software to upload the metadata to data.noaa.gov. Next, data.gov harvests the metadata from NOAA's site and then the GeoPlatform harvests NOAA metadata from data.gov.

Due to the harvesting issue, current Census Bureau metadata is not available on the GeoPlatform. In July 2019, Census Bureau personnel conducted a routine check of its NGDA datasets on GeoPlatform and discovered the problem.

²¹ OMB, December 21, 2004. *Management's Responsibility for Internal Control*, OMB Circular No. A-123 (Revised). Washington, DC: OMB, p. 4 and 8.

²² Pub. L. No. 115-254, H.R. 302 § 759(a)(2).

²³ Pub. L. No. 115-254, H.R. 302 § 759(a)(6).

²⁴ Federal Geographic Data Committee, December 6, 2016. *National Spatial Data Infrastructure Strategic Framework*. Reston, VA: FGDC, p. 13. (Emphasis added.)

Additionally, NOAA indicated that the GeoPlatform harvesting issue and another issue with data.gov have caused similar problems with its metadata on both websites. NOAA is working to find technical solutions in order to keep NOAA's records current on both. In the meantime, NOAA has manually updated some metadata on GeoPlatform.

The harvesting issues create inconsistencies in NOAA and Census Bureau metadata across the platforms. As a result, the GeoPlatform does not provide federal and non-federal users access to current Census Bureau geospatial data and NOAA's manual workarounds are likely not sustainable over time.

Recommendations

We recommend that the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information do the following:

4. Work with the U.S. Department of the Interior to design internal control to ensure metadata on GeoPlatform is both accurate and current.
5. In the interim, work with the U.S. Department of the Interior to notify GeoPlatform users that some metadata may not be current.

IV. Census Bureau Should Document Compliance with Metadata Standards as Part of Its System of Internal Control for Geospatial Data

For the Census Bureau's *Governmental Units, and Administrative and Statistical Boundaries* data theme, the bureau follows metadata standards defined by the International Organization for Standardization (ISO). We found that there was no documentation to ensure compliance with these standards.

We interviewed Census Bureau personnel to understand the metadata standards followed, as well as how they ensure compliance with the standards. Census Bureau personnel stated that the bureau has geospatial data quality assurance procedures that have been developed over time, as programs and geospatial assets have matured. In addition, personnel told us that the Census Bureau has detailed workflows, an evolving set of standards-based business rules and algorithms, and technical documentation to guide its creation and posting of geospatial metadata files. Census Bureau personnel also stated that quality and content checks included a combination of automation as well as visual inspection.

In order to verify compliance with metadata standards, we requested detailed documentation such as quality checks, business rules, standard operating procedures, as well as documentation behind the automated checks. Census Bureau personnel stated this documentation did not exist. In order to provide it, a Census Bureau employee would need to perform a documented crosswalk between the ISO standards and the metadata, but not all Census Bureau employees who need it have access to the standards.²⁵ A Census Bureau

²⁵ According to the Census Bureau, access to some ISO standards is fee-controlled and licensed to individuals. Transfers between individuals within the Geography Division, or to other agencies or individuals outside the Census is not permitted by the licensing agreement.

official told us that leadership has requested an internal review to estimate the cost for purchasing new agency licenses for these standards, which will be used to assess and document compliance.

An effective internal control system includes documentation that demonstrates the design, implementation, and operating effectiveness.²⁶ The Census Bureau must document the system of internal control to ensure compliance with metadata standards. Until the quality assurance procedures are documented, there is a possibility of not meeting the GDA requirement, as well as the risk to the reliability of the metadata.

Recommendation

6. We recommend that the Census Bureau's Chief of the Geography Division assess geospatial data standards licensing needs and ensure the bureau adequately documents compliance with data and metadata standards.

²⁶ GAO, September 2014. *Standards for Internal Control in the Federal Government*, GAO-14-704G. Washington, DC: GAO, app. I: Requirements.

Summary of Agency Response and OIG Comments

On September 23, 2020, NOAA's Deputy Under Secretary for Operations provided a response to our draft report on behalf of the Department. NOAA and the Census Bureau prepared the response, agreed with our findings and recommendations, and described actions they have taken, or will take, to address the recommendations. The response is included within this report as appendix E.

In addition to the official response, NOAA and the Census Bureau provided four technical comments, which we assessed and made changes in the final report where appropriate.

We are pleased that NOAA and the Census Bureau agreed with our findings and recommendations and look forward to receiving an action plan that will provide further details on corrective actions.

Appendix A: Objectives, Scope, and Methodology

Our original objectives—in accordance with the GDA—were to review the Department’s (1) compliance with the standards for geospatial data, including metadata for geospatial data established under section 757; (2) compliance with the requirements under subsection 759(a); and (3) compliance on the limitation on the use of federal funds under section 759A.

On March 23, 2020, the Council of the Inspectors General on Integrity and Efficiency (CIGIE) wrote to Congress to inform of a distinction with the inaugural audits conducted by inspectors general under the GDA.²⁷ Because the mandatory audit scope period overlaps with the GDA implementation period established by the FGDC, conducting the mandatory audits as prescribed under GDA would result in inconclusive findings for two of the three audit requirements (specifically, our original objectives 1 and 3 as previously noted).

CIGIE advised Congress that, based on the recommendation of a working group of representatives from covered agency inspectors general (which includes the U.S. Department of Commerce), audits focused on the covered agencies’ *progress* toward compliance with the GDA, including the agencies’ compliance with requirements under subsection 759(a), would likely provide the best value to the covered agencies, Congress, and the public.

Accordingly, we revised our audit objective to assess the Department’s progress toward compliance with the requirements of subsection 759(a). Because the Department’s NGDAs and management thereof reside within NOAA and the Census Bureau, we limited our scope to those two operating units and the activities of the Department’s SAOGI, CDO, data governance board, and geospatial working group.

To accomplish our objective, we performed the following:

- Reviewed and examined applicable laws and regulations; strategic plans and guidance; policies; OMB memorandums; and other criteria, including the following:
 - Geospatial Data Act of 2018
 - OMB Circular A-16 Revised (August 19, 2002) and A-16 Supplemental Guidance
 - Open, Public, Electronic, and Necessary Government Data Act within the Foundations for Evidence-Based Policymaking Act of 2018
 - OMB Memorandums M-06-07 and M-19-23
 - OMB Circular A-123 Revised (December 21, 2004)
 - NSDI Strategic Plan 2014 – 2016
 - NSDI Strategic Framework

²⁷ A copy of the CIGIE letter is in appendix D.

- U.S. Department of Commerce Geospatial Strategic Plan FY 2014–2018
- *Department of Commerce FY 16 Geospatial Strategy Implementation Plan Report*
- *The Department’s Policy on Planned Geospatial Acquisitions*
- Commerce Data Governance Board Terms of Reference
- Commerce Data Governance Board Geospatial Working Group Terms of Reference
- Interviewed Census Bureau personnel and reviewed documentation related to the processing of Census Bureau metadata such as *Diagrams for the Current Metadata and Publishing Flow* and *2020 Census Detailed Operational Plan for Geographic Programs Operation (GEOP) - 6.3. Geographic Data Processing Component (GEOP/GD)*.
- Reviewed documentation to determine policies and procedures for promoting the integration of geospatial data, as well as coordinating and working in partnership with other agencies and governments, institutions of higher education, and the private sector such as
 - Geographic Support System Program Strategic Plan,
 - Memorandum of Understanding Between the U.S. Geological Survey and U.S. Census Bureau for Coordination and Cooperation Pertaining to the Exchange and Use of Topologically Integrated Geographic Encoding and Reference (TIGER) Data in the National Map,
 - NOAA’s National Environmental Satellite, Data, and Information Service Strategic Plan,
 - National Weather Service Policy Directive I-12, *Obtaining Environmental Data from External Parties*, and
 - NOAA Administrative Order 216-112, *Policy on Partnerships in the Provision of Environmental Information*.
- Obtained from NOAA and the Census Bureau a list of products and other records created in geospatial data and activities that are included on agency records schedules that have been approved by the National Archives and Records Administration and compared against records control schedules identified on the National Archives website.
- Surveyed NOAA and Census Bureau offices to identify their progress and challenges in meeting the requirements of Section 759(a) of GDA.
- Interviewed the following personnel from the Department, NOAA, and Census Bureau to identify their progress and challenges in meeting the requirements of Section 759(a) of GDA:
 - Senior Agency Official for Geospatial Information, Department/NOAA
 - Chief, Geography Division, Census Bureau
 - Deputy Chief, Geography Division, Census Bureau

- Acting Deputy Geospatial Information Officer, NOAA
- NGDA theme lead and dataset managers, NOAA
- NGDA theme lead and a dataset manager, Census Bureau
- Geographer (Metadata Subject Matter Expert), Census Bureau
- Interviewed the Department's Chief Data Officer and Deputy Chief Data Officer to understand their oversight roles and responsibilities of the Department's geospatial activities.
- Judgmentally selected a sample of five NOAA NGDA data theme contracts from October 3, 2018, to July 17, 2020, to determine whether NOAA specified within the contract quality requirements and specifications for the collection of geospatial data.

We gained an understanding of internal control significant within the context of the audit objective through interviews with relevant officials, a survey, and review of documentation. We identified weaknesses in internal control that are described in each of our findings. During our fieldwork, no incidents of fraud, illegal acts, or abuse were detected within our audit.

We examined computer-processed data, but did not rely on that data to support our findings; therefore, we did not test the reliability of the Department's information technology systems. Although we could not independently verify the reliability of all the information we collected, we compared it with other available supporting documents to determine data consistency and reasonableness. Based on these efforts, we believe the information we obtained is sufficiently reliable for this report.

We conducted the audit fieldwork between April and August 2020 under the authority of the Inspector General Act of 1978, as amended (5 U.S.C. App.), and Department Organization Order 10-13, dated April 26, 2013. We performed our fieldwork remotely from Colorado, Maryland, New York, and West Virginia.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Appendix B: Summary of Department Progress Implementing Covered Agency Responsibilities Under Section 759(a)

Responsibility	Description	NOAA's Progress	Census Progress
1. Strategy	Prepare, maintain, publish, and implement a strategy for promoting the use of geographic information and related geospatial data and activities appropriate to the agency's mission, in support of the strategic plan for the NSDI.	See finding I of this report.	
2. Geospatial data	Collect, maintain, disseminate, and preserve geospatial data so that they can be readily shared with other federal agencies and non-federal users.	See finding III of this report.	
3. Promotion of integration	Promote the integration of geospatial data from all sources.	NOAA has established partnership programs and federal agency agreements with a wide range of government, private, and academic partners across the NOAA mission areas. NOAA has strategic plans and policies related to this responsibility.	The Census Bureau maintains relationships with Tribal, government; federal agencies; academia; non-profit organizations; and the private sector in support of ongoing geospatial programs. Census Bureau has a strategic plan and memorandum of understanding with USGS related to this responsibility.
4. Inclusion of geospatial data in agency record schedules	Ensure that data information products and other records created in geospatial data are included on agency record schedules that have been approved by the National Archives and Records Administration.	Both the Census Bureau and NOAA have records schedules that contain geospatial data and have been approved by the National Archives and Records Administration.	
5. Allocation of resources	Allocate resources to fulfill responsibilities of collection, production, and stewardship with regard to related activities of the covered agency, and support Committee activities.	Both NOAA and the Census Bureau have geospatial components within program, project, or activity in the annual Department submission to the President's Budget.	

Responsibility	Description	NOAA's Progress	Census Progress
6. Use of geospatial data standards	Use the appropriate standards, including those for metadata for geospatial data, for documenting geospatial data with relevant metadata and making metadata available through the GeoPlatform.	See finding III of this report.	See findings III and IV of this report.
7. Coordination	Coordinate and work with other federal agencies, State, Tribal, and local governments, institutions of higher education, and private sector to efficiently and cost-effectively collect, integrate, maintain, disseminate, and preserve geospatial data, building upon existing non-federal geospatial data to the extent possible.	Same as #3 above for Promotion of integration.	
8. Use of geospatial information	Use geospatial information to (A) make federal geospatial information and services useful to the public; (B) enhance operations; (C) support decision making; and (D) enhance reporting to the public and to Congress.	The Census Bureau and NOAA geospatial information and services are: (1) available on census.gov or data.noaa.gov, data.gov, and GeoPlatform; (2) used to support functions across each of the organizations; (3) based on user requirements (NOAA); and (4) accessible to develop geographic products (Census Bureau).	
9. Personal privacy and confidentiality	Protect personal privacy and maintain confidentiality in accordance with federal policy and law.	Both at the agency- and Department-level, policies and procedures exist for protecting privacy and maintaining confidentiality.	
10. Declassified data	Participate in determining whether declassified data can contribute to and become a part of the NSDI.	Not applicable	
11. Review of existing geospatial data	Search all sources, including the GeoPlatform, to determine whether existing federal, State, local, and private geospatial data meet the needs of the covered agency before expending funds for geospatial data collection.	See finding II of this report.	Not applicable
12. Collection of high-quality data	To the extent possible, ensure that persons that receive federal funds to collect geospatial data provide high-quality data.	NOAA has quality requirements and specifications in its contracts for the collection of geospatial data.	Not applicable
13. Appointment of contact	Appoint a contact to coordinate with lead covered agencies for collection, acquisition, maintenance, and dissemination of the NGDA data themes.	The Department has appointed the NOAA Geospatial Information Officer as the Senior Agency Official for Geospatial Information. Both NOAA and the Census Bureau have appointed leads and co-leads for NGDA data themes led by the Department.	

Source: OIG analysis of documentation from NOAA, the Census Bureau, and the Department

Appendix C: Department NGDA Data Themes and Corresponding Datasets²⁸

Data Theme	Datasets	Responsibility	Role
Climate and Weather	Geostationary Operational Environmental Satellite (GOES) Imager Data	NOAA	Lead
	High-Resolution Sea Surface Temperature (SST) Analysis Products		
	NOAA NEXt-Generation RADar (NEXRAD) Products		
	Polar-Orbiting Operational Environmental Satellites (POES) Radiometer Data		
Elevation	U.S. Coastal Lidar Elevation Data - Including the Great Lakes and Territories, 1996 - present	NOAA	Co-lead with United States Geological Survey
	Coastal Digital Elevation Models (DEMs)		
	Multibeam Bathymetry Database (MBBDB)		
	Marine Trackline Geophysics Database		
	NOS Hydrographic Surveys Collection		
Geodetic Control	Airborne Gravity (GRAV-D)	NOAA	Lead
	Continuously Operating Reference Stations (CORS)		
	Geodetic Control Information on Passive Marks		
	Geoid Models		
Water - Oceans and Coasts	NOAA Coastal Mapping Shoreline Products	NOAA	Lead
	NOAA Electronic Navigational Charts (ENC)		
	NOAA Raster Navigational Charts (RNC)		
	Maritime Limits and Boundaries of the United States of America		
	ODIN: Observational Data Interactive Navigation, an interactive map of all CO-OPS active stations		
	Sea Levels Online: Sea Level Variations of the United States Derived from National Water Level Observation Network Stations		

²⁸ NOAA has four other datasets that fall under different data themes for which NOAA is not the lead or co-lead: (1) Environmental Sensitivity Index (ESI) Data Viewer and REST Services for Atlases; (2) NOAA Coastal Mapping Remote Sensing Data; (3) Coastal Change Analysis Program (C-CAP) High Resolution Land Cover and Change Data; and (4) C-CAP Regional Land Cover and Change Data. The Census Bureau has one other dataset for which the Census Bureau is not the lead or co-lead: All Roads.

Data Theme	Datasets	Responsibility	Role
	U.S. Marine Protected Areas Boundaries: MPA Inventory		
Address	National Address Database (NAD) ²⁹	Census Bureau	Co-lead with Department of Transportation
Governmental Units, and Administrative Boundaries	116th Congressional District	Census Bureau	Lead
	2010 Census 5-digit ZIP Code Tabulation Area		
	2010 Census Population & Housing Unit Counts		
	2010 Census Public Use Microdata Area		
	2010 Census Urban Area		
	2010 Census Urban Growth Area		
	2010 Census Voting District		
	American Indian/Alaska Native/Native Hawaiian (AIANNH) Homeland Areas		
	American Indian Tribal Subdivision		
	Alaska Native Regional Corporation (ANRC)		
	Census Block		
	Block Group		
	Census Tract		
	Combined New England City and Town Area		
	Combined Statistical Area		
	Consolidated City		
	County and Equivalent		
	County Subdivision		
	Elementary School Districts		
	Estate (US Virgin Islands)		
	Metropolitan Division		
	Metropolitan Statistical Area/Micropolitan Statistical Area		
NECTA Division			
New England City and Town Area			
Place			
Secondary School District			
State and Equivalent			

²⁹ This dataset is managed by the U.S. Department of Transportation.

Data Theme	Datasets	Responsibility	Role
	State Legislative District (SLD) Lower Chamber		
	State Legislative District (SLD) Upper Chamber		
	Subbarrio (Subminor Civil Division)		
	Tribal Block Group		
	Tribal Census Tract		
	Unified School Districts		

Source: OIG analysis of documentation from NOAA and the Census Bureau

Appendix D: CIGIE Letter to Congress



March 23, 2020

The Honorable Roger F. Wicker
Chairman
The Honorable Maria Cantwell
Ranking Member
Committee on Commerce, Science,
and Transportation
United States Senate
Washington, D.C.

The Honorable Eddie Bernice Johnson
Chairwoman
The Honorable Frank D. Lucas
Ranking Member
Committee on Science, Space,
and Technology
U.S. House of Representatives
Washington, D.C.

Dear Mr. Chairman, Mrs. Chairwoman, and Ranking Members:

The Council of the Inspectors General on Integrity and Efficiency (CIGIE) recognizes and appreciates your leadership on issues of geospatial data. In particular, we believe the enactment of the Geospatial Data Act of 2018 (P.L. 115-254) will improve the continuing development of geospatial data and technology. To make sure this happens, the Geospatial Data Act provides for oversight by way of the Federal Inspectors General. Specifically, the Geospatial Data Act requires the bi-annual completion of a review of Covered Agencies' compliance with standards established by the Act, Covered Agencies' responsibilities detailed in the Act, and Covered Agencies' compliance with the prohibition of Federal funding for non-compliant datasets.

We are writing this letter on behalf of CIGIE to inform you of an important distinction with the inaugural Geospatial Data Act audits by the Inspector General community. Specifically, the inaugural mandatory audit scope period overlaps with the estimated Geospatial Data Act implementation period established by the Federal Geographic Data Committee (FGDC). As part of the implementation phase, the FGDC is evaluating the existing body of standards, among other items. Due to the continuing implementation of the Geospatial Data Act, conducting the mandatory audits as prescribed by the Act would result in reports submitted by the Inspectors General in October 2020 to be inconclusive for two of the three audit requirements.

To address this challenge while continuing to meet the mandatory audit requirements, CIGIE convened a working group with representatives from the Covered Agency Inspectors General to reach a consensus on an audit approach for the inaugural audits. The Covered Agency Inspectors General determined that audits focused on the Covered Agencies' progress toward compliance with the Geospatial Data Act, including the agencies' compliance with requirements under subsection (a), would likely provide the best value to the Covered Agencies', Congress, and the Public. This is a somewhat narrower approach than what the law requires, because it is currently difficult to determine which standards the audits should use in evaluating compliance. Also, because the law establishes a five-year implementation period before limiting the use of Federal

funds for non-compliant activities, this requirement would not be evaluated in the inaugural audits.

This consensus approach will afford each Covered Agency Inspector General latitude to perform additional testing based on the Covered Agency's geospatial footprint as determined necessary by the applicable Inspector General. CIGIE has advised the affected Inspectors General that should they decide to perform either additional, or more limited procedures, the rationale for the addition, or reduction of the audit procedures should be included in the report.

Should you or your staffs have any questions about our approach or other aspects of our collective Geospatial Data Act oversight activities, please do not hesitate to contact us at (202) 514-3435 or (703) 248-2296 respectively.

Sincerely,



Michael E. Horowitz
Chair, Council of the Inspectors General on
Integrity and Efficiency
Inspector General, U.S. Department of
Justice



Tammy L. Whitcomb
Chair, Council of the Inspectors General on
Integrity and Efficiency, Technology
Committee
Inspector General, U.S. Postal Service

cc: The Honorable Ron Johnson, Chairman
The Honorable Gary C. Peters, Ranking Member
Senate Committee on Homeland Security and Governmental Affairs

The Honorable Carolyn B. Maloney, Chairwoman
The Honorable Mark Meadows, Ranking Member
House Committee on Oversight and Reform

The Honorable Margaret Weichert, Deputy Director OMB and Executive Chair, Council
of the Inspectors General on Integrity and Efficiency

The Honorable Gene Dodaro, Comptroller General, GAO

Appendix E: Agency Response



UNITED STATES DEPARTMENT OF COMMERCE
The Deputy Under Secretary for Operations
Washington, D.C. 20230

SEP 23 2020

MEMORANDUM FOR: Frederick J. Meny, Jr.
Assistant Inspector General for Audit and Evaluation

FROM: Ben Friedman 
Deputy Under Secretary for Operations

SUBJECT: *The Department Has Made Progress Meeting Its Responsibilities
Under the Geospatial Data Act But Must Improve Controls to Ensure
Full Compliance*
Draft OIG Audit Report

On behalf of the Department of Commerce Deputy Secretary, I am pleased to submit the attached response to the Office of Inspector General's draft report on the Geospatial Data Act. By e-mail confirmation on September 17, the Deputy Secretary's Office delegated this matter to NOAA for response. The U.S. Census Bureau and the National Oceanic and Atmospheric Administration prepared the response and concurred with all the recommendations. If you have questions, please contact Katina Felts, Acting Director, Audit and Information Management Office on (301) 628-0980.

Attachment



Department of Commerce
Comments to the OIG Draft Report Entitled
The Department Has Made Progress Meeting Its Responsibilities Under the Geospatial Data Act But Must Improve Controls to Ensure Full Compliance
(September 2020)

The Department of Commerce appreciates the opportunity to review the OIG draft report on the Geospatial Data Act and agrees with the OIG's findings and recommendations. The U.S. Census Bureau and the National Oceanic and Atmospheric Administration prepared the response to each recommendation which is provided below.

Response to OIG Recommendations

Recommendation 1: That the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information ensure that the Department's geospatial data strategy aligns and integrates with the Department's mission and strategy.

Response: We concur. The Commerce Senior Agency Official for Geospatial Information is leading a cross-Commerce team in the development of the Commerce Geospatial Strategy. This effort is being closely coordinated with the Interim Commerce Chief Data Officer who is leading the development of the Commerce Open Data Strategy. The Commerce Geospatial Strategy will be reviewed and approved by the Commerce Data Governance Board which is chaired by the Interim Commerce Chief Data Officer. The Strategy is on target to be approved by December 31, 2020.

Recommendation 2: That the Deputy Secretary of Commerce and the Senior Agency Official for Geospatial Information Define a system of internal control to ensure the geospatial data strategic plan is effectively implemented and that progress against it is appropriately tracked.

Response: We concur. The Commerce Senior Agency Official for Geospatial Information will lead an effort to develop a Commerce Geospatial Strategy Implementation Plan to measure Department performance in meeting the Geospatial Strategy's goals and objectives. The Commerce Geospatial Implementation Plan is targeted to be approved by March 2021.

Recommendation 3: That the Deputy Secretary for Commerce and the Senior Agency Official for Geospatial Information develop Department-wide procedures to ensure operating units consistently implement the Department's Policy on Planned Geospatial Acquisitions.

Response: We concur. The Commerce Senior Agency Official for Geospatial Information will work with the Interim Chief Data Officer and other senior department staff in updating the current Commerce Policy on Planned Geospatial Acquisitions to comply with new Geospatial Data Act requirements. Additionally, a process to measure performance in complying with the policy will be developed.

Recommendation 4: That the Deputy Secretary for Commerce and the Senior Agency Official for Geospatial Information work with the U.S. Department of the Interior to design internal control to ensure metadata on GeoPlatform is both accurate and current.

Response: We concur. The Commerce Senior Agency Official for Geospatial Information is currently working with the Geospatial Platform Managing Partner, its Architecture and Technology Working Group, and the Data.gov management team to identify and resolve issues in accurately publishing Commerce metadata. Following the resolution of the technical issues, Commerce staff will work with the Interior and Data.gov teams to implement quality controls to ensure

Recommendation 5: That the Deputy Secretary for Commerce and the Senior Agency Official for Geospatial Information in the interim, work with the U.S. Department of the Interior to notify GeoPlatform users that some metadata may not be current.

Response: We concur. The Commerce Senior Agency Official for Geospatial Information will work with the Department of Interior as the Managing Partner for the Geospatial Platform to provide notice to users.

Recommendation 6: That the Census Bureau's Chief of the Geography Division assess geospatial data standards licensing needs and ensure the bureau adequately documents compliance with data and metadata standards.

Census Bureau Response: We concur. The Census Bureau agrees with this recommendation. In response, the Chief of Geography Division will assess geospatial data standards licensing needs and ensure the bureau adequately documents compliance with data and metadata standards.