



OFFICE OF
INSPECTOR GENERAL
U.S. DEPARTMENT OF THE INTERIOR

The U.S. Department of the Interior Needs To Strengthen Governance Practices To Improve Its Management of Geospatial Data

This is a revised version of the report prepared for public release.

In recognition of Secretarial Order No. 3380, we are providing estimated costs associated with certain work products. Applying a formula involving prior salary and benefit expenses, we estimate the cost of preparing this report to be \$212,000.



OFFICE OF
INSPECTOR GENERAL
U.S. DEPARTMENT OF THE INTERIOR

Memorandum

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To: William E. Vajda
Chief Information Officer

From: Mark Lee Greenblatt
Inspector General

Subject: Final Evaluation Report – *The U.S. Department of the Interior Needs To Strengthen Governance Practices To Improve Its Management of Geospatial Data*
Report No. 2020-ITA-020

This memorandum transmits our evaluation report on the U.S. Department of the Interior's (DOI's) progress implementing the objectives of the Geospatial Data Act of 2018. We found the DOI has made progress in meeting 11 of the 13 Geospatial Data Act requirements we evaluated. We also found, however, that the DOI did not implement Departmentwide controls to ensure that geospatial data purchased from third parties met quality standards and did not ensure that bureaus regularly searched the GeoPlatform before expending Federal funds to purchase geospatial data from a third party.

In response to our draft report, the DOI concurred with our two recommendations and provided information on actions taken and planned, responsible officials, and target dates for completion. Based on the DOI's response, we consider both recommendations resolved but not implemented. We will refer both recommendations to the Office of Policy, Management and Budget for implementation tracking.

If you have any questions about this report, please call me at 202-208-5745.

The legislation creating the Office of Inspector General requires that we report to Congress semiannually on all audit, inspection, and evaluation reports issued; actions taken to implement our recommendations; and recommendations that have not been implemented.

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Results in Brief

The U.S. Department of the Interior (DOI) uses geospatial data—data linked to specific geographic locations—to support its varied missions. For example, the DOI’s bureaus use geospatial data to make decisions and direct resources when responding to wildland fires and hurricanes, to track the habitat of endangered species, and to promote the health and welfare of tribal communities.

The DOI is a major producer of geospatial data, leading more than half of the geospatial data themes for the Federal Government and spending over \$100 million a year purchasing geospatial data and services from third-party contractors. The DOI also operates the GeoPlatform (geoplatform.gov)—a searchable clearinghouse of geospatial data available from Federal and non-Federal sources. We assessed whether the DOI’s management of its geospatial data programs complied with the Geospatial Data Act of 2018.

The Geospatial Data Act of 2018 was signed on October 5, 2018, and requires that not less than once every 2 years the Inspector General submit to Congress a report of the DOI’s compliance with the Act. For this inaugural review, we conducted a broad evaluation of the DOI’s progress toward complying with the Act to serve as a baseline for future reviews (see Appendix 1).

We found the DOI is working toward meeting 11 of the 13 Geospatial Data Act requirements we evaluated. For example, in 2016, the DOI assigned an executive to manage Departmentwide collection, acquisition, maintenance, and dissemination of its geospatial data, and is currently implementing strategy for advancing geospatial data and related activities to support bureau missions. We also found evidence that the DOI readily shares geospatial data through the GeoPlatform with other Federal agencies and non-Federal users. In addition, the DOI is working on:

- Promoting the integration of geospatial data from all sources
- Allocating resources for geospatial data collection, production, and stewardship
- Documenting geospatial data on the GeoPlatform using the relevant data and metadata standards
- Assuring that bureau geospatial data and activities are included on agency record schedules that have been approved by the National Archives and Records Administration
- Coordinating with Federal and non-Federal entities to effectively manage geospatial data
- Using geospatial data to enhance operations, support decision making, and enhance reporting to Congress

- Protecting personally identifiable information stored on the GeoPlatform from unauthorized access in accordance with Federal policy and law
- Making declassified data, as appropriate, available as part of the National Spatial Data Infrastructure

We found, however, that the DOI did not implement Departmentwide controls to ensure that geospatial data purchased from third-party contractors met quality standards endorsed by the Federal Geographic Data Committee and did not ensure that bureaus regularly searched the GeoPlatform before expending Federal funds to purchase geospatial data. As a result, the DOI risks using poor-quality data to support decision making and resource allocation, with the potential to adversely affect mission outcomes. These adverse effects could be greatly magnified if the DOI makes this poor-quality data accessible through the GeoPlatform, and the data is then relied on by Federal and non-Federal users for decision making and resource allocation. In addition, by not consistently searching the GeoPlatform, the DOI risks expending funds for geospatial data that may already be available at no cost.

We found these deficiencies occurred because the DOI had not established an effective oversight program to satisfy all the Act's requirements. We make two recommendations to strengthen the DOI's governance practices for its geospatial data program. In response to our draft report, the DOI concurred with both recommendations and stated it is working to implement them. We consider both recommendations resolved but not implemented. We will refer the recommendations to the Office of Policy, Management and Budget for tracking implementation.

Introduction

Objective

We evaluated the status of the U.S. Department of the Interior's (DOI's) compliance with geospatial data management as defined by the Geospatial Data Act of 2018.

Specifically, the Act mandates that not less than once every 2 years the Inspector General submit to Congress a report of the agency's collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data that reviews agency responsibilities based on 15 specific requirements:

1. Complying with the standard for geospatial data, including information about geospatial data sets, also known as metadata, as established under Section 757 (We did not assess this requirement in fiscal year (FY) 2020. See Appendix 1 for additional details.)
2. Preparing, maintaining, publishing, and implementing a strategy for advancing geographic information and related geospatial data and activities appropriate to the mission of the DOI, in support of the strategic plan for the National Spatial Data Infrastructure (NSDI) prepared under Section 755(c)
3. Collecting, maintaining, disseminating, and preserving geospatial data, such that the resulting data, information, or products can be readily shared with other Federal agencies and non-Federal users
4. Promoting the integration of geospatial data from all sources
5. Ensuring that data information products and other records created in geospatial data and activities are included on agency record schedules that have been approved by the National Archives and Records Administration (NARA)
6. Allocating resources to fulfill the responsibilities of effective geospatial data collection, production, and stewardship regarding related activities of the DOI, and as necessary to support the activities of the Federal Geographic Data Committee (FGDC)
7. Using the geospatial data standards, including those for metadata, and other appropriate standards, including documenting geospatial data with the relevant metadata and making metadata available through the GeoPlatform
8. Coordinating and working with other Federal agencies; agencies of State, tribal, and local governments; institutions of higher education; and the private sector to efficiently and cost effectively collect, integrate, maintain, disseminate, and preserve geospatial data, building on existing non-Federal geospatial data to the extent possible

9. Using geospatial information to make Federal geospatial information and services more useful to the public, enhance operations, support decision making, and enhance reporting to the public and to Congress
10. Protecting personal privacy and maintaining confidentiality according to Federal policy and law
11. Determining, when applicable, whether declassified data can contribute to and become a part of the NSDI
12. Searching all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets DOI needs before expending funds for geospatial data collection
13. Assuring, to the maximum extent practicable, that a person receiving Federal funds for geospatial data collection provides high-quality data
14. Appointing a contact to coordinate with the lead covered agencies for collection, acquisition, maintenance, and dissemination of the National Geospatial Data Asset (NGDA) data themes used by the DOI
15. Complying with the limitation on the use of Federal funds under Section 759a (We did not assess this requirement in FY 2020. See Appendix 1 for additional details.)

Scope Limitation

We did not evaluate requirements 1 and 15 because they were excluded from the evaluation scope. Appendix 1 provides further details regarding our scope and methodology.

Background

Geospatial data plays a critical role in decision making and ensures the United States can quickly and effectively respond to the Nation's priorities, including disaster and national security events; lead the world in global spatial infrastructure; and provide transparency and accountability to its citizens.

Today, geospatial data and technology represent major investments on the part of the Federal Government because nearly everything that happens in the public realm happens in the context of geography. Federal sources have estimated that more than 80 percent of the data produced by Federal agencies have a geospatial component.

In addition, multiple Federal agencies provide services at the same geographic locations and may independently collect similar geospatial data about those locations, raising the question of how well the Federal Government coordinates its investments in geospatial data. As such, in 1994, the President issued Executive Order 12906 to address wasteful duplication and incompatibility of geospatial data and develop the NSDI.

The NSDI provides a structure to facilitate the efficient collection, sharing, and dissemination of geospatial data among all levels of government, the private sector, and the public. The NSDI consists of data themes, standards, metadata, a clearinghouse, and partnerships. In 2002, the U.S. Office of Management and Budget (OMB) revised OMB Circular A-16 to further describe the components of the NSDI and agency responsibilities for acquiring, maintaining, distributing, using, and preserving geospatial data. The Circular describes the following five components of the NSDI:

- **Data themes:** Topics of national significance as listed in OMB Circular A-16, which identified 34 data themes and the lead agency or agencies for each theme. Each data theme consists of one or more electronic data records, known as datasets.
- **Standards:** Provide common and repeatable rules or guidelines for the development, documentation, and exchange of geospatial datasets.
- **Metadata:** Information about datasets, such as content, source, accuracy, method of collection, and point of contact. Metadata are used to facilitate the search of and access to datasets within a data library or clearinghouse and enable potential users to determine the data's applicability for their use.
- **National Spatial Data Clearinghouse (referred to as the GeoPlatform, [geoplatform.gov](https://www.geoplatform.gov)):** Provides a searchable catalog of geospatial data and related artifacts that are available from Federal and non-Federal sources. By searching the GeoPlatform, Federal agencies can determine if suitable geospatial data are available before expending funds on data. Moreover, Executive Order 12906 and OMB Circular A-16 require Federal agencies to identify their existing and planned geospatial investments and to search the GeoPlatform for cost-saving opportunities before expending funds on new geospatial data.
- **Partnerships:** All stakeholders (e.g., Federal, tribal, State, and local governments, as well as academic institutions) should be involved in the development of the NSDI.

In 2010, the OMB provided supplemental guidance that further defined and clarified Circular A-16 and focused on managing geospatial data as a capital asset. The guidance established the concept of NGDAs, which are the most significant data themes and datasets. The guidance sought to create a Governmentwide NGDA portfolio by encouraging agencies to adopt and implement a portfolio management approach for their geospatial data investments. According to the FGDC, as of July 2020, there are 17 data themes and more than 176 NGDA datasets that compose the NGDA portfolio.

The DOI's U.S. Geological Survey (USGS) plays a leading role in the Federal collection, maintenance, and management of geospatial data by housing the FGDC—a 32-member interagency committee composed of representatives from the Executive Office of the President and Cabinet-level and independent Federal agencies that is responsible for coordinating geospatial data activities. For more than two decades, the FGDC has worked to reduce duplication and increase the interoperability of federally sourced geospatial data. The FGDC has

also established common standards across the Federal Government so agencies can share and use all data collected and has determined authoritative sources for a set of geospatial data themes, ensuring that agencies do not produce the same data.

Geospatial data supports critical missions across the DOI, including:

1. Overseeing wildland fire and post-fire Burned Area Emergency response
2. Monitoring hurricane recovery and land changes
3. Conducting computational modeling of topography-influenced volcano hazards, such as lahars (volcanic mudflows), that can travel downstream and affect nearby populated areas
4. Completing emergency management planning for dam-break scenarios
5. Providing habitat information in support of the Endangered Species Act
6. Locating and recording historic properties, such as archeological sites and historic structures
7. Generating maps for studies and special projects, such as reservoir operations pilots, feasibility studies, and planning studies

Of the 17 total data themes, the DOI is responsible for 9 data themes, representing more than 50 percent of the Federal Government's NGDA portfolio (see Appendix 2). From FYs 2018 through 2020, the DOI has spent at least \$100 million purchasing geospatial data from third-party contractors.

Findings

The DOI has begun to implement many of the requirements of the Geospatial Data Act of 2018. For example, it has promoted the integration of geospatial data from all sources; allocated resources for geospatial data collection, production, and stewardship; and coordinated with Federal and non-Federal entities to effectively manage geospatial data.

We found, however, that the DOI risks using poor-quality data to support decision making and resource allocation because the chief data officer did not ensure that all bureaus performed quality checks on geospatial data purchased from third parties. Those bureaus that did perform quality-control tests of purchased data could not provide evidence that the testing performed conformed with data quality standards endorsed by the FGDC.

We also found that the DOI risks expending funds to purchase geospatial data that may be freely available because the bureaus did not consistently search the GeoPlatform to check whether existing Federal, State, local, or private geospatial data met their needs before purchasing geospatial data.

The DOI Must Ensure It Receives High-Quality Geospatial Data Purchased From Third Parties

The Act requires agencies to assure, to the maximum extent practicable, that those receiving Federal funds for geospatial data collection provides high-quality data. Data quality standards help ensure that geospatial data are complete, accurate, and precise, but the DOI did not require bureaus to perform quality-control tests to ensure geospatial data purchased from third parties met quality standards approved by the FGDC, as required by the Geospatial Data Act of 2018. Specifically, the DOI's chief data officer had not implemented policies and procedures for the bureaus to follow when purchasing geospatial data from third parties. We found that the bureaus' contracts with data providers did not always include requirements to ensure that applicable data quality standards were met.

Documenting geospatial data resources according to data standards results in records that enhance the effectiveness of search results from Data.gov and the GeoPlatform. OMB Circular A-16 requires the FGDC to promulgate standards for geospatial data. In 2016, the FGDC endorsed International Organization for Standardization (ISO) metadata and data quality standards: *ISO 19115-1:2014, Geographic Information — Metadata — Part: 1 Fundamentals* and *ISO 19157:2013 Geographic information — Data quality*, which agencies publishing to Data.gov and the GeoPlatform are expected to follow. Moreover, the Geospatial Data Act of 2018 requires the DOI to ensure that anyone who receives Federal funds for geospatial data collection provide high-quality data that is complete, accurate, and precise. In September 2013, the Office of the Chief Information Officer (OCIO) issued OCIO Directive 2013-002, which states that the senior agency official for geospatial information must implement, monitor, and administer the Directive and ensure the DOI complies with the data-quality requirements under the Act and OMB Circular A-16.

We reviewed all nine of DOI's bureaus that have geospatial data responsibilities. During our review, we found that two bureaus—the Bureau of Indian Affairs (BIA) and the Office of Surface Mining Reclamation and Enforcement (OSMRE)—have not purchased geospatial data from third parties. Of the seven bureaus that do purchase geospatial data (Bureau of Land Management (BLM), Bureau of Ocean Energy Management (BOEM), Bureau of Reclamation (BOR), Bureau of Safety and Environmental Enforcement (BSEE), National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), and USGS), we found that one (NPS) does not have procedures in place to ensure data quality. The remaining six bureaus performed quality control checks on the data purchased. For example, the USGS' quality controls for the 3D Elevation Program contract data involve a series of steps to validate data, including the use of software programs that check the geospatial data and metadata before it can be used in national maps. Further, these checks are specific to each data type and include meeting required picture resolutions and scientific measurements, in addition to running automated validation tools to ensure the accuracy of the data. These checks are imperative to ensure that the data can be used in national maps and provide foundational elevation information for earth science studies and mapping applications.

The bureaus did not provide evidence that the data quality checks performed conformed with meta and data quality standards endorsed by the FGDC. DOI's chief data officer had not approved the current bureau-specific approach to data quality control nor verified that the approach conforms with FGDC data and meta data quality standards. As such, the DOI risks acquiring data that does not meet quality standards.

The DOI uses geospatial data for decision making and for directing resources to accomplish its varied missions. If the data used are incomplete, inaccurate, or imprecise, decisions made based on poor-quality data may result in the misdirection of resources with the potential to adversely affect mission outcomes. The problem is greatly amplified if poor-quality data is then made available on the GeoPlatform, where Federal and non-Federal users may rely on it. While most bureaus have taken the initiative to ensure data quality, a Departmentwide approach would help ensure all bureaus use consistent contract language related to quality standards and protect more than \$100 million a year in Federal funds spent on this data.

Recommendation
<p>We recommend that the DOI's chief data officer:</p> <ol style="list-style-type: none">1. Ensure that bureau contracts with third-party providers of geospatial data meet FGDC-endorsed data and metadata quality standards

The DOI Risks Expending Funds on Geospatial Data That May Already Exist on the GeoPlatform

The Act requires agencies to search all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets agency needs before expending funds for geospatial data collection. We determined that the DOI has not ensured its bureaus search the GeoPlatform, the recognized clearinghouse for geospatial data, for existing data before expending Federal funds on data collection. According to the DOI senior agency official for geospatial information, the DOI performs these searches at the bureau level, through system searches and the contracting process. We asked the bureaus to describe how they search all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets the bureau's needs before expending funds for geospatial data collection. Although the seven bureaus that purchase data stated they search sources before purchasing data, only two specifically stated they search the GeoPlatform.

The GeoPlatform contains a searchable catalog of geospatial data and related content available from Federal and non-Federal sources. For example, searching the GeoPlatform for weather-related geospatial data using the keywords "weather map" returns links to weather maps provided by the National Oceanic and Atmospheric Administration, Weather Underground, and other sources. The GeoPlatform provides a robust sorting and searching capability allowing users to access geospatial data and related content by keywords, dataset, publisher organization, geographic extent, data themes, community association, date ranges, and other descriptors.

OMB Circular A-16 requires Federal agencies to identify their existing and planned geospatial investments and to search the GeoPlatform for cost-saving opportunities before acquiring new geospatial data to reduce duplicated effort and enhance sharing of geospatial data. In addition, OCIO Directive 2013-002 requires bureaus to ensure that existing data or acquisitions planned by other organizations will meet their requirements before expending funds to collect or purchase new geospatial data.

By not using the GeoPlatform's search capabilities, the DOI risks spending Federal funds on geospatial data that already exists. In addition, the GeoPlatform is meant to serve as a central clearinghouse to reduce duplication of effort and cost and increase return on existing geospatial investments by promoting the reuse of data. During fieldwork, the DOI's chief data officer stated that, at that time, he did not plan to implement controls to ensure bureaus meet Federal and DOI requirements to prevent duplicative spending until at least FY 2021.

Recommendation
<p>We recommend that the DOI's chief data officer:</p> <ol style="list-style-type: none">2. Ensure that all bureaus and offices search the GeoPlatform to determine if existing Federal, State, local, or private data meets the DOI's needs before expending funds for data collection

The DOI's Status in Meeting Other Requirements of the Geospatial Data Act of 2018

The Act requires the Inspector General to report to Congress on all 15 requirements related to geospatial data. We found that the DOI is working toward meeting 11 of the 13 Geospatial Data Act requirements we evaluated. For example, in 2016, the DOI assigned an executive to manage Departmentwide collection, acquisition, maintenance, and dissemination of its geospatial data, and is currently implementing strategy for advancing geospatial data and related activities to support bureau missions. The DOI made declassified data from the NSDI available pursuant to Executive Order 12951. We also found evidence that the DOI readily shares geospatial data through the GeoPlatform with other Federal agencies and non-Federal users. In addition, the DOI is working on:

- Promoting the integration of geospatial data from all sources
- Allocating resources for geospatial data collection, production, and stewardship
- Documenting geospatial data on the GeoPlatform using the relevant data and metadata standards
- Ensuring that bureau geospatial data and activities are included on agency record schedules that have been approved by the National Archives and Records Administration
- Coordinating with Federal and non-Federal entities to effectively manage geospatial data
- Using geospatial data to enhance operations, support decision making, and enhance reporting to Congress
- Protecting personally identifiable information stored on the GeoPlatform from unauthorized access in accordance with Federal policy and law

Appendix 3 provides a summary of the DOI's progress toward meeting the requirements.

Conclusion and Recommendations

Conclusion

The DOI is a major user, producer, provider, and buyer of geospatial data, and its bureaus rely on geospatial data to accomplish their varied missions. The DOI operates the GeoPlatform, a widely used Federal clearinghouse for geospatial data from Federal and non-Federal sources. In addition to producing this data, the DOI has also spent over \$100 million a year purchasing geospatial data and services from third parties.

While we found that the DOI is working to satisfy 11 of the 13 geospatial data requirements we reviewed, the DOI must ensure it receives high-quality geospatial data purchased from third parties and that it does not spend Federal funds on duplicative geospatial data.

Recommendations Summary

We recommend that the DOI's chief data officer:

1. Ensure that bureau contracts with third-party providers of geospatial data meet FGDC-endorsed data and metadata quality standards
2. Ensure that all bureaus and offices search the GeoPlatform to determine if existing Federal, State, local, or private data meets the DOI's needs before expending funds for data collection

DOI Response

In response to our draft report, the Acting Assistant Secretary for Policy, Management and Budget concurred with both recommendations and stated the DOI is working to implement them (see Appendix 4). The DOI stated it will issue guidance to bureaus and offices requiring them to consider during the acquisition process whether geospatial data will be collected. If so, the guidance will require the bureaus and offices to include relevant language in the contract. The DOI stated it will also issue policy to ensure that all bureaus and offices search the GeoPlatform to determine whether existing Federal, State, local, or private data meets the DOI's needs before expending funds for data collection. The DOI provided a November 1, 2020 target date for completion of this policy. Based on the DOI's response, we consider both recommendations resolved but not implemented. We will refer the recommendations to the Office of Policy, Management and Budget for tracking implementation (see Appendix 5).

Appendix 1: Scope and Methodology

Scope

We evaluated the status of the U.S. Department of the Interior's (DOI's) compliance with the management of geospatial data as defined by the Geospatial Data Act of 2018. This Act requires the Office of Inspector General (OIG) to report on the agency's collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data according to 15 requirements (see "Background").

Scope Limitation

In March 2020, the Council of the Inspectors General on Integrity and Efficiency (CIGIE) issued a letter to the U.S. Congress narrowing the scope of the fiscal year (FY) 2020 report to exclude 2 of the 15 requirements (requirements 1 and 15). CIGIE excluded covered agency compliance with data standards and limitation on using public funds for geospatial data management activities because the standards the reports should use to evaluate compliance are unclear and because Federal law establishes a 5-year implementation period before limiting the use of public funds for noncompliant activities. Further, CIGIE's unified approach allows for latitude for the OIG to define audit procedures. For the current year's report, we performed an evaluation of the DOI's compliance with the Geospatial Data Act of 2018 under the CIGIE Blue Book *Quality Standards for Inspection and Evaluation*.

Methodology

To evaluate the DOI's geospatial data management, we interviewed the DOI's chief data officer and reviewed documentation related to the DOI's oversight of geospatial data. Because this evaluation is the first review completed under our biannual obligation, we sought to establish a baseline of the activities occurring at the DOI to comply with the Act's requirements. As such, we selected a sample of nine DOI bureaus, which all have responsibilities for geospatial data, to evaluate the DOI's oversight:

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Ocean Energy Management
- Bureau of Reclamation
- Bureau of Safety and Environmental Enforcement
- National Park Service

- Office of Surface Mining Reclamation and Enforcement
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

We relied on the chief data officer and the bureaus to provide written responses and evidence of their performance with the objectives we evaluated. To accomplish our evaluation objectives, we:

- Reviewed relevant criteria, such as the Geospatial Data Act of 2018, Office of Management and Budget Circular A-16, and Executive Order 12951
- Reviewed Federal Geographic Data Committee (FGDC) guidance published at fgdc.gov
- Reviewed DOI and bureau policies and memoranda related to the management and oversight of geospatial data
- Searched geospatial data on the GeoPlatform (geoplatform.gov) and Data.gov
- Reviewed the position description and nomination documentation for the chief data officer as the DOI's senior agency official for geospatial information
- Inspected evidence of meetings to coordinate geospatial data collaboration activities, such as meeting minutes and agendas
- Examined privacy impact assessments
- Reviewed screenshots and documentation citing examples of the DOI's use of geospatial data
- Inspected agency and bureau budget data and resource allocations related to geospatial data collection, production, and stewardship
- Interviewed the executive director of the FGDC to better understand data quality standards
- Asked bureau records officers how geospatial data is included on National Archives and Records Administration approved record schedules
- Reviewed data checks and contract clauses for geospatial data obtained by the DOI through third-party contracts

Audits and evaluations seek answers to the same basic questions as part of examining a program:

- What is current program performance?
- Does current performance meet required standards?
- If current performance materially departs from standards, what corrective action is needed to improve performance?

As part of our evaluation, we collected and evaluated sufficient, competent evidence for each objective through inquiry and inspection. We independently evaluated the evidence to determine the DOI's compliance with the requirements of the Act. When the DOI's performance did not meet the standard, we made recommendations to address deficiencies.

We conducted our evaluation in accordance with the *Quality Standards for Inspection and Evaluation* as put forth by CIGIE. We believe that the work performed provides a reasonable basis for our conclusions and recommendations.

Appendix 2: Description of the U.S. Department of the Interior's National Geospatial Data Asset (NGDA) Themes

NGDA Theme	NGDA Theme Description	Theme Leads
Biodiversity and Ecosystems	Pertains to or describes the dynamic processes, interactions, distributions, and relationships between and among organisms and their environments	U.S. Geological Survey (USGS)
Cadastre	Past, current, and future rights and interests in real property, including the spatial information necessary to describe geographic extents	Bureau of Land Management
Cultural Resources	Features and characteristics of a collection of places of significance in history, architecture, engineering, or society (includes national monuments and icons)	National Park Service
Elevation	The measured vertical position of the earth's surface, other landscape, or underwater depth of ocean floors or lake floor	USGS
Geology	Geographically referenced data pertaining to the origin, history, composition, structure, features, and processes of the solid earth, both onshore and offshore	Bureau of Ocean Energy Management and USGS
Imagery	Georeferenced images of the earth's surface, which have been collected via aerial photography or satellite data	USGS
Land Use-Land Cover	Natural and manmade surface features that cover the land (land cover) and to the primary ways in which land cover is used by humans (land use)	USGS
Utilities	Means, aids, and use of facilities for producing, conveying, distributing, processing, or disposing of public and private commodities including power, energy, communications, natural gas, and water (includes subthemes for energy, drinking water and water treatment, and communications)	Bureau of Safety and Environmental Enforcement
Water – Inland	Interior hydrologic features and characteristics, including classification, measurements, location, and extent (includes aquifers, watersheds, wetlands, navigation, water quality, water quantity, and groundwater information)	U.S. Fish and Wildlife Service and USGS

Appendix 3: The U.S. Department of the Interior's Status in Meeting the Requirements of the Geospatial Data Act of 2018

Requirement	Status
Requirement 1: Complying with the standard for geospatial data, including information about geospatial data sets, also known as metadata, as established under Section 757	We did not evaluate this objective because the Council of the Inspectors General for Integrity and Efficiency (CIGIE) excluded it from the scope for fiscal year (FY) 2020 (see Appendix 1: Scope and Methodology, "Scope Limitation").
Requirement 2: Preparing, maintaining, publishing, and implementing a strategy for advancing geographic information and related geospatial data and activities appropriate to the mission of the U.S. Department of the Interior (DOI), in support of the strategic plan for the National Spatial Data Infrastructure (NSDI) prepared under Section 755(c)	Although the DOI and its bureaus have made progress in publishing draft strategic plans for geospatial data and activities, it has not finalized these plans due to dependency on the Federal Geographic Data Committee's (FGDC's) actions, such as publishing its own plan and providing reporting requirements for Federal agencies. Further, the deadline to submit these strategic plans is not until December 2020.
Requirement 3: Collecting, maintaining, disseminating, and preserving geospatial data, such that the resulting data, information, or products can be readily shared with other Federal agencies and non-Federal users	<p>The policies and procedures used to share and publish geospatial information varies across the bureaus and data type. Office of the Chief Information Officer (OCIO) Directive 2013-002 contained requirements for bureaus to share geospatial information in accordance with Office of Management and Budget (OMB) Circular A-16 and for the senior agency official for geospatial information to issue guidance and procedures to be followed for carrying out these requirements.</p> <p>Although the senior agency official for geospatial information has not issued policies and procedures to instruct the bureaus on how to implement the policy, the DOI's bureaus share information with the public and other Federal agencies by publishing information on the GeoPlatform or their own agency websites and geographic information systems (GIS) services.</p>
Requirement 4: Promoting the integration of geospatial data from all sources	The DOI promotes the integration of geospatial data from Federal agencies; agencies of State, tribal, or local governments; institutions of higher education; and private-sector entities. The DOI's Interior Geospatial Emergency Management System web application

Requirement	Status
	<p>integrates many data sources, including the Office of Emergency Management, Office of Wildland Fire, the Bureau of Land Management (BLM), and the OCIO. The DOI provided evidence of data integration from other Federal agencies, such as the U.S. Department of Transportation and NASA, and tribal governments, local governments, and institutions of higher education, such as Alaskan local governments, Pacific local governments, and the University of California.</p> <p>Further, the DOI has established an enterprise license agreement with the Environmental Systems Research Institute (ESRI) to procure GIS technology for all DOI bureaus and offices to promote data integration. To reduce the need for unique solutions for individual bureaus, the DOI implemented the Open Geospatial Consortium standard on all geospatial data for easier integration.</p>
<p>Requirement 5: Ensuring that data information products and other records created in geospatial data and activities are included on agency record schedules that have been approved by the National Archives and Records Administration (NARA)</p>	<p>NARA establishes standards for the retention of permanent records and assists Federal agencies in applying the standards to records in their custody. Record schedules detail which Federal records have temporary value and may be destroyed, and which Federal records have permanent value and must be transferred to NARA (36 C.F.R. § 1220.12). Record schedules must be approved by NARA before implementation. The DOI chief data officer stated that he does not oversee record schedules.</p> <p>We asked each bureau records officer to determine whether the bureaus currently have NARA-approved record schedules in place for geospatial data. Eight of the nine bureaus reported having a schedule in place that covers geospatial data.</p> <p>We did not validate the record schedules or the bureau's compliance with transferring data according to these schedules. Bureaus stated challenges related to transferring data to NARA, such as issues with acceptable formats when transferring data via the Electronic Records Archives system (BLM), legal holds and freezes on records (Bureau of Safety and Environmental Enforcement (BSEE)), program issues (BSEE), and out-of-date record schedules (U.S. Geological Survey (USGS)).</p>
<p>Requirement 6: Allocating resources to fulfill the responsibilities of effective geospatial data collection, production, and stewardship</p>	<p>The DOI has a chief data officer/geospatial information officer who supervises three full time employees supporting geospatial enterprise contracts, enterprise geospatial systems management and geospatial data management/stewardship, and enterprise data</p>

Requirement	Status
regarding related activities of the DOI, and as necessary to support the activities of the FGDC	<p>management and governance, which includes geospatial data.</p> <p>We determined that the following lead agencies have budget documentation that included resource allocations to fulfill the requirements as theme leads: Biodiversity and Ecosystems (USGS), Cadastre (BLM), Cultural Resources (National Park Service (NPS)), Elevation (USGS), Geology (Bureau of Ocean Energy Management and USGS), Imagery (USGS), Land Use-Land Cover (USGS), Utilities (BSEE), and Water Inland Data (U.S. Fish and Wildlife Service and USGS).</p>
Requirement 7: Using the geospatial data standards, including those for metadata, and other appropriate standards, including documenting geospatial data with the relevant metadata and making metadata available through the GeoPlatform	<p>Per review of the GeoPlatform, 6 of 9 bureaus are named as the lead agency for 9 data themes covering 75 datasets. We reviewed two datasets per data theme where a DOI bureau was the lead agency and found that the DOI provides geospatial data through the GeoPlatform.</p>
Requirement 8: Coordinating and working with other Federal agencies; agencies of State, tribal, and local governments; institutions of higher education; and the private sector to efficiently and cost effectively collect, integrate, maintain, disseminate, and preserve geospatial data, building on existing non-Federal geospatial data to the extent possible	<p>The DOI provided meeting minutes and memoranda of understanding demonstrating its coordination with other Federal agencies; agencies of State, tribal, and local governments; institutions of higher education; and the private sector. For example:</p> <ul style="list-style-type: none"> • The BLM maintains two publicly available geospatial data publication sites, hosts data and geospatial products on the ESRI ArcGIS system, participates on the Federal Lands Working Group and other multiagency groups, and leads the FGDC's Cadastral Subcommittee. • The NPS has projects with the National Boundaries Group, the FGDC, the National Geospatial Advisory Committee, several universities, and the Cooperative Ecosystems Studies Unit. • The USGS participates in the Consortium of Universities for the Advancement of Hydrologic Studies and works with the National Geospatial Advisory Committee's Landsat Advisory Group subcommittee, the AmericaView Consortium, satellite business partners, commercial data providers, the International Charter on Space and Major Disasters, the International Group on Earth Observations, the U.S. Group on Earth Observations, the Committee on Earth Observation Satellites, the European Commission, the European Space Agency, and other foreign remote sensing

Requirement	Status
	<p>system cooperators on the USGS National Land Imaging Program.</p> <ul style="list-style-type: none"> • Further, the DOI sponsors the National Geospatial Advisory Group, which provides advice and recommendations relating to the management of Federal and national geospatial programs, the development of the NSDI, and implementation of the Geospatial Data Act. The group also reviews and comments on geospatial policy and management issues and ensures the views of representatives of non-Federal interested parties involved in national geospatial activities are conveyed to the FGDC. • The DOI coordinates geospatial data with the private sector and other Federal agencies through the FGDC Homeland Infrastructure Foundation Level Data Subcommittee. The DOI also serves on the Civil Agency Committee to facilitate the appropriate civil use of overhead remote sensing technologies and data collected by the military and intelligence overhead capabilities.
<p>Requirement 9: Using geospatial information to make Federal geospatial information and services more useful to the public, enhance operations, support decision making, and enhance reporting to the public and to Congress</p>	<p>The DOI stated it uses geospatial information in many ways to ensure it is useful to the public and enhances operations, decision making, and reporting to the public and Congress. For example, the DOI uses this data to:</p> <ul style="list-style-type: none"> • Create interactive maps with geospatial information about visiting BLM-managed public lands, including recreation sites, mountain biking trails, and climbing opportunities • Focus geospatial strategy on collecting, organizing, and using baseline resource management data, such as fence line and transportation data for enhancing predictions based on geospatial data • Develop a National Sand Inventory to support oversight of requests for sand and mixed sediment from Federal waters and provide beach nourishment and coastal restoration projects • Approve or decommission pipeline processes • Analyze hurricane impacts of offshore infrastructure and production • Write land acquisition proposals for both the Land and Water Conservation Fund and the Migratory

Requirement	Status
	<p data-bbox="748 247 1159 275">Bird Conservation Commission</p> <ul data-bbox="703 317 1453 1016" style="list-style-type: none"> <li data-bbox="703 317 1453 443">• Develop a web mapping tool called NPMMap Live, which allows national parks to provide real-time information of road closures or other events on maps <li data-bbox="703 478 1453 569">• Support search and rescue operations and automated incident notifications through ESRI Survey123 <li data-bbox="703 604 1453 695">• Conduct partial inspections and continuous monitoring of mines with web-mapping systems and satellite imagery <li data-bbox="703 730 1453 863">• Create comprehensive, digital topographic base maps for all 50 States that are used for a variety of applications ranging from scientific and engineering projects to recreational use <li data-bbox="703 898 1453 1016">• Continuously monitor the earth by maintaining a readily available record of information displaying the status of the Nation's resources and environment
Requirement 10: Protecting personal privacy and maintaining confidentiality according to Federal policy and law	<p data-bbox="695 1041 1453 1556">We reviewed privacy impact assessments (PIAs) to determine the current state of the DOI's compliance with the standard for geospatial data, including whether the DOI protects personal privacy and maintains confidentiality according to Federal policy and whether law complies with the Geospatial Data Act of 2018. We found that the DOI has two systems that contain records of personally identifiable information (PII) related to geospatial data: ArcGIS and the GeoPlatform. The PII for these systems is mostly related to the creation and management of user accounts, including data such as email addresses (personal or work), the full names of the users, and user workplaces. We also confirmed through inspection of the PIAs that mitigating controls to protect privacy were documented for each system.</p>
Requirement 11: Determining, when applicable, whether declassified data can contribute to and become a part of the NSDI	<p data-bbox="695 1577 1453 1898">OMB Circular A-16 requires Federal agencies to determine, when applicable, data declassified pursuant to Executive Order 12951 that can contribute to and become a part of the NSDI. On February 24, 1995, Executive Order 12951 directed the declassification of intelligence imagery acquired by the first generation of United States photo-reconnaissance satellites from 1959 – 1980, including the systems code-named CORONA, ARGON, and LANYARD. Under this order, the declassified imagery was transferred to the USGS to</p>

Requirement	Status
	ensure the public had access to this data. We reviewed Data.gov (part of the NSDI) and noted that the USGS released 883,150 images from the CORONA, ARGON, and LANYARD systems as part of the NSDI, and the images are available for public use.
Requirement 12: Searching all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets DOI needs before expending funds for geospatial data collection	We found that the DOI risks expending Federal funds on data that is already available because it has not defined procedures to ensure that all bureaus collecting geospatial data are searching the GeoPlatform before purchasing data.
Requirement 13: Assuring, to the maximum extent practicable, that a person receiving Federal funds for geospatial data collection provides high-quality data	We found that the DOI does not have policies, procedures, or controls to monitor the bureaus to ensure that third parties receiving Federal funds for geospatial data collection provide high-quality data.
Requirement 14: Appointing a contact to coordinate with the lead covered agencies for collection, acquisition, maintenance, and dissemination of the National Geospatial Data Asset data themes used by the DOI	<p>We reviewed the OCIO's 2016 memorandum designating the chief data officer as the DOI's senior agency official for geospatial information. Pursuant to the OCIO's designation, the senior agency official for geospatial information oversees, coordinates, and facilitates the DOI's implementation of geospatial-related requirements, policies, activities, and investments. The senior agency official for geospatial information also serves as the DOI's representative on the FGDC, pursuant to OMB Circular A-16.</p> <p>We also reviewed the chief data officer's position description and determined that the chief data officer oversees and coordinates geospatial responsibilities. Further, the position description states that the chief data officer coordinates and works in partnership with Federal, State, tribal, and local government agencies; academia; and the private sector to efficiently and cost-effectively collect, integrate, maintain, disseminate, and preserve geospatial data.</p>
Requirement 15: Complying with the limitation on the use of Federal funds under Section 759a	We did not evaluate this objective because CIGIE excluded it from the scope for FY 2020 (see Appendix 1: Scope and Methodology, "Scope Limitation").

Appendix 4: Response to Draft Report

The U.S. Department of the Interior's response to our draft report follows on page 23.



United States Department of the Interior

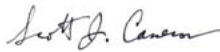
OFFICE OF THE SECRETARY

Washington, DC 20240

September 30, 2020

Memorandum


To: Mark Lee Greenblatt
Inspector General

From: Scott J. Cameron  Digitally signed by SCOTT CAMERON
Date: 2020 09 30 12:58:41 -04'00'
Acting Assistant Secretary for Policy, Management and Budget

Subject: Draft Evaluation Report – The U.S. Department of the Interior Needs to Strengthen Governance Practices to Improve Its Management of Geospatial Data Report No. 2020-ITA-020

We appreciate the work represented within this report, and we are pleased to concur with the recommendations given within the report.

Please find attached the U.S. Department of the Interior's (DOI) management response, which includes our corrective action, target completion date, and the title of the official responsible for implementing recommendation.

If your team members have any questions, please direct them to Richard Westmark, Chief, Compliance and Audit Management Officer,  [@ios.doi.gov](mailto:ios.doi.gov).

Attachment:

Management Response to Office of Inspector General 2020-ITA-020 Draft Geospatial Data Act 2018 Report

cc: William E. Vajda, Chief Information Officer, Office of the Chief Information Officer (OCIO)
Andrea Brandon, Deputy Assistant Secretary for Budget, Finance, Grants and Acquisition
Cara Whitehead, Director, Office of Grants Management
Megan Olsen, Senior Procurement Executive and Director, Office of Acquisition and Property Management
Thomas O. Dabolt, Chief Data Officer, OCIO
Richard Westmark, Chief, Compliance and Audit Management Officer, OCIO
Dr. Chadrick Minnifield, Chief, Internal Control and Audit Follow-up, Office of Financial Management

**Management Response to Office of Inspector General 2020-ITA-020
Draft Geospatial Act 2018 Report**

We agree that as the Federal Geographic Data Committee (FGDC) continues to implement the Geospatial Data Act (GDA) of 2018, the DOI will continue to improve policies and internal controls. We are generally very pleased with this first bi-annual audit of the law's implementation, and we look forward to the next bi-annual audit report in Fiscal Year 2022.

Please find our management response below to each report recommendation that includes our corrective action, target completion date, and the title of the official responsible for implementing recommendation.

OIG Recommendation 1. Ensure that bureau contracts with third-party providers of geospatial data meet FGDC-endorsed data and metadata quality standards.

Management concurs with the recommendation and will issue policy to implement this requirement. Specifically, the DOI will issue guidance to bureaus and offices requiring consideration during the acquisition planning process of whether geospatial data may be collected or acquired during the performance of the contract. If there will or might be geospatial data collected or acquired, then bureaus and offices shall include relevant language regarding FGDC standards in the contract.

The DOI will remind bureaus that the existing DOI Financial Assistance Interior Regulation (FAIR) guidance requires assistance recipients to submit to the DOI a copy of any geospatial data produced or collected when requested by the DOI.

Responsible Officials: Chief Data Officer and Deputy Assistant Secretary for Budget, Finance, Grants, and Acquisition

Target Completion Date: December 31, 2020

OIG Recommendation 2. Ensure that all bureaus and offices search the GeoPlatform to determine if existing Federal, State, local, or private data meets the DOI's needs before expending funds for data collection.

Management concurs with the recommendation and plans to issue policy to implement this requirement.

Responsible Officials: Chief Data Officer and Deputy Assistant Secretary for Budget, Finance, Grants and Acquisition

Target Completion Date: November 1, 2020

Appendix 5: Status of Recommendations

Recommendation	Status	Action Required
1	Resolved but not implemented	We will refer this recommendation to the Assistant Secretary for Policy, Management and Budget to track implementation.
2	Resolved but not implemented	We will refer this recommendation to the Assistant Secretary for Policy, Management and Budget to track implementation.

Report Fraud, Waste, and Mismanagement



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