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September 17, 2026

TO: Kathleen Baynes
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SUBJECT: Final Memorandum, *NASA's Compliance with the Geospatial Data Act for Fiscal Year 2026* (Report No. IG-26-014; Assignment No. A-26-08-00-MSD)

The Geospatial Data Act of 2018 (GDA) seeks to foster efficient, government-wide management of geospatial data—information identifying the geographic location and characteristics of natural or constructed features and boundaries on Earth.[1] The GDA aims to reduce duplication of and centralize access to geospatial data, ensure the adoption of geospatial data standards, and enhance coordination between federal agencies and non-federal users. The Act codified the Federal Geographic Data Committee (FGDC), whose responsibilities include the development, implementation, and review of policies, practices, and standards in support of the National Spatial Data Infrastructure.[2]

The GDA applies to "covered agencies," which are defined as executive departments—including NASA—that collect, produce, acquire, maintain, distribute, use, or preserve geospatial data on paper or in electronic form to fulfill the covered agency's mission, either directly or through a relationship with

[1] The Geospatial Data Act of 2018 became law on October 5, 2018, as a component of the FAA Reauthorization Act of 2018 (Pub. L. No. 115-254, Subtitle F). Geospatial data is a type of spatial data that directly or indirectly references a specific geographical area or location related to Earth. According to the U.S. Geological Survey, the terms "spatial" and "geospatial" are equivalent.

[2] The FGDC is an organized structure of federal geospatial professionals and constituents that provide executive, managerial, and advisory direction and oversight for geospatial decisions and initiatives across the federal government. The National Spatial Data Infrastructure is the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data. Further, it promotes geospatial data sharing throughout federal, state, tribal, and local governments, and the private sector, including nonprofit organizations and institutions of higher education.

another organization.[3] The Act also requires Inspectors General to audit the collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data by covered agencies at least once every 2 years. Specifically, the Act requires a review of agency compliance with (1) the geospatial data standards established under Section 757, (2) the 13 agency responsibilities listed in Section 759(a), and (3) the limitation on the use of federal funds in Section 759A.

Since 2020, we have issued three memorandums assessing NASA's compliance with the GDA. For those reviews, the Council of the Inspectors General on Integrity and Efficiency (CIGIE) convened a working group to coordinate a government-wide approach and notified Congress that the geospatial audits would primarily focus on covered agencies' progress toward compliance with the 13 responsibilities listed in Section 759(a) of the Act. For this review, CIGIE suggested that Offices of Inspector General expand the approach to include testing agency compliance with FGDC-endorsed metadata standards.[4] Therefore, we evaluated the extent to which NASA is managing its geospatial data in accordance with the Act, including testing compliance with metadata standards and evaluating NASA's progress in implementing prior years' recommendations. See Enclosure I for details on the audit's scope and methodology and Enclosure II for prior open GDA recommendations.

Background

The FGDC defines geospatial data as information tied to a location on Earth, including features shown in maps or imagery derived from technologies like remote sensing, mapping, or surveying.[5] Typically, geospatial data integrates location, attribute, and temporal components.[6] Common methods of collecting geospatial data include the Global Positioning System or GPS, which relies on satellites and ground-based instruments to deliver precise global positioning, navigation, and timing data. Likewise, remote sensing systems measure emissions and reflections from Earth and its atmosphere to generate geospatial information. Such data is stored using various platforms, including Geographic Information Systems, which facilitate the analysis and visualization of geographically referenced information. Maps are the most common way of presenting geospatial data and can provide evidence for decision-making, serve as teaching tools, and improve our understanding of natural and human-made phenomena. The power of geospatial data lies in the ability to derive new information from relationships between various data layers (e.g., an ice thickness data layer over ice coverage locations).

NASA's stewardship of geospatial data aligns with its Earth science goals to observe our planet's oceans, land, ice, and atmosphere; study Earth's interconnected systems; and build long-term data records of how our planet evolves. This information is generated through numerous NASA and partner satellite

[3] Under the GDA, covered agencies include 15 executive departments, the U.S. Environmental Protection Agency, and NASA, but excludes the U.S. Department of Defense and any element of the intelligence community.

[4] NASA defines metadata as structural or descriptive information about data, such as content, format, source, rights, accuracy, provenance, frequency, periodicity, granularity, publisher or responsible party, contact information, method of collection, and other descriptions.

[5] For more information on the FGDC's definition of geospatial data, see *Federal Geographic Data Committee (FGDC) Approved Technical Guidance* (June 2026). Remote sensing is the process of detecting and monitoring the physical characteristics of an area by measuring its reflected and emitted radiation at a distance. Special cameras, typically on satellites, aircraft, or balloons, collect remotely sensed images to help researchers "sense" things about Earth, such as temperature changes in oceans, changes in farmland or forests over several years, and tracking of clouds to predict weather.

[6] Location information usually refers to coordinates of latitude and longitude. Attribute information refers to the characteristics of the object, event, or phenomena concerned. Temporal information refers to the time or lifespan at which the location and attributes exist.

missions and field research campaigns. For more than 25 years, NASA has made its data available at no cost to private industry, academia, and the public. NASA also participates in government-wide efforts to develop data standards, create and curate metadata, and build tools to enable search and discovery, all of which help ensure interoperability with other systems, agencies, and organizations.

Roles and Responsibilities

Broadly, NASA divides geospatial data and records management responsibilities among three groups:

- The Office of the Chief Information Officer is responsible for the Agency's Records Management Program and compliance with federal regulations and requirements. Within this office, the Chief Data Officer and Records Officer direct records management and preservation. The Chief Data Officer maintains an inventory of NASA-held datasets that include geospatial data and manages the Agency's geospatial data that does not support NASA's science missions.
- The Earth Science Data Systems Program within the Science Mission Directorate oversees the life cycle of NASA's Earth science data from acquisition through processing, distribution, and archiving. The program oversees the Agency's 12 Distributed Active Archive Centers.[7] The Earth Data Officer within the program serves as the Agency's Senior Agency Official for Geospatial Information and is responsible for managing geospatial data that supports NASA science and ensuring compliance with the GDA.
- The Office of Strategic Infrastructure collects, sustains, and utilizes geospatial data to support facilities, logistics, and environmental planning and management functions at NASA centers and field locations.

Data Generation and Use

NASA is a leader in the amount of geospatial data collected, cataloged, and shared with public and private entities. As a matter of long-standing policy and practice, NASA archives Earth science data to ensure long-term usability and promote widespread usage by scientists, decision-makers, and the public. NASA has one of the world's largest repositories of Earth science data, with more than 18,500 unique data products.

NASA observes Earth and other planetary bodies via remote instruments on spacecraft, satellites, and aircraft that detect and record reflected or emitted energy. These remote instruments provide a global perspective and a wealth of data about Earth systems and enable data-informed decision-making based on the current and future state of our planet. The Science Mission Directorate is responsible for petabytes of geospatial data through its fleet of satellites and the Earth Observing System Data and Information System, which is composed of multiple systems, web infrastructure, and facilities including the Distributed Active Archive Centers.[8] Raw data is collected through NASA's satellite and Earth-based instruments, transmitted to ground stations, and then distributed to processing facilities where additional layers of data are correlated. Figure 1 depicts NASA's fleet of Earth-observing satellites used for the collection of geospatial data.

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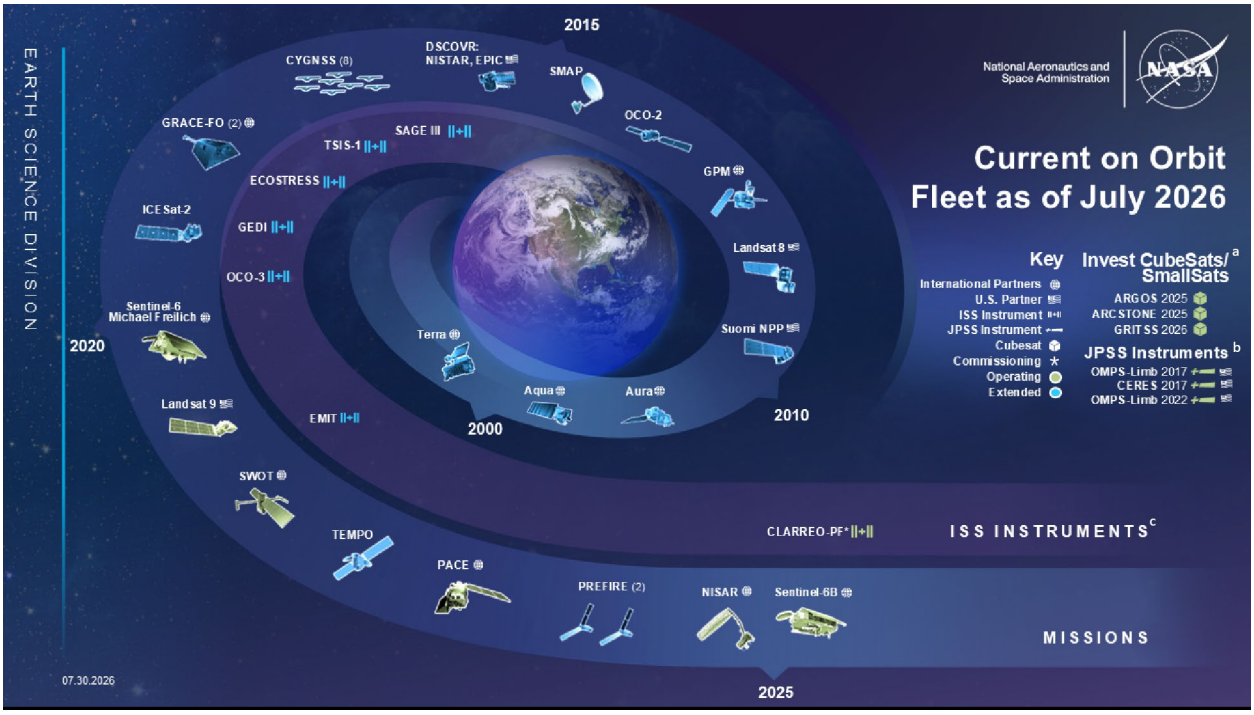
[7] Located at NASA centers, universities, and other federal agencies, Distributed Active Archive Centers are operated collaboratively by NASA and contractor staff. Organized by specific science disciplines, the centers are responsible for processing, archiving, and distributing NASA's Earth science data.

[8] Some estimates hold that a single petabyte is the equivalent of 20 million tall filing cabinets or 500 billion pages of standard printed text.

Figure 1: Current on Orbit Fleet as of July 2026



Source: NASA Earth Science Division.

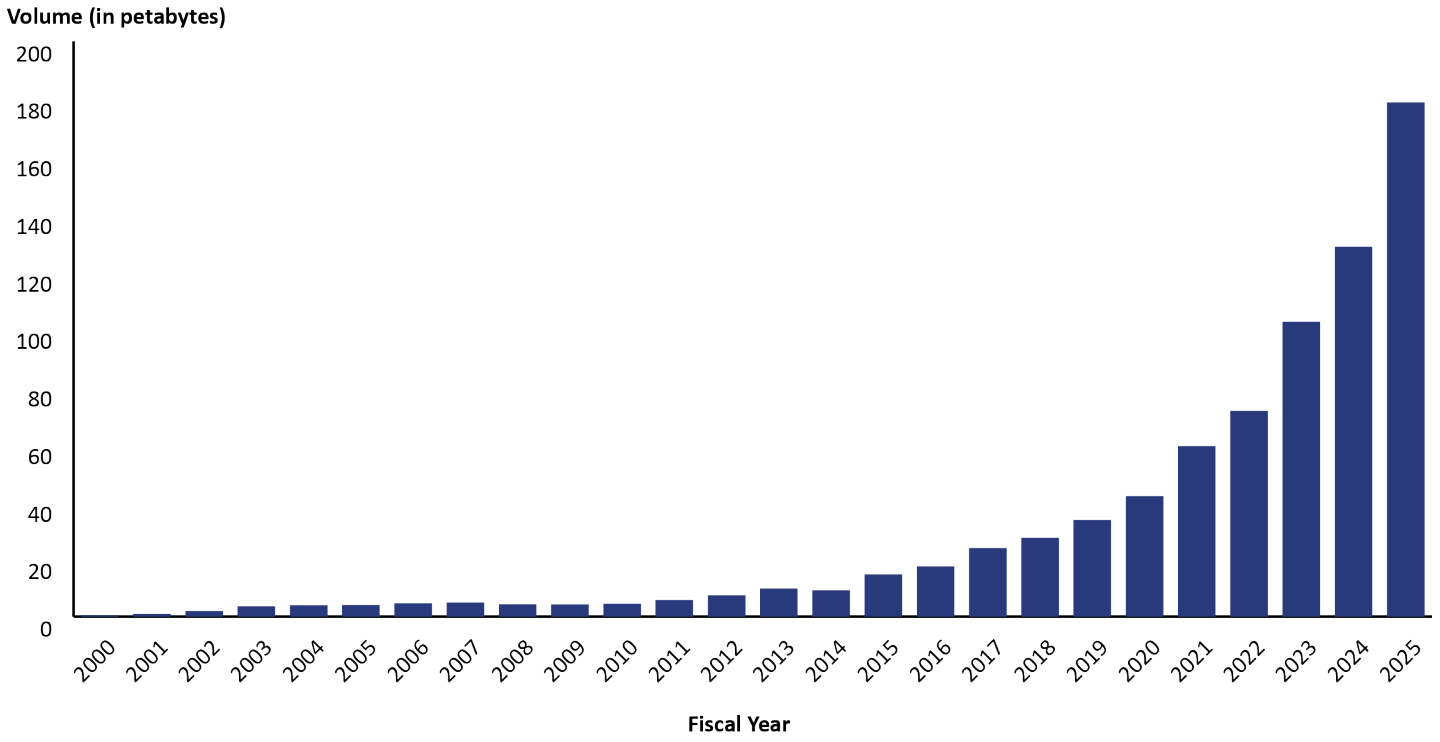
Note: Per the Science Mission Directorate, the information illustrated in Figure 1 is subject to change.

[a] In-Space Validation of Earth Science Technologies (InVEST) projects have validated new instruments and information systems by installing small satellite platforms on bread loaf-sized CubeSats (research nanosatellites).
[b] The Joint Polar Satellite System (JPSS) is composed of polar-orbiting environmental satellites that provide full coverage of Earth, meteorological data, and observations of the atmosphere, oceans, and lands.
[c] International Space Station (ISS) instruments focus on such topics as the Earth's changing climate, vegetation measurements, carbon dioxide distribution, and the Sun's energy input to Earth.

Three datasets derived from NASA's Earth-observing satellite fleet—two from the Terra mission and one from the Aqua mission—are officially designated as National Geospatial Data Assets.[9] These are assets that provide critical geospatial data in support of multiple agencies, statutory mandates, or national priorities. The Terra and Aqua datasets are just a small fraction of the geospatial data NASA collects through its fleet of Earth-observing satellites. The addition of Earth-observing satellites to NASA's fleet, coupled with advancements in instrumentation, have resulted in exponential growth of Earth science and geospatial data archived at the Agency over the last decade, reaching approximately 180 petabytes of data in fiscal year (FY) 2025. Figure 2 illustrates NASA's data growth since FY 2000.

[9] Terra, launched in 1999, observes the Earth's atmosphere, oceans, land, snow and ice, and energy budget to provide insight into how the Earth system works and how it is changing. Aqua, launched in 2002, collects information about the Earth's water cycle and measures radiative energy fluxes; aerosols; vegetation cover on the land; phytoplankton and dissolved organic matter in the oceans; and air, land, and water temperatures. A National Geospatial Data Asset is a geospatial dataset designated by the FGDC that meets at least one of the following criteria: (1) used by multiple agencies or with agency partners, such as state, tribal, and local governments; (2) applied to achieve presidential priorities as expressed by the Office of Management and Budget; (3) required to meet shared mission goals of multiple federal agencies; or (4) required by statutory mandate.

Figure 2: Growth of Earth Science Data in NASA's Archive from FYs 2000 to 2025



Source: NASA Office of Inspector General (OIG) presentation of data from NASA's Earth Observing System Data and Information System Fiscal Year 2025 Annual Metrics Report.

This trend is expected to continue as new missions collect data. For example, the NASA–Indian Space Research Organisation Synthetic Aperture Radar (NISAR) satellite, launched in 2025, collects global observations of land and ice-covered regions every 6 days and is expected to generate roughly 100 petabytes of data over the course of its 3-year mission. The mission entered its science operations phase in January 2026, beginning routine long-term data collection for research and applications.

NISAR data is archived, made available to the public, and is used to support scientific and hazard-related analysis. For instance, NISAR data is utilized to study ongoing ground subsidence in Mexico City, where the land has fallen and compacted due to long-term extraction of groundwater, causing the city to sink by more than half an inch per month. NISAR data was also used to show how the ground shifted in Venezuela after the country experienced a magnitude 7.2 earthquake—followed by a magnitude 7.5 earthquake—in June 2026. These early applications highlight the wide range of uses for NASA's Earth observation data and reinforce the importance of ensuring such data remains accessible, useful, and widely used by the public.

Artist's Concept of the NISAR Satellite Orbiting Earth

Source: NASA.

Metadata and Records Preservation

Preserving any type of information necessitates retaining both the information itself and sufficient context surrounding the information to render it understandable in the future. For geospatial data, capturing and preserving enough of the data's context is especially challenging. In simpler contexts, knowledge of the format (for instance, a PDF document) is sufficient to support future usability of data. Geospatial data, however, tends to require much more complex contextual information. For example, understanding remote sensing imagery in a scientific model requires detailed knowledge of the specific vehicle used and the sensor's characteristics, and in many cases, calibration and processing steps as well. It is only in combination with this contextual information—metadata—that geospatial data can be rendered useful for scientists and the public. Similar to a library catalog, metadata records document the who, what, when, where, how, and why of a data resource. Data fields including title, description, keywords, contact information, and distribution links are all metadata.

The GDA requires covered agencies to use metadata standards established by the FGDC. Although the FGDC has not yet established its own metadata standards, it has endorsed several existing standards that agencies are expected to follow.[10] These endorsed standards offer a standardized way of describing a dataset, such as what it is, where it applies, when it was collected, how it was created, and who is responsible for it. To comply with FGDC-endorsed standards, NASA uses the Unified Metadata Model for Collections as the internal framework for creating consistent and complete metadata. This model aligns with standards and outlines the essential information NASA Earth science datasets must include.

NASA houses its geospatial metadata through the NASA Earthdata portal, which includes the Common Metadata Repository, the main catalog for NASA's Earth science products. Since the repository was built for the NASA research community, the Agency developed a metadata pipeline to translate the repository's proprietary metadata into formats compatible with Data.gov. The translated metadata is sent to the Agency Data Catalog, an internal application that serves as the Agency's comprehensive data inventory. The data is then made publicly available on the NASA Open Data Portal or data.nasa.gov, where it is harvested by Data.gov and GeoPlatform.gov.[11] This process is used to make NASA's metadata discoverable and usable across federal platforms. Enclosure III provides an example of how geospatial data flows from NASA to Data.gov and GeoPlatform.gov, as well as the resulting record.

Lastly, the GDA requires agencies to have National Archives and Records Administration (NARA) approved records schedules for data information products or other records like metadata created by geospatial data. According to NARA, a record is information, regardless of format, that is created or received by the government in the course of business and preserved due to evidential or informational value. NARA has general oversight responsibilities for preservation of permanent records documenting the activities of the federal government. Representatives from both NARA and NASA develop a disposition schedule to ensure all NASA geospatial records are retained for the appropriate length of time. While NARA provides authoritative instructions for the retention, destruction, and retirement of records, it is only at the conclusion of this process that a final NASA records schedule is approved by the Archivist of the United States.

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[10] The FGDC specifically recommends covered agencies adhere to the Content Standard for Geospatial Metadata and several International Organization for Standardization (ISO) standards, primarily ISO 19115, for documenting geospatial data on Data.gov and GeoPlatform.gov. Data.gov is the federal government's central open data catalog. GeoPlatform.gov is a shared federal service providing access to authoritative geospatial data, applications, and tools from across federal agencies that are harvested from Data.gov.

[11] Harvesting is the automated process that pulls dataset metadata from federal agency catalogs into Data.gov on a scheduled basis.

NASA HAS MET EXPECTATIONS FOR MOST GDA RESPONSIBILITIES BUT PROGRESS REMAINS

We found that NASA has met 7 of 13 GDA responsibility areas, with five responsibilities remaining in progress and one being not applicable. Since our FY 2024 geospatial data audit, NASA has met an additional responsibility and continued efforts toward fully implementing the GDA's 13 responsibilities and addressing our previous recommendations. Specifically, NASA met expectations for establishing roles and responsibilities for managing geospatial data. However, progress is still needed for completing the Agency's geospatial data inventory and establishing records schedules for geospatial data with NARA. As such, the recommendations we made to NASA to address geospatial data inventory and records preservation in our FY 2022 audit remain open.

See Table 1 for a list of GDA Section 759(a) responsibilities and our FY 2024 and FY 2026 assessments of NASA's progress in each of those areas.

Table 1: NASA's Progress Toward Implementing GDA Section 759(a) Responsibilities (as of August 2026)

GDA Section 759(a) Responsibilities Each Covered Agency Shall—		NASA OIG FY 2024 Assessment	NASA OIG FY 2026 Assessment
1	prepare, maintain, publish, and implement a strategy for advancing geographic information and related geospatial data and activities appropriate to the mission of the covered agency, in support of the strategic plan for the National Spatial Data Infrastructure prepared under section 755(c) of this title;	P	ME
2	collect, maintain, disseminate, and preserve geospatial data such that the resulting data, information, or products can be readily shared with other Federal agencies and non-Federal users;	P	P
3	promote the integration of geospatial data from all sources;	P	P
4	ensure 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;	P	P
5	allocate resources to fulfill the responsibilities of effective geospatial data collection, production, and stewardship with regard to related activities of the covered agency, and as necessary to support the activities of the Committee;	P	P
6	use the geospatial data standards, including the standards for metadata for geospatial data, and other appropriate standards, including documenting geospatial data with the relevant metadata and making metadata available through the GeoPlatform;	ME	ME
7	coordinate and work in partnership 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 upon existing non-Federal geospatial data to the extent possible;	ME	ME
8	use geospatial information to—(A) make Federal geospatial information and services more useful to the public; (B) enhance operations; (C) support decision making; and (D) enhance reporting to the public and to Congress;	P	P

	GDA Section 759(a) Responsibilities Each Covered Agency Shall—	NASA OIG FY 2024 Assessment	NASA OIG FY 2026 Assessment
9	protect personal privacy and maintain confidentiality in accordance with Federal policy and law;	ME	ME
10	participate in determining, when applicable, whether declassified data can contribute to and become a part of the National Spatial Data Infrastructure;	N/A	N/A
11	search all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets the needs of the covered agency before expending funds for geospatial data collection;	ME	ME
12	to the maximum extent practicable, ensure that a person receiving Federal funds for geospatial data collection provides high-quality data; and	ME	ME
13	appoint 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 covered agency.	ME	ME

Source: Pub. L. No. 115-254 and NASA OIG analysis of Agency data.

Note: Progress (P), Meets Expectations (ME), and Not Applicable (N/A). Progress means the agency made progress toward meeting the expectation of the responsibility, and Meets Expectations means the agency has met the expectation of the responsibility.

NASA Continues to Meet Expectations for Most Covered Agency Responsibilities

Since our FY 2024 audit, NASA has met expectations for Responsibility No. 1 as the Agency has closed three recommendations from our prior audits related to NASA's strategy for advancing geographic information and related geospatial data activities. The Agency implemented a memorandum of understanding between the Office of the Chief Information Officer and Science Mission Directorate, which formally assigned a Senior Agency Official for Geospatial Information. The memorandum of understanding also clearly defined roles and responsibilities for the management of NASA geospatial data. Furthermore, the Agency finalized guidance, which defines the roles and responsibilities for each data domain within the Agency.[12]

During this audit, we tested the Agency's compliance with Responsibility No. 6 pertaining to metadata standards and making metadata available and found that NASA met expectations. We judgmentally sampled 50 datasets from Data.gov and tested the records for completeness. We found the records generally contained all required information. However, NASA officials have noted recurring challenges in the harvesting of data from the Agency's Common Metadata Repository to Data.gov and GeoPlatform.gov. Specifically, there are issues with how Data.gov presents resource links and displays keywords associated with the Agency's published datasets. NASA is working to address these ongoing issues by updating workflows, developing interoperability between platforms, and updating its metadata extraction processes to improve metadata display consistency.

[12] NASA Interim Directive 2800.149, *NASA Data Governance, Roles, and Responsibilities* (December 3, 2024). Data domains are a distinct, logically grouped collection of data elements that share a common context. Examples of data domains might include personnel management, financial transactions, operational metrics, and geospatial data.

Responsibility Nos. 7 and 13 relate to coordinating with and making geospatial data accessible to other entities. We found that NASA has long-standing partnerships and agreements with other federal agencies, institutions of higher education, and the private sector to process, archive, and make geospatial data available to the public. For example, under a memorandum of understanding with the U.S. Geological Survey, the Agency established a point of contact for the collection, acquisition, maintenance, and dissemination of NASA's National Geospatial Data Assets. Further, NASA's partnership with the National Oceanic and Atmospheric Administration on the Joint Polar Satellite System continues to provide important environmental data in support of national initiatives. This includes forecasting severe weather like hurricanes, tornadoes, and blizzards days in advance, and assessing environmental hazards such as droughts, forest fires, poor air quality, and harmful coastal waters. Lastly, NASA partners with the University of Colorado and Columbia University to process and distribute scientific data to the public.[13]

NASA also continues to meet expectations for Responsibility Nos. 9, 11, and 12 related to ensuring high-quality data is obtained and protected. The NASA Office of the Chief Information Officer requires all system, application, and information owners to fully comply with NASA privacy policy and procedures and mandates privacy and cybersecurity training for all employees. In addition, NASA searches all public and private data sources to ensure non-duplication of efforts in collecting geospatial data before expending funds to collect geospatial data as required by federal and Agency regulations, directives, and requirements. Further, the Agency ensures data is high quality through its various data product development guides, a data quality working group, and customer satisfaction metrics.

Responsibility No. 10 requires agencies to determine whether declassified data can contribute to the National Spatial Data Infrastructure. As NASA does not handle declassified geospatial data, Responsibility No. 10 is not applicable.

Further Progress Needed for Completing an Inventory and Establishing Records Schedules

NASA's inventory of its geospatial data remains incomplete because it has yet to include non-Earth science data assets. NASA officials previously acknowledged that an unknown number of non-Earth science geospatial data likely existed in other Agency organizations, such as assets related to institutional operations managed by other directorates. Since our FY 2024 audit, NASA published the NASA Data Strategy, which implemented a federated data governance framework for all NASA data including geospatial data.[14] The federated data management model compiles data into the Agency Data Catalog, which provides a real-time inventory of all data holdings. In April 2026, the Agency conducted a data call requesting geospatial metadata from all NASA facilities to include in the catalog. According to NASA officials, the Agency is in the last stages of completing the migration of non-Earth science geospatial data into the Agency Data Catalog and expects to complete the process by the end of FY 2026. Until the Agency has completed the import of geospatial metadata into the catalog, Responsibility Nos. 2, 3, 5, and 8 will remain in progress and our FY 2022 recommendation will remain open.

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[13] NASA's National Snow and Ice Data Center in Boulder, Colorado, operated by the University of Colorado Boulder and the National Oceanic and Atmospheric Administration, provides data and information on the interactions among snow, ice, the atmosphere, and the ocean. NASA's Socioeconomic Data and Applications Center in Palisades, New York, operated by Columbia University, synthesizes Earth science and socioeconomic data and information on such topics as human population distribution, human settlements and infrastructure, natural hazards, poverty, and pollution.

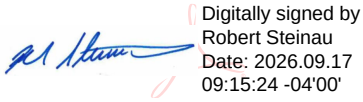
[14] NASA, *NASA Data Strategy FY 2025 – FY 2027* (2025). In a federated data management model, data is organized by several data domains, which would result in NASA having an inventory of all its data holdings.

Responsibility No. 4 also remains in progress as the Agency has yet to finalize records schedules with NARA. Previously, NARA acknowledged that very large datasets, like those produced by NASA, pose unique challenges that require further exploration within the larger community of federal Chief Data Officers. These challenges include volume of information produced, specialized software needed to interpret the data, and access requirements. According to NARA appraisal policies, observational data, including geospatial data, warrants treatment as a record due to the long term and potentially permanent value of the information to provide historic baselines. Observational data is often unique and non-repeatable, making it evidence of a particular measurement. In discussions with NASA officials, a NARA appraisal team is currently working with the National Geospatial Agency on a records schedule that will likely serve as a template for other agencies that create vast amounts of geospatial data.

However, the NASA Records Office contends that any record output derived from geospatial data is covered by existing schedules. For example, records from Earth-observing satellite data would be covered by existing NASA Records Retention Schedules. Agency correspondence with NARA has acknowledged the possibility of establishing an affiliated archive agreement between the two agencies, though discussions are in the early stages and a formal agreement would need time to take place.[15] Until NASA and NARA can establish the appropriate level of data to include in NARA's approved records schedules, our previous recommendation will remain open and efforts to meet Responsibility No. 4 will remain in progress. See Enclosure II for prior GDA recommendations that remain open.

CONCLUSION

While we are not making any formal recommendations, we noted two GDA responsibility areas in which NASA needs to continue to make progress to meet expectations. We discussed this memorandum with Agency officials and incorporated their technical comments and revisions to address them as appropriate. If you have questions or wish to comment on the quality or usefulness of this memorandum, contact Laurence Hawkins, Audit Operations and Quality Assurance Director, at 202-358-1543 or laurence.b.hawkins@nasa.gov.



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NASA OIG Senior Official

[15] Affiliated archive agreements are an alternative to the usual physical transfer of permanent historical records into a NARA facility from the creating agency. Essentially, the records are treated like any other records in the National Archives, but the creating agency is responsible for all costs associated with establishing and maintaining the records and archival facility. In 2020, we previously reported on the possibility of NARA and NASA establishing an affiliated archive agreement (see IG-21-001, recommendation 4). However, in 2022, while NARA acknowledged that very large datasets pose unique challenges, it was reluctant to establish an affiliated archive agreement. Nevertheless, NARA officials stated they will continue to work with NASA to explore options for maintaining and preserving large bodies of scientific data. Therefore, we closed the 2020 audit recommendation.

cc: Sean Gallagher
Chief Information Officer

Nicola Fox
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John Bailey
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Denise Thaller
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Enclosures—3

Enclosure I: Scope and Methodology

We performed this audit from April through August 2026 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our audit objective was to evaluate the extent to which NASA fulfilled its responsibilities for managing its geospatial data in accordance with the GDA for FY 2026. To determine whether NASA fulfilled its responsibilities under the Act, we reviewed applicable laws and regulations; examined the Agency's Geospatial Data Strategy and implementation plan; and interviewed NASA personnel, including the Chief Data Officer, Senior Agency Official for Geospatial Information, and Records Officer. We received and analyzed memorandum of understanding and agreement documentation. We also attended CIGIE working group meetings to coordinate a government-wide approach for the FY 2026 geospatial data audit and utilized applicable audit steps outlined in the CIGIE guidance.

Additionally, we reviewed the FGDC's publication of endorsed geospatial and metadata standards as a basis to evaluate the Agency's compliance with Responsibility No. 6. To test metadata, we utilized FGDC's technical guidance to assess the key required data fields. We took a judgmental sample of 50 NASA datasets from Data.gov and assessed the completeness of required metadata fields, with 20 being from the National Geospatial Data Assets datasets. The assessment included verifying key metadata fields described in FGDC-endorsed standards and best practices were followed. We developed a spreadsheet that tested for the existence of selected key content fields. The selected content fields were (1) an abstract, (2) a publication date, (3) the date the metadata was last updated, (4) the presence of a unique identifier, (5) keywords, (6) a listed point of contact, (7) download URLs, (8) spatial extent (coordinates), (9) temporal extent (dates), (10) raw metadata, and (11) the presence of metadata on GeoPlatform.gov.

Assessment of Data Reliability

In satisfying our objective, we relied on computer-processed metadata records available on Data.gov. We tested the data primarily for completeness. We assessed the reliability of data on Data.gov by (1) performing electronic testing to check for obvious errors in accuracy and completeness, (2) reviewing related and existing information about the data and system that produced them, and (3) interviewing Agency officials knowledgeable about the data. No discrepancies or data quality issues were noted. We determined that this data was sufficiently reliable to support our findings. Although we could not independently verify the reliability of all the information we collected, we compared it with other available supporting documents and information sources to determine data consistency and reasonableness. Based on these efforts, we believe the information we obtained is sufficiently reliable for this memorandum.

Review of Internal Controls

We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objective. Specifically, we assessed the control environment internal control component and the underlying principles related to establishing structure, responsibility, and authority. However, because our review was limited to these internal control components and underlying principles, it may not have

disclosed all internal control deficiencies that may have existed at the time of this audit. Any internal control deficiencies identified are discussed in this memorandum.

Prior Coverage

During the last 6 years, the NASA Office of Inspector General issued three memorandums of significant relevance to the subject of this memorandum. Unrestricted memorandums can be accessed at https://oig.nasa.gov/audits/.

NASA's Compliance with the Geospatial Data Act for Fiscal Year 2024 (IG-24-017, September 4, 2024)

NASA's Compliance with the Geospatial Data Act for Fiscal Year 2022 (IG-23-001, October 5, 2022)

Audit of NASA's Compliance with the Geospatial Data Act (IG-21-001, October 2, 2020)

Enclosure II: Prior Open GDA Recommendations

We close recommendations from prior audits if corrective actions were completed and verified. However, if recommended or additional corrective actions are necessary, prior recommendations will remain open until evidence is provided that adequately satisfies the intent of the recommendation. Table 2 lists the recommendations we made in our FY 2022 assessment of NASA's compliance with the GDA that remain open as of August 2026.

Table 2: Prior Open GDA Recommendations

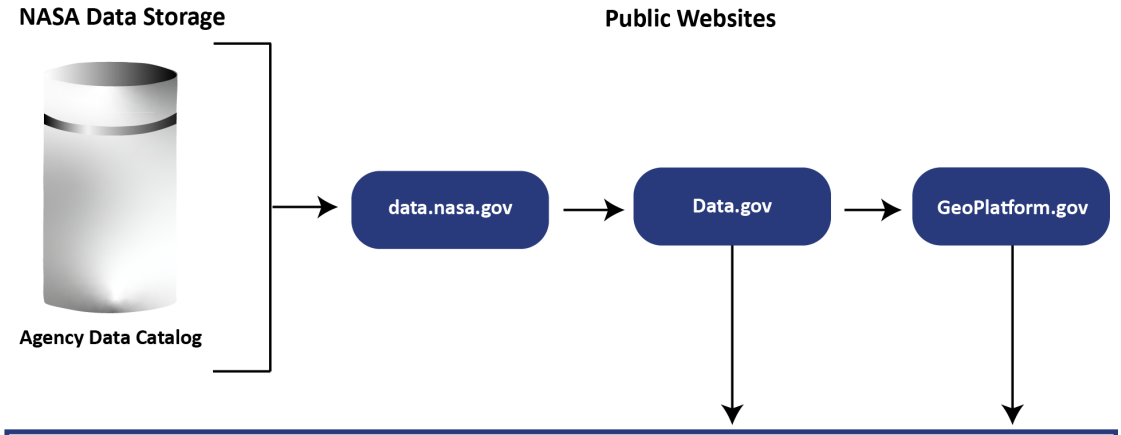
OIG Report Number	Recommendation Number	Recommendation	Fiscal Year Assessment
IG-23-001	3	The implementation plan for the Geospatial Data Strategy contains detailed action items and milestones, including those for developing a complete and accurate inventory of the Agency's geospatial data.	2022
IG-23-001	4	Continued coordination with NARA to establish the appropriate level of scientific data for inclusion in NARA approved-records schedules.	2022

Source: NASA OIG.

Enclosure III: Geospatial Data Flow from NASA to Data.gov and GeoPlatform.gov

Figure 3 depicts the flow of geospatial data from NASA for public consumption. Geospatial metadata stored in NASA's Agency Data Catalog flows to Data.nasa.gov, then Data.gov, which in turn populates GeoPlatform.gov.

Figure 3: Geospatial Data Flow from NASA to Data.gov and GeoPlatform.gov



Example of Portion of Metadata on Data.gov and GeoPlatorm.gov

▼5:

@type:	"dcat: Distribution"
description:	"This application allows you to interactively browse global satellite imagery within hours of it being aquired. You can also save it, share it, and download the underlying data."
downloadURL:	https://worldview.earthdata.nasa.gov/?v=-195,-74.40494791666666,145,87.40494791666666&l=MODIS_Aqua_L3_Snow_Extent_8Day(disabled=1-2-3-4-5-6-7-8-9-10),Coastlines_15m,MODIS_Terra_CorrectedReflectance_TrueColor&lg=false&t=2002-07-04-T00%3A00%3A00Z
format:	"HTML"
mediaType:	"text/html"
title:	"Get a related visualization through WORLDVIEW"
identifier:	C1646610247-NSIDC_ECS"
issued:	"2002-07-04"

▼ keyword:

0:	"cryosphere"
1:	"earth-science"
2:	"national-geospatial-data-asset"
3:	"ngda"
4:	"snow-ice"

The above is an example of the type of metadata available on Data.gov and GeoPlatform.gov describing a particular dataset, which in this case is the MODIS/Aqua Snow Cover 8-Day L3 Global 500m SIN Grid V061. The "distribution" field refers to the aggregate metadata specific to a dataset's resources (e.g., "downloadURL," which provides direct access to a downloadable file of a dataset). "Identifier" and "keywords" allow for proper citation and discoverability of the dataset, and "issued" refers to the date of formal issuance.

Source: NASA OIG presentation of Agency data.