



**2021 Lead Covered Agency  
NGDA Theme Annual Performance Report  
and Self-Assessment**  
*for*  
**Imagery Theme**

**Geospatial Data Act of 2018  
Section USC 43 Sec 2805(b)(3) Requirements**

February 4, 2022



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## Introduction

The Geospatial Data Act of 2018 (GDA) was signed into law on October 5, 2018. The GDA was included as a component of the FAA Reauthorization Act (H.R. 302, P.L. 115-254). The GDA is now in [U.S. Code, Title 43 – Public Lands, Chapter 46: GEOSPATIAL DATA](#).

The GDA Section 2805(b)(3)(E)(I) requires performance reports to be submitted to the Federal Geographic Data Committee (FGDC) that document “the activities relating to and implementation of the National Geospatial Data Asset [NGDA] data theme, including progress in achieving the requirements under subparagraphs (A), (B), (C), and (D)” of Section 2805(b)(3).

This 2021 Lead Covered Agency NGDA Theme Annual Performance Report (LCA NGDA Theme Report) covers the period of October 1, 2020 through Fiscal Year (FY) 2021, September 30, 2021 and uses agency self-assessments for this report to the FGDC. Reports will be developed annually and will span one fiscal year period. Lead covered agencies will ensure that one consolidated report per NGDA theme is submitted to FGDC. This report will include a rating for each responsibility of "meets expectations," "made progress toward expectations," or "fails to meet expectations," as required by the GDA. A report template and survey were developed to facilitate consistent self-assessments and consolidated reports. As per the GDA, a summary and evaluation of the progress to achieve the requirements will be generated by FGDC and will be provided to the National Geospatial Advisory Committee (NGAC) for comment. Summary reports with NGAC comments and other required reports and information will be available online via the [FGDC GDA pages](#).<sup>1</sup>

The revised Circular A-16 is currently in development for release by the Office of Management and Budget (OMB) and is intended to provide guidance and direction for the FGDC on management of the GDA requirements. Following the release of the updated OMB Circular A-16, the FGDC anticipates conducting a review of its governance structure, including its working groups and subcommittees, to ensure that they support the needs of FGDC agencies and have the proper resources and structure to meet the requirements for facilitating agencies’ work to meet requirements of the GDA.

This 2021 NGDA Theme LCA annual performance report template uses the GDA definition for NGDA data theme as the foundation for reporting compliance *for the data within the theme*. From the GDA definitions, NGDA data theme “means the NGDA core geospatial datasets (including electronic records and coordinates) relating to a topic or subject designated under Section 2805.” FGDC anticipates that future enhancements to the reporting process will include a mechanism to gather information at the dataset level which can then be reported at the theme and agency level to provide a greater level of granularity for annual reporting and better management of the NGDA Portfolio.

The focus of this report will be to document both the ongoing processes, procedures, and actions within agencies that manage the NGDA datasets, and the FGDC activities underway for identifying common definitions and approaches for meeting the requirements for plans and actions identified in the GDA.

## Executive Summary

This report is the result of continued efforts across the FGDC and the NGDA theme community to evaluate the requirements of the GDA in the context of the goals and objectives of the [National Spatial Data Infrastructure \(NSDI\) Strategic Plan 2021-2024](#).<sup>2</sup> The report is meant to highlight an emerging understanding of these requirements, communicate the steps that FGDC is undertaking to ensure governance processes are in place that build on the accomplishments to date, and lay out an approach for collaboratively moving forward. Communication of the necessary actions and next steps across the FGDC is the cornerstone of this report.

This annual performance report documents progress made in meeting GDA requirements since the initial, baseline, report was submitted in 2020. This second annual report for the Imagery Theme provides insights into both ongoing, cross-cutting FGDC portfolio management, and agency and theme-specific activities that align with GDA requirements.

FGDC agencies, in coordination with the FGDC Office of the Secretariat (OS), provided leadership and input for GDA requirements analysis as part of ongoing theme strategic planning and implementation activities. Progress made by all NGDA themes for this reporting cycle centers on two key GDA requirements – geospatial data standards and establishing a plan for nationwide population of the NGDA data themes (or core datasets). The collaborative efforts included development of two briefing papers outlining the issues, benefits, challenges, and recommended actions for advancing each requirement. The anticipated outcomes, with FGDC Steering Committee approval, will include formation of two task teams to further evaluate the respective GDA requirements, establish a collaborative approach with government and nongovernment leaders, partners, and stakeholders, and develop recommendations for FGDC on required governance, technical guidance, and actions.

Theme-related information gathered during the 2020 LCA reporting process will also be used to support GDA requirements for geospatial data standards and nationwide population of the data theme. The reported information included participation in FGDC Subcommittees and Working Groups, National and International voluntary consensus standards bodies, International geospatial Working Groups supporting standards, other activities undertaken by agencies to support standards, and theme partners and partnership programs. FGDC will analyze the information collected and the existing GeoPlatform [Theme Community](#)<sup>3</sup> content to determine how best to redesign the theme pages to host the relevant information.

Prior to the enactment of the GDA, the FGDC conducted Lifecycle Maturity Assessments (LMA) based on the A-16 Supplemental Guidance [Stages of the Geospatial Lifecycle](#).<sup>4</sup> As described in the FY2020 LCA NGDA Theme Reports, these assessments were conducted in 2015 and 2017 and resultant [Theme LMA Summary Reports](#)<sup>5</sup> and Dashboards were made available online through GeoPlatform.gov. While the LMA process was put on hold following the enactment of the GDA, it is seen as a key component moving forward. Following the release of the updated OMB Circular A-16, the FGDC will analyze that guidance and evaluate the LMA process for adoption and use to capture the lifecycle information from agencies and dataset managers. The LMA process could be used to dynamically augment these GDA annual reports and will also be analyzed as part of developing and implementing the plan for nationwide population of the NGDA data themes (core datasets).

This report has been developed using an NGDA Theme Lead consensus-driven report template that provides consistent reporting across all NGDA Themes.

### Official Theme Related Information

As per the OMB Circular A-16 Supplemental Guidance, official theme related information includes designated points of contact for NGDA Portfolio management, including Theme Leads and Executive Champions, and the official list of NGDA datasets. As further described in the sections below, this information is maintained on the GeoPlatform [NGDA Portfolio Community](#)<sup>6</sup> site.

### NGDA Theme Points of Contact

**Reference:** [USC 43 Sec 2805\(b\)\(3\)\(E\)\(i\)](#)

Section 2805(b)(3)(E)(i) requires lead covered agencies to “designate a point of contact within the lead covered agency who shall be responsible for developing, maintaining, coordination relating to, and disseminating data using the GeoPlatform” as part of administering the NGDA theme.

In accordance with the current OMB Circular A-16 Supplemental Guidance, NGDA theme personnel play an ongoing, vital role in the operation and maintenance of a theme. They are individuals who provide interdepartmental leadership and coordination at the NGDA theme level and work with NGDA dataset managers to facilitate, among other things, portfolio development including activities associated with standards and guidance.

Traditionally, these roles have been coordinated through lead covered agencies with the FGDC Office of the Secretariat and the NGDA theme lead assuming a majority of NGDA theme responsibilities. Transitioning to meet specific GDA responsibilities provides opportunities for lead covered agencies to designate specific points of contact to coordinate an expanding portfolio of datasets across the NGDA theme and for greater dissemination of data through the GeoPlatform.

Theme and agency points of contact provided in Table 1 below are maintained to meet requirements from the [A-16 Supplemental Guidance Roles and Responsibilities](#).<sup>7</sup> This information is kept up-to-date in the NGDA Portfolio Community on [NGDA Theme Leads](#)<sup>8</sup> and [NGDA Executive Theme Champions](#)<sup>9</sup> pages.

Imagery Theme Contacts	
<b>Theme Lead(s):</b>	Gregory Snyder, U.S. Department of the Interior, U.S. Geological Survey David Davis, U.S. Department of Agriculture, Farm Production and Conservation
<b>Executive Theme Champion(s):</b>	David Carter, U.S. Department of the Interior Ron Sequeira, U.S. Department of Agriculture

**Table 1. Theme and Lead Covered Agency Points of Contact Involved in Theme Management.**

### NGDA Theme Portfolio Datasets

The NGDA datasets and the agencies listed in Table 2 are provided as the official list of NGDA that currently populate the Imagery Theme. If the theme includes NGDA datasets managed by non-covered agencies, they are shown in bold. Support for GDA requirements by these non-covered agencies is very

important to the success of the themes. The official list of [NGDA Portfolio Datasets](#)<sup>10</sup> is maintained on the GeoPlatform and is provided here [filtered by the Imagery Theme](#). Each NGDA dataset also has a unique value assigned, called an NGDAID, that allows the dataset to be tracked throughout its lifecycle.

NGDAID	Imagery Theme NGDA Datasets	Agency
98	Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)	National Aeronautics and Space Administration
99	Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua	National Aeronautics and Space Administration
100	Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra	National Aeronautics and Space Administration
101	NOAA Coastal Mapping Remote Sensing Data	U.S. Department of Commerce, National Oceanic and Atmospheric Administration
103	Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -	U.S. Department of the Interior, U.S. Geological Survey
104	Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -	U.S. Department of the Interior, U.S. Geological Survey
105	Landsat 4-5 Thematic Mapper Collection 1 Level-1 -	U.S. Department of the Interior, U.S. Geological Survey
106	National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery	U.S. Department of Agriculture, Farm Service Agency
187	High Resolution Orthoimagery Collection - Historical	U.S. Department of the Interior, U.S. Geological Survey
191	Landsat 8 Operational Land Imager and Thermal Infrared Sensor Collection 1 Level-1 -	U.S. Department of the Interior, U.S. Geological Survey

**Table 2. Theme NGDA Datasets.**

[Meeting General Responsibilities – USC 43 Sec 2805\(b\)\(2\)](#)

**Reference:** [USC 43 Sec 2805\(b\)\(2\)](#)

**Q1. How is the Lead Covered Agency(ies) participating in ensuring the coordinated management of the Theme?** (Select all that apply - see Appendix A for complete list of optional responses)

- Lead Agency, or Co-Lead Agencies, have published a geospatial strategy as required by the GDA
- Theme Lead(s) attend NGDA Theme Community Meetings
- Theme Lead(s) participate in GDA Working Group meetings
- Theme Lead(s) review the outcomes from GDA Working Group meetings and provide feedback on approaches for GDA compliance
- Theme Lead(s) coordinate GDA compliance activities with Theme personnel
- Theme Lead(s) communicate new and ongoing Portfolio Management activities and priorities with Dataset Managers in the Theme
- Steering Committee members coordinate with the Theme

## Managing Theme-Related Content on GeoPlatform

The baseline 2020 LCA NGDA Theme Report gathered theme specific information in a series of tables to reflect compliance with the GDA requirements. This content was captured to describe agency efforts that can be used moving forward to support development of the plans required by the GDA. As continued progress towards meeting requirements of the GDA, the NGDA theme community will evaluate redesign of theme community sites to allow agencies to provide current information to the public and stakeholders related to theme management.

## A. Geospatial Data Standards

GDA Requirement	<p>USC 43 Sec 2805(b)(3)(A) – Provide leadership and facilitate the development and implementation of geospatial data standards for the National Geospatial Data Asset data theme, with a particular emphasis on a data content standard for the National Geospatial Data Asset data theme, including by—</p> <ul style="list-style-type: none"> <li>i. assessing existing standards;</li> <li>ii. identifying anticipated or needed data standards; and</li> <li>iii. developing a plan to originate and implement needed standards with relevant community and international practices — <ul style="list-style-type: none"> <li>I. in accordance with Office of Management and Budget Circular A– 119, or any successor thereto; and</li> <li>II. consistent with or as a part of the plan described in subparagraph (B);</li> </ul> </li> </ul>
Lead Covered Agency Self-Assessment	<b>Made Progress Toward Expectations</b>
Key to Self-Assessment	<p>FGDC agencies continue work to evaluate options for establishing a common understanding and approach to meeting GDA requirements. The FGDC Steering Committee has the <i>Briefing Paper – Reestablishing the FGDC Standards Process 8-4-21</i> under consideration. The paper outlines a path forward for reestablishing a resourced and sustainable standards process that will be compliant with the GDA and responsibilities for managing standards. This work provides a foundation for designating “Made progress toward expectations” for all themes the FY2021 reporting year. Response options included:</p> <ul style="list-style-type: none"> <li>• Fails to Meet Expectations</li> <li>• Made Progress Toward Expectations</li> <li>• Meets Expectations</li> </ul>

**Reference:** [USC 43 Sec 2805\(b\)\(3\)\(A\)](#)

### Meeting Requirements for Geospatial Data Standards

This section of the GDA calls on the FGDC agencies to provide leadership and facilitate the development and implementation of geospatial data standards and outlines activities that include development of a plan to originate and implement needed standards with relevant community and international practices in accordance with OMB Circular A-119 and consistent with, or as part of the plan that will be established to meet subparagraph (B) requirements.

On August 11, 2021, the FGDC Steering Committee was presented for their consideration and approval the *Briefing Paper – Reestablishing the FGDC Standards Process 8-4-21* which outlined the need for reestablishing an FGDC standards process and included a Draft Position Statement (provided below). The paper states that an updated standards process will guide the FGDC agencies in their assessment, development, vetting, and approval of draft standards through the FGDC governance and endorsement steps (for both FGDC developed internal and FGDC endorsed external standards), and follow-on



maintenance and update steps. The standards process should also address FGDC representation and participation in other standards bodies and the administrative support required to manage and maintain the FGDC's standards inventory, web pages, and process documentation.

The briefing paper provided a set of short-term actions that include approval of the position statement and for FGDC to establish a task team to evaluate and recommend a path forward for reestablishing a resourced and sustainable standards process.

*The FGDC Draft Position Statement:*

*The Geospatial Data Act of 2018 (GDA) establishes the Federal Geographic Data Committee (FGDC) as the lead entity in the executive branch of government for the development, implementation, and review of policies, practices, and standards relating to geospatial data. The GDA describes responsibilities related to geospatial standards for the FGDC and the agencies covered by the law (covered agencies). These responsibilities are reinforced by Office of Management and Budget Circular A-16. The covered agencies are responsible for geospatial related standards development, coordination, approval, implementation, and use. The FGDC is determining how to reestablish and resource a sustainable standards process, implement supporting governance requirements, update and improve legacy processes, and begin establishing standards as required under the GDA. Agencies should continue, to the extent possible in lieu of an active standards process, to develop, review, update, and implement existing and pending standards, and become members of the appropriate FGDC standards body when it becomes active.*

A document providing the longer-term tasks and outcomes expected of the team is now under development as requested by the Steering Committee and includes:

- Evaluate FGDC and agency geospatial standards requirements in associated laws and policies
- Review legacy FGDC standards policies and procedures and recommend establishing, updating, or retiring them
- Evaluate and recommend a process for FGDC to establish standards as per the GDA and for evaluation of the NGDA baseline standards inventory, which includes currently endorsed FGDC standards, that will result in the list of standards in use across FGDC
- Evaluate opportunities to leverage work or recommendations from other existing standards bodies
- Evaluate governance requirements for managing standards and recommend necessary changes to the FGDC governance structure.
- Develop recommendations for resourcing a sustainable FGDC standards governance process

### [FY2020 Report Follow up](#)

The FY2020 reports provided information on the FGDC subcommittees and working groups, national and international voluntary consensus standards bodies, the international geospatial organizations supporting standards and other activities that support standards for the data within the theme. This information will be evaluated for inclusion in the redesign of the FGDC theme community sites.

## Highlighting FGDC Agency Efforts to Support NGDA Data Standards

The FGDC agencies with responsibilities for managing NGDA themes and datasets have developed the following questions to highlight on-going agency efforts to support standards for the NGDA portfolio datasets.

### **QA.1. Are there activities ongoing that you would like to highlight regarding development, modification, or establishment of standards for any of the data within the Theme?**

**Clarifying Text:** This question provides agencies and dataset managers an opportunity to highlight significant efforts which are ongoing and may facilitate the work of any standards task team established as described above. Please consider agency work to evaluate or develop standards or work that has been completed and has resulted in standards that are ready to be endorsed, or established, under Section 2806. (Ongoing agency work would include a review or assessment of existing national and international standards, assessment for meeting user needs, and other work that meets the requirements of the GDA.)

- Yes

**Please identify all the NGDA datasets for which you would like to provide information on work to support standards.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of work you would like to highlight that supports standards, including citations and resource links as necessary.**

Landsat Collection 2, released to the public in December 2020, marks the second major reprocessing effort on the Landsat archive by the USGS that results in several data product improvements that harness recent advancements in data processing, algorithm development, and data access and distribution capabilities. The USGS are the first recipients of the Committee on Earth Observation Satellites (CEOS) endorsement for Analysis Ready Data for Land (CARD4L)-compliant products for Landsat Collection 2 Level-2 products. This internationally recognized certification recognizes satellite data that have been processed to a minimum set of requirements and organized into a structure that allows for immediate analysis with minimum user effort and interoperability both through time and with other datasets. Also, through involvement in CEOS Land Surface Imaging Virtual Constellation (LSI-VC), the U.S. Geological Survey (USGS) participated in providing relevant information and reviewing an Open

Geospatial Consortium (OGC) Testbed-16: "Analysis Ready Data (ARD) Engineering Report". The report provides key information which may contribute to a more robust future standard, to assist USGS and other global data providers in making high-quality and predictable interoperable data products, such as Landsat Collection 2 and Landsat U.S. ARD, available to the broadest community possible. The National Agriculture Imagery Program (NDOP) has a set of program specifications as part of the U.S. Department of Agriculture (USDA) imagery Blanket Purchase Agreement. NDOP representatives also participate in OGC technical discussions. The NDOP Steering Committee and its sub-committees evaluate common orthoimagery and elevation needs and provide input into on-going community standardization of data processes and methodologies with a focus on data quality for science applications. The involvement of the Joint Agency Commercial Imagery Evaluation (JACIE) focuses on data quality best practices and standards and works across multiple standards bodies and organizations in the U.S. and Internationally, such as the American Society for Photogrammetry and Remote Sensing (ASPRS), International Society for Photogrammetry and Remote Sensing (ISPRS), Global Space-based Inter-Calibration System (GSICS), CEOS, The International Standards Organization (ISO) Technical Committee (TC)-211 Geographic information/Geomatics, InterNational Committee for Information Technology Standards (INCITS), OGC, Institute of Electrical and Electronics Engineers (IEEE), and others; to bring common methods and standards across Federal datasets.

**QA.2. Please check all the activities that have been taken to establish, develop, or modify standards for data within the theme** (select all that apply and use the "other" textbox to briefly describe additional activities):

- Reviewed ISO metadata collection tools
- Reviewed conformance assessment procedures with assistance from existing standards bodies
- Agency established processes for standards management
- Agency examined comparable international standards for suitability with NGDA data set
- Agency examined comparable FGDC endorsed standards for suitability with NGDA data set
- Agency examined comparable open-source standards for applicability to NGDA data set
- Agency developed comparable agency-specific standards to apply to NGDA data set

**QA.3. Brief Summary (Limit 5,000 characters, or approximately 1.5 pages): Please provide a brief description of FY2021 actions and accomplishments in addressing Section 2805(b)(3)(A).**

**Clarifying Text:** Please ensure that the Brief Summary comments you submit this year highlight efforts that agencies are engaged in at the dataset or agency level that relate to GDA requirements, including involvement in and accomplishments of groups in support of NGDA data, such as:

- ✓ FGDC subcommittees and working groups
- ✓ Agency working groups and partner efforts
- ✓ National and international voluntary consensus standards bodies
- ✓ International geospatial organizations supporting standards
- ✓ Other activities that support standards

There are a wide range of national and international working groups, organizations, and other bodies that agencies participate in related to imagery standards and specifications, coordination, data management, and data stewardship activities to include improved discoverability and access, data quality, data interoperability, and coordination of civil airborne and space-based Earth observation

programs. A list of such organizations and participating agencies include:

FGDC NDOP Committee (USDA, Department of the Interior (DOI), Department of Commerce (DOC), Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), National Geospatial-Intelligence Agency (NGA), and other organizations)

ISO/TC 211 (USGS, National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), Census Bureau, NGA, Department of Homeland Security (DHS))

CEOS (USGS, NASA, NOAA)

ISC World Data Systems (NASA, USGS)

OGC (USGS, NASA, NOAA, and other organizations)

Land Processes Distributed Active Archive Center User Working Group (LP-DAAC) - (NASA, USGS)

NASA Earth Science Data and Information System, ESDIS Standards Office (ESO)

ASPRS - (USGS, NOAA, NASA, NGA, DOI, Department of Transportation (DOT), DOC, DoD, EPA, other organizations)

Group on Earth Observations (GEO) - (NASA, USGS, NOAA, approximately 100 national governments)

ISPRS (Numerous U.S. and international organizations)

The Open Source Geospatial Foundation (OSGeo) (NASA, NOAA, NGA)

IEEE Geoscience and Remote Sensing Society (USGS, NASA, NOAA, other organizations)

World Meteorological Organization (WMO) - (193 Member States and Territories)

Earth Science Information Partners (ESIP) - (NASA, NOAA, USGS)

## B. Nationwide Population of the Data Theme

GDA Requirement	<p>USC 43 Sec 2805(b)(3)(B) – provide leadership and facilitate the development and implementation of a plan for nationwide population of the National Geospatial Data Asset data theme, which shall—</p> <p>(i) include developing partnership programs with States, Indian tribes, institutions of higher education, private sector entities, other Federal agencies, and local governments;</p> <p>(ii) meet the needs of users of geospatial data;</p> <p>(iii) address human and financial resource needs;</p> <p>(iv) identify needs relating to standards, metadata for geospatial data within the National Geospatial Data Asset data theme, and the GeoPlatform; and</p> <p>(v) expedite the development of necessary National Geospatial Data Asset data themes;</p>
Lead Covered Agency Self-Assessment	<b>Meets Expectations</b>
Key to Self-Assessment	<p>FGDC agencies continue work to evaluate options for establishing a common understanding and approach to meeting GDA requirements. A briefing paper, described in this section, is being developed for FGDC Steering Committee consideration. It outlines a path forward for engaging partners and stakeholders regarding nationwide population of data and establishing common practices that can be used to advance the NSDI, the goals and objectives of the NSDI Strategic Plan, and meet requirements of the GDA and other legislation. This work provides a foundation for designating “Made progress toward expectations” for all themes the FY2021 reporting year. Response options included:</p> <ul style="list-style-type: none"> <li>• Fails to Meet Expectations</li> <li>• Made Progress Toward Expectations</li> <li>• Meets Expectations</li> </ul>

**Reference:** [USC 43 Sec 2805\(b\)\(3\)\(B\)](#)

### Meeting Requirements for Nationwide Population of NGDA Datasets

This section of the GDA calls on the FGDC agencies to, “provide leadership and facilitate the development and implementation of a plan for nationwide population of the National Geospatial Data Asset data theme.” Using the GDA definition of NGDA data theme, the required plans would focus on nationwide population of the core datasets within the theme and include the work to expedite development of necessary core datasets.

FGDC agencies manage NGDA core datasets and other geospatial data to meet mission requirements and to address priority needs of the agency and the nation. There are multiple examples of ongoing agency efforts to establish partnerships, conduct requirements and user needs analysis, identify options

for appropriate human and financial resourcing, and identify needs relating to standards for NGDA datasets in support of nationwide population of priority geospatial datasets.

To support development of a common approach for meeting GDA and other legislative requirements and address the goals and objectives of the [NSDI Strategic Plan 2021-2024](#), a briefing paper has been developed for consideration by the FGDC Steering Committee. The briefing paper proposes that FGDC engage the NGAC to provide advice and recommendations for federal and non-federal partners and stakeholders regarding nationwide population of data and establishing common practices that can be used to advance the NSDI.

The briefing paper documents the need for establishing common approaches and a common understanding of what constitutes “nationwide population of datasets;” a methodology for identifying datasets that should be considered for nationwide population and a means to prioritize those efforts; and a process for identifying data that requires integration with government and nongovernment data or those that only require national coverage of federal data.

As FGDC agencies continue to develop common approaches for meeting requirements for geospatial data management, they will be incorporated into the reporting process. This FY2021 report highlights ongoing efforts that support these requirements. The information gathered here will be available for further evaluation of processes and activities across FGDC agencies that can be used as best practices and established in guidance and governance documents.

#### [FY2020 Report Follow up](#)

The information on theme partners and partnership programs supporting data within the theme reported as part of the FY2020 Reports will be evaluated for inclusion in the redesign of the FGDC theme community sites.

#### [Highlighting Key Examples of FGDC Agency Efforts to Support Plans for Nationwide Population of NGDA Datasets](#)

The following suite of questions was established to highlight ongoing agency efforts to support nationwide population of the NGDA portfolio datasets. FGDC anticipates using this information moving forward as work continues to identify and establish best practices to develop common approaches.

**QB.1. Are there activities ongoing that you would like to highlight that support nationwide population of NGDA datasets within the Theme, or efforts that support any of the elements included in this requirement?**

- Yes

**QB.1a. Are there existing or planned partnership programs with a wide range of stakeholders supporting NGDA datasets within the Theme that you would like to highlight?**

- Yes

**Please identify all the NGDA datasets for which you would like to provide information related to partnership activities.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of partnership with citations and resource links as necessary.**

Various partnerships inform the direction and use of imagery theme datasets used in support of scientific and operational applications in the national interest. These partnerships, consortia, and advisory groups include Federal and non-Federal representation. They also improve understanding of the range of benefits of Imagery and other Earth observation data. For example, the U.S. Group on Earth observations (USGEO) helps coordinate, plan, and assess Federal Earth observation activities in cooperation with Federal agencies and domestic stakeholders, assesses user needs for satellite observations, analyzes Earth observation portfolios, and provides linkages with international partners and organizations. AmericaView, supported by the U.S. Geological Survey, is a nationwide, university-based and state-implemented network that advances Earth observation education through remote sensing science, applied research, workforce development, technology transfer, and community outreach. The ESIP supports the networking and data dissemination needs of members and the global Earth science data community by linking the functional sectors of observation, research, application, education and use of Earth science data and information. The Landsat Advisory Group has provided reports on future Landsat missions and partnership activities.

<https://www.fgdc.gov/ngac/meetings/april-2018/ngac-landsat-future-missions-recommendations-paper.pdf>. A list of some primary organizations and participating agencies include:

ESIP (NOAA, USGS)

National States Geographic Information Council (NSGIC) - (DOI/USGS, USDA/Farm Production and Conservation (FPAC)

USGEO, and USGEO Satellite Needs Working Group (SNWG) is a U.S. interagency group under the Office of Science and Technology Policy (OSTP), chaired by USGS, NASA, NOAA

AmericaView (university-led, state-based consortia) - (USGS)

Landsat Science Team (USGS, NASA)

FGDC National Geospatial Advisory Group (NGAC)/Landsat Advisory Group (LAG) - (FGDC, USGS)

FGDC NDOP Committee

Interagency Remote Sensing Coordination Cell (emergency response imagery) - (FEMA in coordination with multiple Federal agencies)

USDA Remote Sensing Coordination Committee (USDA Agencies)

DOI Remote Sensing Working Group (DOIRSWG) - (DOI Agencies)

Federation of Earth Science Information Partners (NASA)

**QB.1b. Are processes, or plans for processes, in place to meet the needs of users? Note that Section 2805(b)(3)(D) of this report covers efforts to collect and analyze user needs and incorporation of those needs into agency strategies. However, you may include the information on those efforts in your response for this question.**

**Clarifying Text:** If no formal process exists, but information on summits, training events, or other activities that supported the collection or understanding of user needs may be included.

- Yes

**Please identify all the NGDA datasets for which you would like to provide information on efforts to meet user needs.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of efforts to meet user needs, including citations and resource links as necessary.**

Multiple activities are underway across FGDC agencies to collect and analyze user needs information to improve imagery programs, products, and technology. Data is gathered through a combination of user needs interviews, assessments, workshops, and other engagements to understand and meet interdisciplinary science and operational user needs for imagery. For example, a very broad user needs collection and analysis effort is conducted to inform future Landsat missions under the NASA/USGS



Sustainable Land Imagery program. Assessments are also performed to examine the utility of international and commercial capabilities that can augment government satellite data to meet user needs. The FGDC/NDOP Committee coordinates cooperative Federal and State funding for aerial imagery collected by private industry and delivered to the government and includes technical and acquisition working groups. Some other organizations and forums include:

USGS National Land Imaging Program, Civil Agency Requirements Process

USGEO SNWG

Landsat Science Team

Analysis Ready Data (ARD) 21 Workshop

Annual JACIE Workshop

NGAC/LAG

The Land Processes Distributed Active Archive Center (LP DAAC) User Working Group

USDA Remote Sensing Coordination Committee (RSCC)

DOI Remote Sensing Working Group (RSCC)

**QB.1c. Are there existing or planned program and data management plans in place that address human and financial resource needs?**

- Yes

**Please identify all the NGDA datasets for which you would like to provide information on efforts to address human and financial resource needs.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of efforts to meet financial and human resource needs, including citations and resource links as necessary (Limit 5,000 characters, approximately 800 words).**

NGDA datasets are supported by ongoing, long-term agency and interagency programs funded through the annual appropriations process to reflect user needs. For interagency cooperatively funded imagery programs like the National Agricultural Imagery Program (NAIP) dataset, lead and partner agencies and organization funding levels can vary from year to year. Coordination seeks to provide stability which is desirable for reliably meeting imagery goals.

**QB.1d. Are processes, or plans for processes, in place to identify needs related to standards?**

- Yes

**Please identify all the NGDA datasets for which you would like to provide information on needs related to standards.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of efforts to identify needs related to standards, including citations and resource links as necessary.**

The following organizations help to identify future standards elements and activities (listed previously cited in Section QA.3) above.

ISO/TC 211 (USGS, NASA, Census Bureau, NGA, DHS)

CEOS (USGS, NASA, NOAA)

ISC World Data Systems (NASA, USGS)

OGC (USGS, NASA, NOAA, and other organizations)

LP-DAAC (NASA, USGS)

NASA ESO

ASPRS (USGS, NOAA, NASA, NGA, DOI, (DOT), DOC, DoD, EPA, other organizations)

GEO (NASA, USGS, NOAA, approximately 100 national governments)

ISPRS (Numerous U.S. and international organizations)

OSGeo (NASA, NOAA, NGA)

IEEE Geoscience and Remote Sensing Society (USGS, NASA, NOAA, other organizations)

WMO (193 Member States and Territories)

ESIP (NASA, NOAA, USGS)

**QB.1e. Are there any other processes in place that support nationwide population of datasets (e.g., data quality control processes that cover data collected by external stakeholders)?**

- Yes

**Please identify all the NGDA datasets for which you would like to provide additional information related to nationwide population of data.**

- Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Aqua
- Moderate Resolution Imaging Spectroradiometer (MODIS) - Terra
- NOAA Coastal Mapping Remote Sensing Data
- Landsat 7 Enhanced Thematic Mapper Plus Collection 1 Level-1 -
- Landsat 1-5 Multispectral Scanner Collection 1 Level-1 -
- Landsat 4-5 Thematic Mapper Collection 1 Level-1 -
- National Geospatial Data Asset (NGDA) National Agriculture Imagery Program (NAIP) Imagery
- High Resolution Orthoimagery Collection - Historical
- Landsat 8 Operational Land Imager and Thermal Infrared Sensor - National Geospatial Data Asset (NGDA)

**Next, please provide a brief description of other efforts that support nationwide population of data, including citations and resource links as necessary.**

The USDA NAIP Program conducts QA/QC internally within the USDA-FPAC-BC-Geo Branch and the NAIP contractors provide a report on data quality to the Government. Calibration of imagery data sets has been ongoing for many years within these sustained programs. Satellite system calibration is performed for all the satellite missions in the imagery theme. Calibration requires a comparison between the measuring instrument and an “absolute” reference standard of known accuracy. Related data quality efforts are performed to characterize commercial satellite data, by the Joint Agency Commercial Imagery Evaluation (JACIE) involving Federal and non-Federal, and academic collaboration. The outcomes of these efforts inform data collection best practices, characterize data quality and fitness for use, and support data interoperability and data sharing goals.

**QB.2. Brief Summary (Limit 5,000 characters, approximately 800 words): Please provide a brief description of FY2021 actions and accomplishments in addressing Section 2805(b)(3)(B).**

**Clarifying Text:** Summary comments provide an opportunity to further highlight and expand on significant efforts agencies are engaged in at the dataset or agency level that relate to GDA requirements.

FY2021 was a notable year for the imagery theme. On September 27, 2021 the Landsat mission took a significant step toward continuing the long-term record of Earth observation with the launch of Landsat 9 from Vandenberg Space Force Base. Like its predecessor, Landsat 8, Landsat 9 will have a higher imaging capacity than earlier Landsat satellites, allowing for more data to be added to the Landsat global data archive where it can be obtained on a free and open basis for global users. Since the launch of Landsat 1 in 1972, the Landsat mission satellites, a partnership between NASA and the U.S. Geological Survey (USGS), have produced more than 10 million images of Earth's surface. This nearly 50-year record—the longest continuous global record of the Earth's natural and human-induced surface change—is unmatched in quality, detail, and coverage, and provides a unique and valuable resource for people in a variety of professions, including agriculture, cryosphere, water resources, natural resource management, regional planning, and ecological and global-change research.

Imagery theme-related user engagement by the SNWG, led to the Harmonized Landsat Sentinel-2 (HLS) project that takes input data from the joint NASA/USGS Landsat 8 and the ESA (European Space Agency) Sentinel-2A and Sentinel-2B satellites to generate a harmonized, analysis-ready surface reflectance data product with observations every two to three days. The HLS project is a major outcome of the SNWG satellite needs assessment in 2016 with work continuing through 2021 and beyond. In that assessment, federal agencies and end users identified a need for more frequent Landsat-like observations to track short-term changes in vegetation and other land components to support agricultural monitoring and land cover classification at moderate to high resolution in both the visible and thermal components of the electromagnetic spectrum. Spectral similarities between the Landsat 8 Optical Land Imager (OLI) and the Sentinel-2 Multi-Spectral Imager (MSI) present an opportunity to harmonize data from both sensors to generate higher-frequency imagery products for land surface monitoring and applications. (<https://earthdata.nasa.gov/esds/harmonized-landsat-sentinel-2>).

## C. Establish Goals That Support the NSDI Strategic Plan

GDA Requirement	USC 43 Sec 2805(b)(3)(C) – establish goals that support the strategic plan for the National Spatial Data Infrastructure prepared under section 2804(c);
Lead Covered Agency Self-Assessment	<b>Made Progress Toward Expectations</b>
Key to Self-Assessment	<p>FGDC agencies continue work to evaluate options for establishing a common understanding and approach to meeting GDA requirements and the goals and objectives of the NSDI Strategic Plan. The briefing paper being developed for consideration by the FGDC Steering Committee, and described in Section B, outlines a path forward to establish common practices that can be used to advance the NSDI, and meet requirements of the GDA and other legislation. This work provides a foundation for designating “Made progress toward expectations” for all themes for the FY2021 reporting year. Response options included:</p> <ul style="list-style-type: none"> <li>• Fails to Meet Expectations</li> <li>• Made Progress Toward Expectations</li> <li>• Meets Expectations</li> </ul>

**References:** [USC 43 Sec 2805\(b\)\(3\)\(C\)](#) and [NSDI Strategic Plan 2021-2024](#)

### Establishing Common Goals and Priorities Supporting the NSDI and Its Strategic Plan

The FGDC and the geospatial community have partnered for decades in building the National Spatial Data Infrastructure. Much has been accomplished and exploitation of the internet, combined with advances in technology and availability of mobile devices, have increased public awareness that everything happens somewhere. Having Geospatial data and information available at people’s fingertips has become an expectation for most users. The vision of the NSDI Strategic Plan 2021-2024 of a “geo-enabled Nation and world for place-based decision making” provides a platform for partnerships that help ensure required data is the best possible data. FGDC has adopted as its mission to enable a “national network of geospatial resources that seamlessly integrate location-based information to serve the needs of the Nation and wider global interests.”

FGDC agencies are focused on meeting mission requirements for national geospatial data assets they manage while working collaboratively with partners to implement the NSDI strategic plan and meet its goals and objectives. For the NGDA portfolio, these objectives include efforts to: 1) streamline portfolio management practices and establish standards for NGDA themes and associated datasets, 2) develop common approaches to implement data acquisition and lifecycle management strategies, 3) advance the practice of integrating government and nongovernment data into national datasets, as necessary and 4) ensure that geospatial and other meaningful data can be easily integrated and used.

As described previously in this report, the FGDC intends to continue work across agencies and with the NGAC to understand the priorities of government and nongovernment stakeholders and gather their advice and recommendations for further prioritizing collaborative efforts. Establishing the team of federal and non-federal stakeholders and representatives of the NGDA data theme community will allow

for establishing common understanding of opportunities and constraints and will allow agencies to identify “goals that support the strategic plan for the National Spatial Data Infrastructure.” This work would build on the upcoming release of the OMB Circular A-16, the GDA, and other legal and policy requirements in order to establish practical guidance about how agencies can achieve what is being described in the generic, high level, language used in the NSDI Strategic Plan.

## Highlighting FGDC Agency Strategies that Support the NSDI and Geospatial Data

### **QC.1. Do geospatial strategic plan(s) exist for the agencies that manage and support the NGDA datasets within the Theme?**

- Yes

#### **If yes, please provide a short description and examples of where these strategies are documented.**

The imagery theme is working with the geospatial portfolio community that is supporting the goals of the NSDI. In addition to the standards activities reference in previous sections, the Imagery Theme supports USGEO working group activities related to developing common practices and licensing for commercial geospatial data procurement, interoperability efforts within voluntary standards bodies within the U.S. Federal and internationally (as indicated in QA.3 above), and developing products that integrate the data of U.S. and International Space Agencies such as Landsat / Sentinel data harmonization that increase the effective revisit of global land survey missions (<https://hls.gsfc.nasa.gov/>). Both the USDA and the DOI have developed Geospatial Services Strategic Plans. The DOI 2021 – 2024 plan is available at <https://www.doi.gov/data>, and the USDA plan is at <https://www.usda.gov/ocio/enterprise-geospatial-strategic-plan>

### **QC.2. Have goals or actions been identified that support the goals and objectives of the National Spatial Data Infrastructure (NSDI) Strategic Plan for the NGDA datasets within the Theme?**

**Clarifying text:** Identified actions can be part of the geospatial strategies for the agencies that manage data within the theme, and/or other documents that specifically relate to the data within the theme.

- Yes

#### **If yes, please provide a short description and examples of where these goals or actions are documented.**

Goals and actions are documented in Departmental geospatial strategies that address NSDI goals including the imagery theme and other geospatial data.

### **QC.3. Brief Summary (Limit 5,000 characters, approximately 800 words): Please provide a brief description of FY2021 actions and accomplishments in addressing Section 2805(b)(3)(C).**

**Clarifying Text:** Summary comments provide an opportunity to highlight significant efforts agencies are engaged in at the dataset or agency level that relate to GDA requirements.

A key accomplishment highlight for FY 2021, which greatly facilitates the utility, consistency and interoperability of Landsat data is Landsat Collection 2, released to the public in December 2020. Landsat collection 2 marks the second major reprocessing effort on the Landsat archive by the USGS,

that results in several data product improvements that harness recent advancements in data processing, algorithm development, and data access and distribution capabilities. A primary characteristic of Collection 2 is the substantial improvement in the absolute geolocation accuracy of the global ground reference dataset - which improves interoperability of the Landsat archive for all missions through time. Collection 2 also includes updated global digital elevation modeling sources and calibration and validation updates. In addition, the USGS are the first recipients of the CEOS endorsement for CARD4L-compliant products for Landsat Collection 2 Level-2 products. This internationally recognized certification recognizes satellite data that have been processed to a minimum set of requirements and organized into a structure that allows for immediate analysis with minimum user effort and interoperability both through time and with other datasets. In addition, the imagery theme continues to inform future satellite systems, such as Landsat Next, with active engagement on a scale never before realized during the history of the Landsat program.

## D. Addressing User Needs

GDA Requirement	USC 43 Sec 2805(b)(3)(D) – as necessary, collect and analyze information from users of geospatial data within the National Geospatial Data Asset data theme regarding the needs of the users for geospatial data and incorporate the needs of users in strategies relating to the National Geospatial Data Asset data theme;
Lead Covered Agency Self-Assessment	<b>Meets Expectations</b>
Key to Self-Assessment	<p>FGDC agencies continue work to evaluate options for establishing a common understanding and approach to meeting GDA requirements. The briefing paper being developed for consideration by the FGDC Steering Committee, and described in Section B, outlines a path forward to engage partners and stakeholders and work towards establishing common practices that can be used to address the needs of users, advance the NSDI, and meet requirements of the GDA and other legislation. This work provides a foundation for designating “Made progress toward expectations” for all themes the FY2021 reporting year. Response options included:</p> <ul style="list-style-type: none"> <li>• Fails to Meet Expectations</li> <li>• Made Progress Toward Expectations</li> <li>• Meets Expectations</li> </ul>

**Reference:** [USC 43 Sec 2805\(b\)\(3\)\(D\)](#)

### Highlighting FGDC and FGDC Agency Efforts to Meet User Needs

This section of the GDA calls on the FGDC agencies to understand the needs of users through collection and analysis of user needs information from the users of NGDA datasets and to incorporate those needs into strategies relating to the NGDA datasets and themes. In addition to agencies efforts to collect and analyze user needs there are many use cases and needs assessments being developed by stakeholders and users of geospatial data, some of which were highlighted and are available in the FY2020 GDA reports.

The desired outcome of efforts to develop the NSDI and advance nationwide population of geospatial data is to meet the needs of geospatial data users and the nation. The result will be for users and stakeholders to be empowered to accomplish tasks that are important to them, to increase the likelihood they will benefit from the decisions that are made, and to provide them access to use geospatial data that improves their day-to-day lives.

As previously highlighted in this report, the efforts to develop a common understanding of the objectives and goals in the NSDI Strategic Plan 2021-2024 will be key to incorporating relevant strategies and approaches to meeting the needs of users for NGDA data.



## FY2020 Report Follow up

The FY2020 reports gathered on theme use cases, user needs User Needs Assessments, Workshops, and Summits that support the data within the theme. Additionally, a suite of use cases developed by partners and stakeholders was provided in Appendix A: NGDA Use Cases including those from the Federal Data Strategy, NGAC, HIFLD, the FGDC GDA Communications Working Group, the Joint HIFLD/GeoPlatform Feedback Sessions, and other types of user feedback and use cases. This information will be evaluated for inclusion in the redesign of the FGDC theme community sites.

## Highlighting FGDC and FGDC Agency Efforts to Meet User Needs

The FGDC agencies with responsibilities for managing NGDA themes and datasets have developed the following questions to highlight on-going agency efforts to support understanding user needs and incorporating those needs into strategies relating to the NGDA portfolio datasets.

**QD.1. Do the agencies, sub-agencies, or bureaus that manage NGDA within the Theme have processes to collect and analyze the needs of users and incorporate those needs of users into strategies relating to the NGDA datasets?**

- Yes

**QD.2. Did you provide information in response to QB.1b. on any of the NGDA datasets for which user needs information is collected, analyzed, or incorporated into strategies?**

- Yes

**QD.3. Brief Summary (Limit 5,000 characters, approximately 800 words): Please provide a brief description of FY2021 actions and accomplishments in addressing Section 2805(b)(3)(D).**

**Clarifying Text:** Summary comments provide an opportunity to highlight significant efforts agencies are engaged in at the dataset or agency level that relate to GDA requirements.

In FY2021 multiple activities continued across FGDC agencies to collect and analyze user needs information to improve satellite and aerial imagery programs, products, and technology. A notable example is user requirements work supporting the continuation of the 50-year Landsat program. In FY2021, the Draft Science Requirements for Landsat Next, the Landsat 9 follow-on mission for the NASA/USGS Sustainable Land Imaging program, were further examined and refined by the Landsat Next team and science user community for defining the mission concept. This work follows extensive USGS efforts to collect user needs from a range of applications across the Federal civil community and other stakeholders, and leverages the subject matter experts from the USGS user needs process. The Landsat Next draft science requirements include improvements in spatial resolution, temporal revisit and spectral capability while maintaining science data quality, to continue serving the global land imaging community. The 2020 SNWG process received significantly more user inputs than in previous cycles, (2016, 2018), and in FY 2021 an analysis of these needs influenced NASA to purchase access to Planet satellite data for use by the Federal civil science community. These data augment other data sets in the imagery theme and provide unique capabilities. Other outcomes included a recommendation to develop a global evapotranspiration product led by USGS and NASA.

## Appendix A: Survey Picklists

This appendix provides the full set of choices presented in the self-assessment survey for questions that have multiple response options, including those that are “select all that apply.”

### **Q1. How is the Lead Covered Agency(ies) participating in ensuring the coordinated management of the Theme?** (Select all that apply)

- Agency has published a geospatial strategy as required by the GDA
- No participation in ensuring coordinated management of the Theme
- Theme Executive Champion(s) attend NGDA Theme Community Meetings
- Theme Lead(s) attend NGDA Theme Community Meetings
- Theme Lead(s) participate in GDA Working Group meetings
- Theme Leads(s) review the outcomes from GDA Working Group meetings and provide feedback on approaches for GDA compliance
- Theme Lead(s) coordinate GDA compliance activities with Theme personnel
- Theme Lead(s) communicate new and ongoing Portfolio Management activities and priorities with Dataset Managers in the Theme
- Steering Committee members coordinate with the Theme
- Other [Textbox provided]

### **QA.2. Please check all the activities that have been taken to establish, develop, or modify standards for data within the Theme** (select all that apply):

- Agency reviewed ISO metadata collection tools
- Agency reviewed conformance assessment procedures with assistance from existing standards bodies
- Agency maintains active licenses for all standards (where applicable)
- Agency generates Requests for Information (RFI) to develop new standards and tools
- Agency established processes for standards management
- Agency examined comparable international standards for suitability with NGDA dataset
- Agency examined comparable national standards for suitability with NGDA dataset
- Agency examined comparable FGDC endorsed standards for suitability with NGDA dataset
- Agency examined comparable open-source standards for applicability to NGDA dataset
- Agency developed comparable agency-specific standards to apply to NGDA dataset
- Agency analyzed related international, national, FGDC, open-source, or agency-specific standards to identify components to modify or adapt into specific NGDA dataset standard
- Agency analyzed related international, national, FGDC, open-source, or agency-specific standards to identify components to incorporate into a new specific NGDA dataset standard
- Agency established an appropriate subject-matter expert committee to develop a new standard to meet agency-specific, FGDC, national, international, user, or stakeholder needs for the NGDA dataset
- Appropriate committee created a draft agency-specific, FGDC, national, or international standard for the NGDA dataset
- Agency initiated the agency-specific FGDC, national, or international standard creation process for the NGDA dataset

- An agency-specific, FGDC, national, or international standard creation process in progress for the NGDA dataset
- A draft agency-specific, FGDC, national, or international standard for the NGDA dataset is in public review
- A draft agency-specific, FGDC, national, or international standard for the NGDA dataset is waiting for final approval by the appropriate standards governing body
- Other [Textbox provided]

## Endnotes

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<sup>1</sup> FGDC GDA Information:

<https://fgdc.gov/gda>

<sup>2</sup> NSDI Strategic Plan:

<https://www.fgdc.gov/nsdi-plan>

<sup>3</sup> GeoPlatform Theme Communities:

<https://www.geoplatform.gov/communities>

<sup>4</sup> Stages of the Geospatial Lifecycle:

<https://www.fgdc.gov/policyandplanning/a-16/stages-of-geospatial-data-lifecycle-a16.pdf>

<sup>5</sup> Theme LMA Summary Reports:

[https://communities.geoplatform.gov/ngda-portfolio/national-geospatial-data-asset-ngda-reports/?wdt\\_column\\_filter%5bYear%5d=2015&wdt\\_column\\_filter%5bReport%20Type%5d=Theme%20Summary%20Report](https://communities.geoplatform.gov/ngda-portfolio/national-geospatial-data-asset-ngda-reports/?wdt_column_filter%5bYear%5d=2015&wdt_column_filter%5bReport%20Type%5d=Theme%20Summary%20Report)

<sup>6</sup> NGDA Portfolio Community Site:

<https://communities.geoplatform.gov/ngda-portfolio/>

<sup>7</sup> OMB A-16 Supplemental Guidance Roles and Responsibilities:

<https://fgdc.gov/policyandplanning/a-16/key-roles-and-responsibilities-a16-supplemental.pdf>

<sup>8</sup> NGDA Theme Leads:

<https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-leads/>

<sup>9</sup> NGDA Executive Theme Champions:

<https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-executive-champions/>

<sup>10</sup> NGDA Portfolio Datasets:

<https://communities.geoplatform.gov/ngda-portfolio/ngda-portfolio/>