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FEDERAL GEOGRAPHIC DATA COMMITTEE

2020 Lead Covered Agency NGDA Theme Annual Performance Report *for* Geology Theme

Geospatial Data Act of 2018 Section 756 Requirements

U.S. Department of the Interior

Federal Geographic Data Committee (FGDC)

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Acronyms

Acronym	Definition
FGDC	Federal Geographic Data Committee
GDA	Geospatial Data Act
LCA	Lead Covered Agency
NGAC	National Geospatial Advisory Committee
NGDA	National Geospatial Data Asset(s)
NSDI	National Spatial Data Infrastructure
OMB	Office of Management and Budget
OS	Office of the Secretariat
FGDC Agency Acronyms	**Department and Agency**
DHS	Department of Homeland Security
DHS-FEMA	Department of Homeland Security, Federal Emergency Management Agency
DOC	Department of Commerce
DOC-Census	Department of Commerce, Census Bureau
DOC-NOAA	Department of Commerce, National Oceanic and Atmospheric Administration
DOD	Department of Defense
DOD-A&S	Department of Defense, Acquisition & Sustainment
DOD-USACE	Department of Defense, U.S. Army Corp of Engineers
DOI	Department of the Interior
DOI-BIA	Department of the Interior, Bureau of Indian Affairs
DOI-BLM	Department of the Interior, Bureau of Land Management
DOI-BOEM	Department of the Interior, Bureau of Ocean Energy Management
DOI-BSEE	Department of the Interior, Bureau of Safety and Environmental Enforcement
DOI-FWS	Department of the Interior, U.S. Fish and Wildlife Service
DOI-NPS	Department of the Interior, National Park Service
DOI-USGS	Department of the Interior, U.S. Geological Survey
DOS	Department of State
DOS-IBC	Department of State, International Boundary Commission
DOS-IBWC	Department of State, International Boundary and Water Commission
DOT	Department of Transportation
DOT-BTS	Department of Transportation, Bureau of Transportation Statistics
DOT-FAA	Department of Transportation, Federal Aviation Administration
GSA	General Services Administration
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
USDA	U.S. Department of Agriculture
USDA-FSA	U.S. Department of Agriculture, Farm Service Agency
USDA-NASS	U.S. Department of Agriculture, National Agricultural Statistics Service
USDA-NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
USDA-USFS	U.S. Department of Agriculture, U.S. Forest Service
USEPA	Environmental Protection Agency

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2020 Geospatial Data Act Lead Covered Agency Annual Performance Report for Geology Theme

Introduction to Geospatial Data Act Annual Reporting

As part of administering a National Geospatial Data Asset (NGDA) data theme, Section 756(b)(3)(E)(I) of the Geospatial Data Act of 2018[1] (GDA) requires a performance report to be submitted to the Federal Geographic Data Committee (FGDC). These reports document "the activities relating to and implementation of the National Geospatial Data Asset data theme, including progress in achieving the requirements under subparagraphs (A), (B), (C), and (D)" of Section 756(b)(3).

This initial self-assessment serves as the baseline report to the FGDC covering the period of October 5, 2018, with the signing of the GDA, through Fiscal Year (FY) 2020, September 30, 2020. Subsequent reports will be developed annually and will span one fiscal year period. Lead covered agencies will ensure that one consolidated report is submitted to FGDC per NGDA data theme. 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 was developed to facilitate consistent self-assessments and consolidated reports. 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 responses will also become part of the biennial FGDC GDA report to Congress and will be available online.

It should be noted that the revised Circular A-16 is currently in development for release by the Office of Management and Budget (OMB) for use by the FGDC Community. The A-16 will provide direction for the FGDC on management of the GDA requirements. This reporting template may be revised for subsequent annual reports in response to revised policies or supplemental technical guidance.

Executive Summary

This baseline annual performance report marks the transition from managing the goals and objectives of the NGDA Theme Strategic Plans as required in OMB Circular A-16 Supplemental Guidance,[2] to establishing plans to meet the requirements of the GDA. This baseline report for the Geology Theme provides insights into ongoing theme strategic activities and cross-cutting FGDC portfolio management activities that align with the requirements of the GDA. In addition to activities supporting Theme Strategic Plan goals and objectives, this report covers key leadership in the areas of: managing geospatial data standards for NGDA Datasets and NGDA Themes; data population of NGDA Themes; support for strategic planning; support for user needs; and designated points of contacts responsible for implementing the NGDA Data Theme. This report has been developed using an NGDA Theme Lead consensus-driven report template that provides consistent reporting across all NGDA Themes.

Theme Designated Points of Contact

Section 756(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 data 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 (OS) 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.[3] This information is kept up-to-date in the NGDA Portfolio Community Resources Site[4] maintained for FGDC by the FGDC OS.

Geology Theme Contacts	
Theme Lead (Co-Leads)[5]:	Dave Soller (Co-Lead), DOI-USGS Paul Godfriaux (Co-Lead), DOI-BOEM
Executive Theme Champion(s):	David Carter, DOI

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

NGDA Datasets in the FGDC Portfolio

The NGDA Datasets and the agencies listed in Table 2 are provided as the baseline of NGDA that currently populate the Geology 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[6] is maintained on the GeoPlatform and is provided here filtered by the Geology Theme.

Geology Theme NGDA Datasets	Agency
Federal Outer Continental Shelf (OCS) Sand and Gravel Borrow Areas (Lease Areas)	DOI-BOEM
USGS National Geologic Map Database Collection	DOI-USGS
Outer Continental Shelf Oil and Natural Gas Wells - Alaska Region NAD 83	DOI-BOEM
Outer Continental Shelf Oil and Natural Gas Wells - Gulf of Mexico Region NAD 27	DOI-BSEE
Outer Continental Shelf Oil and Natural Gas Wells - Pacific OCS Region NAD 83	DOI-BOEM
BOEM Seismic Water Bottom Anomalies - Gulf of Mexico - Gulf of Mexico NAD27	DOI-BOEM

Table 2. Theme NGDA Datasets.

FGDC Office of the Secretariat Portfolio Management Support

Portfolio Management of NGDA Themes and Datasets is coordinated through FGDC OS and is designed to consistently align NGDA Themes with the requirements of the GDA, OMB Circular A-16, and A-16 Supplemental Guidance across all NGDA Themes (as previously stated, the revised Circular A-16 has not yet been released). Transparent portfolio content is provided through NGDA Communities and NGDA Data Theme Resource Pages within the GeoPlatform (geoplatform.gov). The FGDC OS facilitates a

common management approach to improve efficiency and reduce duplication of effort associated with development of methods for meeting requirements.

The following content is maintained for all NGDA Themes and the official portfolio of NGDA Datasets.

Suite of NGDA Portfolio Documentation[7]
• Overview and NGDA Resources • NGDA Theme Community Sites • NGDA Theme Resource Pages • NGDA Meetings
NGDA Portfolio Official Lists • NGDA Dataset Portfolio • NGDA Theme Leads • NGDA Executive Champions
NGDA Assessments • NGDA Lifecycle Maturity Assessments • NGDA Baseline Standards Inventory
NGDA Reports • Theme Strategic Plans • Theme Implementation Plans • Lifecycle Maturity Assessment – Theme Summary & Dataset Reports
FGDC Technical Guidance • Geospatial Metadata Resources (GeoPlatform, Data.gov, and NGDA Guidelines)

Table 3. NGDA Portfolio Management Suite.

A. Geospatial Data Standards

GDA Requirement	Section 756(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— i. assessing existing standards; ii. identifying anticipated or needed data standards; and iii. developing a plan to originate and implement needed standards with relevant community and international practices— I. in accordance with Office of Management and Budget Circular A– 119, or any successor thereto; and II. consistent with or as a part of the plan described in subparagraph (B);	
Lead Covered Agency Self-Assessment	Check One:	☐ Meets expectations ☒ Made progress toward expectations ☐ Fails to meet expectations
Self-Assessment Summary Comments	BOEM reached out to the Geology Co-Theme Lead to coordinate on this report and to reestablish communications for future efforts. BOEM is working to correct Metadata issues identified during the 2020 Metadata Review. BOEM is working internally to discuss the appropriate theme location of many of its data layers; that is, potential consolidation of layers and consideration of a more appropriate distribution of NGDA datasets into other NGDA themes. BOEM was not able to apply theme standard - FGDC Digital Cartographic Standard for Geologic Map due to the differences in context of the data standard / nature of dataset type Federal Outer Continental Shelf (OCS) Sand and Gravel Borrow Areas (Lease Areas). BOEM was able to apply content standard for digital geospatial metadata FGDC metadata standards. Through the National Geologic Map Database (NGMDB) project, the USGS and State Geological Surveys reached consensus on the standard schema for geologic map databases ("GeMS", for Geologic Map Schema). Development of this standard schema required many years of coordination and testing between the Nation's geological surveys. GeMS was published in 2020 (https://pubs.er.usgs.gov/publication/tm11B10). Agency implementations of GeMS are being supported by the NGMDB. These implementations include use of the FGDC Digital Cartographic Standard for Geologic Map Symbolization.	

Table 4. GDA Section 756(b)(3)(A) Requirements and Self-Assessment Criteria.

NGDA Baseline Standards Inventory

FGDC conducted an NGDA Baseline Standards Inventory capturing details about all 173 NGDA Datasets across the 18 NGDA Themes. The inventory was generated using an online survey, which establishes an updateable, repeatable process. This section reflects data that was input between August 31 and February 8, 2021. An FGDC NGDA Summary Dashboard[8] reflecting the inventory results is publicly available and allows users to sort by Theme and Department/Agency.

Accomplishing the baseline inventory represents progress towards meeting the GDA requirements for "assessing existing standards." The details collected on current use will facilitate the assessment of necessary data and metadata standards, schema, and classifications in order to identify needed standards and facilitate nationwide population of the NGDA data theme to meet the needs of users.

An NGDA Baseline Standards Inventory Companion Guide[9] was developed to document the process and establish a comprehensive list of categories, definitions, and identified standards, including existing FGDC Endorsed Standards. The survey allowed NGDA Dataset Managers to provide consistent input from a set of picklists and to also contribute other standards in use or under consideration.

A significant effort, the inventory meets several requirements of the GDA, the Federal Data Strategy 2020 Action Plan[10] for Action 10, and Foundations for Evidence-Based Policymaking Act of 2018.[11] It also furthers the 2018 President's Management Agenda goal of "data, accountability, and transparency to provide the tools to deliver visibly better results to the public and hold agencies accountable..."

Inventory Status

The following table indicates the baseline standards inventory completion status for NGDA Datasets within the Theme.

Geology Theme Baseline Standards Inventory Status	
✓	All NGDA Dataset Managers or their designees within the Theme have completed the NGDA Baseline Standards Inventory.
	Some NGDA Dataset Managers or their designees within the Theme have completed the NGDA Baseline Standards Inventory.
	No NGDA Dataset Managers or their designees within the Theme have completed the NGDA Baseline Standards Inventory.

Table 5. Status of NGDA Baseline Standards Inventory for the Theme.

Initial Inventory Results

The preliminary results of the NGDA Baseline Standards Inventory provided in Figure 1 show a summary of the geospatial data and metadata standards in use by the Geology Theme. Figure 2 shows the categories of standards associated with the datasets in the theme.

An assessment of the existing, anticipated, or needed standards per the GDA has not been undertaken yet within the FGDC NGDA Portfolio. The information collected during the baseline inventory will be analyzed and used in the future to assess these needs and develop "a plan to originate and implement needed standards with relevant community and international practices." Therefore, the statistical information provided in Figures 1 and 2 is not a reflection of standards required to support the data within this theme.

Milestone Summary Statistics: Tracking NGDAs for Implementation of Standards

Theme - Geology		
Standards Reported for 6 of 6 NGDA		
	Metadata Standards	Data Standards
NGDA Using Standards	6	3
Percent Using Standards	100%	50%
NGDA with No Standards	0	3
Percent with No Standards	0%	50%

Figure 1. This graphic provides the counts for metadata and data standards associated with the NGDA theme datasets reported in the NGDA Baseline Standards Inventory as of February 8, 2021.

Milestone Summary Statistics: Tracking NGDAs for Implementation of Standards

Theme - Geology			
Standards Categories for 6 of 6 NGDA			
Metadata	Structure	Attribute	Accuracy
6 (100% of 6 NGDA)	3 (50% of 6 NGDA)	2 (33.3% of 6 NGDA)	2 (33.3% of 6 NGDA)
Quality	Archive	Exchange	Service
2 (33.3% of 6 NGDA)	1 (16.7% of 6 NGDA)	1 (16.7% of 6 NGDA)	2 (33.3% of 6 NGDA)

Figure 2. This graphic provides the counts for categories of standards associated with the NGDA theme datasets as reported in the NGDA Baseline Standards Inventory as of February 8, 2021.

Methods Used by NGDA Agencies to Promote Standards for NGDA Datasets

Activities that directly support active participation or efforts by agencies to "provide leadership and facilitate development and implementation of standards associated with NGDA Datasets within the theme" include participation in subcommittees, working groups, international and national voluntary consensus standards bodies, international geospatial working groups supporting standards, and other federal and non-federal collaboration.

FGDC Subcommittees and Working Groups Associated with the Geology Theme

FGDC Subcommittees and Working Groups[12] were established by FGDC to facilitate standards use for datasets within the Theme. In response to the requirements of the GDA, the FGDC is revisiting the current governance structure pending guidance from the revised OMB Circular A-16. When the revised FGDC structure is established, an efficient and streamlined chartering process will need to be developed. Until that time, FGDC subcommittees and working groups continue to operate under their current charters where they exist.

FGDC Subcommittees and Working Groups Associated with the Geology Theme	Agencies Participating
Geologic Data	Members
Metadata	USGS
Marine and Coastal Spatial Data	NOAA
Federal Geographic Data Committee's 3D Nation Elevation Subcommittee	NOAA
Federal Geodetic Control Subcommittee	NOAA's National Geodetic Survey (NGS) Members
Cadastral	Members

Table 6. Subcommittees and Working Groups Associated with the Theme.

National and International Voluntary Consensus Standards Body Participation

Agencies participate in the development, management and use of standards at both the national and international level. Examples include the International Committee for Information Technology Standards L1 Geographic Information Systems (INCITS L1), Open Geospatial Consortium (OGC), International Standards Organization (ISO), ISO/Technical Committee 211 Geographic information/Geomatics (ISO/TC 211). These groups are comprised of national representatives that devise and update geospatial standards. In turn, these standards are then adopted and implemented by the agencies. Engagement with these standards bodies ensures that agencies have the opportunity to provide input into the standards development and change management processes to facilitate adoption.

National and International Voluntary Consensus Standards Bodies Groups Associated with the Geology Theme	Agencies Participating
The Coastal and Marine Ecological Classification Standard (CMECS) https://iocm.noaa.gov/standards/cmecs-home.html	NOAA
National Ocean Mapping, Exploration, and Characterization (NOMEC) Council	NSTC, NOAA, USGS, BOEM

National and International Voluntary Consensus Standards Bodies Groups Associated with the Geology Theme	Agencies Participating
Standard Ocean Mapping Protocol (SOMP) Working Group https://iocm.noaa.gov/standards/ocean-mapping-protocol.html	NSTC, SOST, NOAA, BOEM, EPA, NASA, FEMA, U.S. Navy, NGA, NPA, NRCS, NSF, ODNI, Smithsonian, USACE, USARC, USCG, USFS, USFWS, USGS, NPS
Association of American State Geologists (AASG)	USGS, BOEM

Table 7. National and International Voluntary Consensus Standards Bodies Associated with the Theme.

International Geospatial Working Groups Supporting Standards

Agencies also participate in international geospatial working groups supporting standards (e.g. the United Nations Global Geospatial Information Management (UN-GGIM), International Hydrographic Organization (IHO), Group on Earth Observations (GEO), etc.). These groups ensure that the geospatial standards are adopted homogeneously and provide the opportunity for international collaboration to resolve issues. These groups also support implementation of standards.

International Geospatial Organizations Supporting Standards Groups Associated with the Geology Theme	Agencies Participating
Norwegian Royal Ministry of Petroleum and Energy (MOU) – Knowledge Exchange	BOEM, Norway
U.S. Extended Continental Shelf Task Force https://www.state.gov/about-the-u-s-extended-continental-shelf-project/	State Department
North American Commission on Stratigraphic Nomenclature	USGS
IUGS Commission for the Management and Application of Geoscience Information	USGS

Table 8. International Geospatial Organizations Supporting Standards Associated with the Theme.

Other Activities Undertaken by Agencies to Support Standards

In addition to the organizations cited above, the implementation of standards for data within the Geology Theme is supported through collaboration and engagement with agency teams, other federal and non-federal organizations, and/or participation in interagency groups, training programs, or other activities as highlighted below.

Description of Other Activities Undertaken to Support Standards	Agencies Participating
Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM): https://iocm.noaa.gov/about/iwg-ocm.html	NSTC, SOST, NOAA, BOEM, EPA, NASA, FEMA, U.S. Navy, NGA, NPA, NRCS, NSF, ODNI, Smithsonian, USACE, USARC, USCG, USFS, USFWS, USGS

Table 9. Other Activities within the Theme that Support Standards.

B. Nationwide Population of the Data Theme

GDA Requirement	Section 756(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— (i) include developing partnership programs with States, Indian tribes, institutions of higher education, private sector entities, other Federal agencies, and local governments; (ii) meet the needs of users of geospatial data; (iii) address human and financial resource needs; (iv) identify needs relating to standards, metadata for geospatial data within the National Geospatial Data Asset data theme, and the GeoPlatform; and (v) expedite the development of necessary National Geospatial Data Asset data themes;	
Lead Covered Agency Self-Assessment	Check One:	☐ Meets expectations ☒ Made progress toward expectations ☐ Fails to meet expectations
Self-Assessment Summary Comments	BOEM reached out to the Geology Co-Theme Lead to coordinate on this report and to reestablish communications for future efforts. BOEM is working internally to discuss the appropriate theme location of many of its data layers, and potentially consolidation of layers assessed against existing defined standards. The USGS National Geologic Map Database (NGMDB) continues to work with its Congressionally-mandated partners (the State Geological Surveys) to populate the NGMDB (see https://ngmdb.usgs.gov/ for current status of publication records).	

Table 10. GDA Section 756(b)(3)(B) Requirements and Self-Assessment Criteria.

Prior to the establishment of the GDA, the OMB Circular A-16 Supplemental Guidance directed FGDC to establish management practices for the NGDA portfolio and to adopt and implement a coordinated and effective Federal geospatial asset management capability. In response, FGDC agencies developed documented portfolio management processes that included establishment of Theme Strategic Plans, Implementation Plans, and documentation of other efforts, such as the Lifecycle Maturity Assessments conducted on all NGDA Datasets.

This suite of processes and documentation provides a foundation for future development of the plan for "nationwide population of the NGDA data theme." This report section will provide elements from the Strategic Plans and citations to efforts that relate to meeting requirements under subparagraph B.

NGDA Datasets in the FGDC Portfolio

The NGDA Datasets and the managing covered agencies that currently populate the Geology Theme are provided in *Table 2 Theme NGDA Datasets*.

Partnership Programs

This section provides a list of partners and partnership programs that are in place to support datasets in the Geology Theme. Partnerships may provide insights to ensure available data meet the needs of users, identify or assist with justifications to ensure that human and financial resource needs are met, and

provide additional information on standards for geospatial data and metadata, which have been covered in Section B above. Provided here is a list of "groups involved in the geospatial community" found in the GDA, Section 754(b)(C).

- Other Federal agencies
- States
- Local governments
- Regional governments
- Tribal governments
- Private sector entities
- Geospatial information user industries
- Professional associations
- Scholarly associations
- Nonprofit organizations
- Academia
- Licensed geospatial data acquisition professionals
- Other

Geology Theme Partners and Partnership Programs	Managing Covered Agency
BOEM Northern Gulf of Mexico Deepwater Bathymetry Grid from 3D Seismic https://www.boem.gov/oil-gas-energy/mapping-and-data/map-gallery/boem-northern-gulf-mexico-deepwater-bathymetry-grid-3d	BOEM
OCS Facility Infrastructure https://bobson.maps.arcgis.com/apps/opsdashboard/index.html#/400bba386d3d4ec58396dbaa559c422c	BSEE/ BOEM
Association of American State Geologists (AASG) represents the State Geological Surveys in development of the National Geologic Map Database.	USGS
Oil and Gas Mapping Data https://www.boem.gov/oil-gas-energy/mapping-and-data	BOEM/NOAA
U.S. Board on Geographic Names (usgs.gov) E.g., BOEM participates in the Committee on Domestic Names and the Committee on Undersea Features (ACUF)	BOEM, USGS

Table 11. Theme Partners and Partnership Programs.

Lifecycle Maturity Assessments

FGDC agencies developed the *Stages of the Geospatial Data Lifecycle*[13] as supplemental guidance supporting the original OMB Circular A–16. The matrix was established for agency use when developing, managing and reporting on NGDA Datasets.

The NGDA Lifecycle Maturity Assessment (LMA) process is based on those seven stages and was developed to document and support the lifecycle-based geospatial portfolio management of NGDAs. This approach is defined in OMB Circular A-16 Supplemental Guidance, and the stages are consistent with the approach for Federal agency information asset management improvement outlined in OMB Circular A-130.[14]

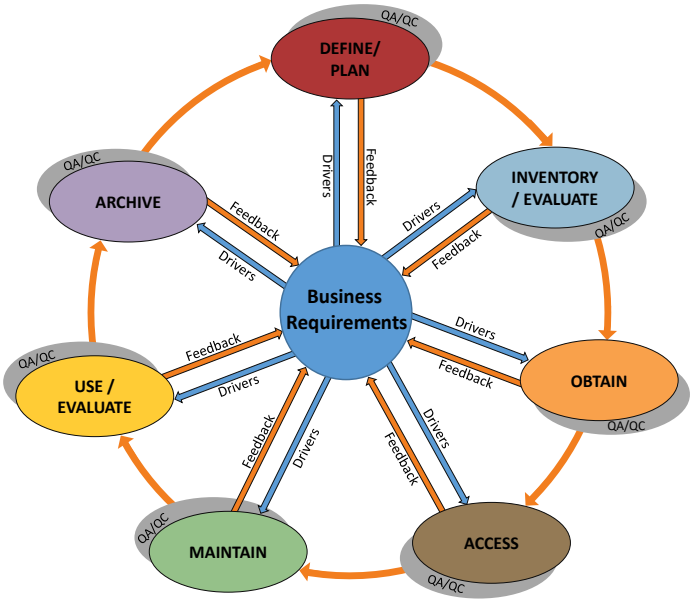

Figure 3. OMB Circular A-16 Supplemental Guidance – lifecycle stages for developing, managing, and reporting on nationally significant datasets to meet business requirements.

The lifecycle matrix establishes a framework of standard terminology and processes for seven Geospatial Data Lifecycle stages (see Figure 3). The stages associated with the data lifecycle are meant to allow stakeholders to assess whether NGDA data production activities meet business requirements and utilize best practices that enable shared or common services. The Geospatial Data Lifecycle is not intended to be rigidly sequential or linear. Quality assurance and (or) quality control (QA/QC) functions for data should be included at every stage of the Geospatial Data Lifecycle. Business requirements drive what needs to occur at each stage. This concept is illustrated in Figure 3 by the purple arrows that point from the business requirements circle to each lifecycle stage. The orange arrows that point to the business requirements circle represent the feedback loop that needs to occur at each stage to reassess the business requirements.

The expected outcomes of adopting this lifecycle management framework include:

- Timely and high-quality geospatial data to support business processes and operations.
- Stronger partnerships across all levels of government and, when appropriate, the private sector, to increase cost efficiency and return on investment; and
- Improved strategies for completing and maintaining nationally significant themes and datasets associated with OMB Circular A–16 to enhance services to citizens.

Lifecycle Maturity Assessments were conducted in 2015 and 2017 and resultant Theme LMA Summary Reports[15] and Dashboards are available online through GeoPlatform.gov. While the LMA process was put on hold for 2019 following the enactment of the GDA, it is seen as a key component moving forward and will be analyzed as part of developing and implementing the plan for nationwide population of the NGDA data themes.

C. Establish Actions That Support the Goals and Objectives in NSDI Strategic Plan

GDA Requirement	Section 756(b)(3)(C) establish goals that support the strategic plan for the National Spatial Data Infrastructure prepared under section 755(c);	
Lead Covered Agency Self-Assessment	Check One:	☐ Meets expectations ☒ Made progress toward expectations ☐ Fails to meet expectations
Self-Assessment Summary Comments	BOEM reached out to the Geology Co-Theme Lead to coordinate on this report and to reestablish communications for future efforts. BOEM is working internally to discuss the appropriate theme location of many of its data layers, and potentially consolidation of layers assessed against existing defined standards. The USGS National Geologic Map Database continues to support NSDI goals, in part through its collaborative efforts with the State Geological Surveys to provide straightforward access to an increasingly comprehensive collection of standardized geologic map information.	

Table 12. GDA Section 756(b)(3)(C) Requirements and Self-Assessment Criteria.

All FGDC NGDA data themes lead covered agencies are making progress toward the requirement to "establish goals that support the strategic plan for the National Spatial Data Infrastructure prepared under section 755(c)." FGDC developed and released a new national strategic plan for the development of the National Spatial Data Infrastructure (NSDI) [GDA Sec. 755(c)], which was approved by the FGDC Steering Committee in November 2020. Covered Agency Geospatial Strategies [GDA Sec. 759(a)(1)], which will support the goals in the NSDI strategic plan, are due to be completed and submitted for agency approval by February 26, 2021, per FGDC guidance. For more information on the NSDI Strategic Plan, please visit https://fgdc.gov/nsdi-plan.

As part of the requirements under Circular A-16 Supplemental Guidance, FGDC NGDA data themes have managed goals and objectives as part of their Strategic Plans. The existing Geology Theme Strategic Plan is located within the NGDA Portfolio Community.

In FY21, lead covered agencies, covered agencies, and NGDA Portfolio Management staff will initialize efforts to develop updated NGDA Theme Plans that will include actions that support the goals and objectives of the NSDI Strategic Plan and are in compliance with the GDA.

D. Addressing User Needs

GDA Requirement	Section 756(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	Check One:	☐ Meets expectations ☒ Made progress toward expectations ☐ Fails to meet expectations
Self-Assessment Summary Comments	BOEM reached out to the Geology Co-Theme Lead to coordinate on this report and to reestablish communications for future efforts. BOEM is working internally to discuss the appropriate theme location of many of its data layers, and potentially consolidation of layers assessed against existing defined standards. The USGS National Geologic Map Database (NGMDB) has, for 26 years, addressed the needs of all citizens who contact the NGMDB via the website and other mechanisms. All user inquiries are addressed in a timely fashion, and user suggestions for improving information delivery are carefully considered.	

Table 13. GDA Section 756(b)(3)(D) Requirements and Self-Assessment Criteria.

Multiple activities are underway across FGDC agencies and other organizations to collect and analyze user needs information. Appendix A includes an array of relevant geospatial data use cases gathered by FGDC for future analysis as part of the "development and implementation of a plan for nationwide population of the National Geospatial Data Asset data theme."

The ultimate goal will be to establish a collection of NGDA use cases, user needs assessments, and other activities that highlight how strategies, goals, and objectives for the NGDA data theme are being supported, and that demonstrate the diversity of users and their needs.

In addition to Appendix A, the table below provides references and links (if available) to theme-specific use cases, user needs assessments, workshops, and summits that document ongoing efforts by agencies to understand and meet user needs in the delivery of geospatial data within this theme.

Geology Theme Use Cases, User Needs Assessments, Workshops and/or Summits	Participating Covered Agencies
Marine Minerals Mapping and Data https://www.boem.gov/marine-minerals/marine-minerals-mapping-and-data https://mmis.doi.gov/boemmmis/	BOEM
Develop and post videos and documentation related to offshore marine cadastral data content and standards. https://marinecadastre.gov/ https://marinecadastre.gov/uses/	BOEM, NOAA
A Study to Address the Issue of Seafloor Stability and the Impact of Sand Dredging Activities on Oil and Gas Infrastructure in the Gulf of Mexico - OCS Study MMS 200 https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/2005/OCS-Study-MMS-2005-043.pdf5-043	BOEM

Geology Theme Use Cases, User Needs Assessments, Workshops and/or Summits	Participating Covered Agencies
Marine Minerals Program Infrastructure-Related Environmental Studies The following studies provide information regarding the potential impacts of dredging operations on existing infrastructure and inform BOEM requirements concerning the identification and protection of existing infrastructure: • OCS Study MMS 2004-019 - Preliminary Infrastructure Stability Study, Offshore Louisiana • OCS Study MMS 2005-043 - Study to Address the Issue of Seafloor Stability and the Impact of Sand Dredging Activities on Oil and Gas Infrastructure in the Gulf of Mexico • OCS Study MMS 2007-048 - Examination of the Physical and Biological Implications of Using Buried Channel Deposits and Other Non-Topographic Offshore Features as Beach Nourishment Material	BOEM
Geological & Geophysical Data Acquisition and Analysis https://www.boem.gov/oil-gas-energy/resource-evaluation/geological-geophysical-data-acquisition-and-analysis	BOEM
The Offshore Deep Stratigraphic Test Well Program - OCS Report MMS 90-0028 https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Oil_and_Gas_Energy_Program/Resource_Evaluation/Geological_and_Geophysical_Data_Acquisition/1991COSTwellProgram90-0028.pdf	BOEM
The National Geologic Map Database assesses user needs continuously, through personal interactions, Web form submissions, and other mechanisms. Interactions with users have greatly enhanced the NGMDB's data presentation and delivery.	USGS
Through the annual Digital Mapping Techniques workshops (https://ngmdb.usgs.gov/Info/dmt/), the NGMDB has assisted the geoscience community, especially in the States, toward more common and efficient methods and approaches for creating, publishing, and disseminating geoscience information.	USGS

Table 14. Theme Use Cases, User Needs Assessments, Workshops, and Summits.

Appendix A: NGDA Use Cases

Contents

Federal Data Strategy Use Cases
NGAC Use Cases
HIFLD Use Cases
GDA Communications Working Group Use Cases
Joint HIFLD/GeoPlatform Feedback Sessions
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Introduction

GDA Section 756(b)(3)(D) calls for "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." As noted in the Lead Covered Agency (LCA) NGDA Theme Annual Performance Report, multiple activities are underway across FGDC, its agencies, and other organizations to collect and analyze user needs information. Use cases summarize both broad and specific user requirements and application of geospatial data in addressing those needs, including the use of NGDA Datasets.

In support of Section 756(b)(3)(D) requirements, existing use cases that may be relevant for NGDA datasets have been gathered and compiled from multiple sources as documented in this Appendix. These existing use cases will be evaluated for use as resources for the themes, and planning to meet GDA requirements for future plan development. Additionally, others not included in this resource list may also be included in the LCA reports.

Federal Data Strategy Use Cases

Resources.data.gov was originally launched in July 2019 as an effort by the Office of Management and Budget, the Office of Government Information Services of the National Archives, and the General Services Administration to provide an online repository of guidance and tools to implement the OPEN Government Data Act and the Federal Data Strategy. Below is a selection of articles, use cases, and proof points describing projects undertaken by data managers and data practitioners across the federal government.

- Agencies Mobilize to Improve Emergency Response in Puerto Rico through Better Data
- Department of Transportation Case Study: Enterprise Data Inventory
- Department of Transportation Model Data Inventory Approach
- FEMA Case Study: Disaster Assistance Program Coordination
- Helping Baltimore Volunteers Find Where to Help
- How USDA Linked Federal and Commercial Data to Shed Light on the Nutritional Value of Retail Food Sales
- Improving Data Access and Data Management: Artificial Intelligence-Generated Metadata Tags at NASA
- Investing in Learning with the Data Stewardship Tactical Working Group at DHS
- Open Energy Data at DOE

- Supercharging Data through Validation as a Service
- The Veterans Legacy Memorial
- U.S. Geological Survey and U.S. Census Bureau collaborate on national roads and boundaries data

NGAC Use Cases

The purpose of the National Geospatial Advisory Committee (NGAC) Use Cases was to develop materials and messages that tell the story of the critical importance of geospatial data, information, and tools to our Nation. These use cases were incorporated into the GDA report to Congress submitted in October 2020.

- North Carolina Flood Mapping Program
- Oregon Foster Care Initiative
- Response Outreach Area Mapper (ROAM) Project
- National Opioid Crisis
- Topeka, Kansas Pavement Management Program

HIFLD Use Cases

The FGDC Homeland Infrastructure Foundation-Level Data (HIFLD) Subcommittee is responsible for developing, promoting, and executing a coordinated strategy for acquisition and/or enhancement of homeland infrastructure geospatial information for HIFLD mission partners. To foster collaboration and understanding of how the HIFLD Open and Secure datasets are being used to support federal/state/local officials and non-governmental partners across the Homeland Defense (HD), Homeland Security (HLS), National Preparedness – Prevention, Protection, Mitigation, Response and Recovery (NP-PPMR&R) mission communities, the following real-world examples – "use cases" – were gathered in 2018 and 2020.

Although not exhaustive, these examples represent HIFLD's significant impact to a wide range of uses and essential missions. Many of these use cases involve NGDA Datasets, in addition to other mission-specific datasets needed by the community. The 2020 document, which also includes the 2018 use cases, can be accessed at the following link:
https://gii.dhs.gov/hifld/sites/default/files/2020-05/FGDC%20HIFLD%20Use%20Cases%202020.pdf

GDA Communications Working Group Use Cases

The FGDC GDA Communications Working Group created a template and a suite of use cases to provide examples of steps agencies can take to mature their geospatial programs to support their mission needs. Some are based on applied efforts and others are thoughtful considerations as discussed by the Communications Working Group. While the use cases are mission focused, they also provide traceability to the GDA and the 13 Covered Agencies responsibilities. These use cases serve as idea generators for GDA compliance. Once these templates are available on a public website, the link will be provided.

Joint HIFLD/GeoPlatform Feedback Sessions

The FGDC HIFLD Subcommittee organizes annual Joint HIFLD/GeoPlatform Feedback Sessions for the communities to collaborate and share uses, mission requirements, and other feedback. Topics often include general focus areas such as data management, metadata, tools, and demonstrations, and 'deep dives' into mission area uses such as transportation, healthcare, or natural disasters. The information

shared and discussed during these presentations and breakout sessions often involve NGDA Datasets. The proceedings from these meetings are posted online for review.

2018 HIFLD/GeoPlatform Feedback Session Presentations:
https://gii.dhs.gov/hifld/content/hifldgeoplatform-feedback-session-presentations

2019 HIFLD/GeoPlatform Feedback Session Presentations:
https://gii.dhs.gov/hifld/content/hifldgeoplatform-feedback-session-presentations-0

Other Types of User Feedback and Use Cases

Protected Areas Database Uses

https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/pad-us-uses?qt-science_support_page_related_con=0#qt-science_support_page_related_con

Workshop Presentations

- Blueprint for 2022 Part 3: Working in the Modernized NSRS (Contains Case Studies)
- Industry Engagement To Modernize the National Spatial Reference System.PPTX
- Mapping User Perspective.PPT
- National Spatial Reference System (NSRS) Modernization Case Studies
- 2018 Industry Workshop Feedback
- Summary Notes for NSRS Mod Industry Workshop – May 7-8 2018

Federal Register Notices

https://www.federalregister.gov/

Endnote References

[1] Geospatial Data Act of 2018:
https://fgdc.gov/gda/

[2] OMB Circular A-16 Supplemental Guidance:
https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2011/m11-03.pdf

[3] OMB A-16 Supplemental Guidance Roles and Responsibilities:
https://fgdc.gov/policyandplanning/a-16/key-roles-and-responsibilities-a16-supplemental.pdf

[4] NGDA Portfolio Community Site:
https://communities.geoplatform.gov/ngda-portfolio/

[5] NGDA Data Theme Leads:
https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-leads/

[6] NGDA Portfolio Datasets:
https://communities.geoplatform.gov/ngda-portfolio/ngda-portfolio/

[7] Suite of NGDA Portfolio Documentation:
Overview:
https://communities.geoplatform.gov/ngda-portfolio/overview/
NGDA Resources:
https://communities.geoplatform.gov/ngda-portfolio/resources/
NGDA Theme Community Sites:
https://www.geoplatform.gov/resources/communities/
NGDA Theme Resource Pages:
https://www.geoplatform.gov/ngda/
NGDA Meetings:
https://communities.geoplatform.gov/ngda-portfolio/meetings/
NGDA Dataset Portfolio:
https://communities.geoplatform.gov/ngda-portfolio/ngda-portfolio/
NGDA Theme Leads:
https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-leads/
NGDA Executive Champions:
https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-executive-champions/
NGDA Lifecycle Maturity Assessments:
https://communities.geoplatform.gov/ngda-portfolio/ngda-lifecycle-maturity-assessment/
NGDA Baseline Standards Inventory:
https://communities.geoplatform.gov/ngda-portfolio/ngda-baseline-standards-inventory/
NGDA Reports:
https://communities.geoplatform.gov/ngda-portfolio/national-geospatial-data-asset-ngda-reports/
FGDC Technical Guidance - Geospatial Metadata Resources:
https://fgdc.gov/technical-guidance

[8] FGDC NGDA Summary Dashboard
https://geoplatform.maps.arcgis.com/apps/opsdashboard/index.html#/67628c39d9314180bf1032e01b44fd43

[9] NGDA Baseline Standards Inventory Companion Guide:
https://communities.geoplatform.gov/ngda-portfolio/wp-content/uploads/Baseline_Inventory/the_companion_guide_achieving_an_ngda_baseline_standards_inventory.pdf

[10] Federal Data Strategy 2020 Action Plan:
https://strategy.data.gov/action-plan/

[11] Foundations for Evidence-Based Policymaking Act of 2018:
https://www.congress.gov/bill/115th-congress/house-bill/4174

[12] FGDC Subcommittees and Working Groups:
https://www.fgdc.gov/organization/working-groups-subcommittees

[13] Stages of the Geospatial Data Lifecycle:
https://www.fgdc.gov/policyandplanning/a-16/stages-of-geospatial-data-lifecycle-a16.pdf

[14] OMB Circular A-130:
https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/OMB/circulars/a130/a130revised.pdf

[15] 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