



**2021 Lead Covered Agency
NGDA Theme Annual Performance Report
and Self-Assessment**
for
Water – Inland 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](#).¹

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](#).² 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 Water – Inland 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](#)³ 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](#).⁴ As described in the FY2020 LCA NGDA Theme Reports, these assessments were conducted in 2015 and 2017 and resultant [Theme LMA Summary Reports](#)⁵ 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](#)⁶ 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](#).⁷ This information is kept up-to-date in the NGDA Portfolio Community on [NGDA Theme Leads](#)⁸ and [NGDA Executive Theme Champions](#)⁹ pages.

Water - Inland Theme Contacts	
Theme Lead(s):	Rebecca Anderson, U.S. Department of the Interior, U.S. Geological Survey Megan Lang, Department of the Interior, U.S. Fish and Wildlife Service
Executive Theme Champion(s):	David Carter, U.S. Department of the Interior Zach Goldstein, U.S. Department of Commerce, National Oceanic and Atmospheric Administration

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 Water – Inland 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](#)¹⁰ is maintained on the GeoPlatform and is provided here [filtered by the Water – Inland Theme](#). Each NGDA dataset also has a unique value assigned, called an NGDAID, that allows the dataset to be tracked throughout its lifecycle.

NGDAID	Water – Inland Theme NGDA Datasets	Agency
159	National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection	U.S. Department of the Interior, U.S. Geological Survey
160	National Inventory of Dams	U.S. Department of Defense, U.S. Army Corp of Engineers
161	National Levee Database	U.S. Department of Defense, U.S. Army Corp of Engineers
162	National Wetlands Inventory - Wetlands	U.S. Department of the Interior, U.S. Fish and Wildlife Service
163	Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data Collection	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 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 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
- **Other:** Theme Agencies collaborate through the National Hydrography Infrastructure Working Group. Theme Agencies are coordinating on proposed future activities under the Advanced Water Mapping and Analytics interagency initiative

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"> 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 — <ul style="list-style-type: none"> 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	Made Progress Toward Expectations
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"> • Fails to Meet Expectations • Made Progress Toward Expectations • Meets Expectations

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data Collection

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

FGDC Subcommittees and other governance groups that promote standards and are associated with the Water–Inland Theme include the FGDC Wetlands Subcommittee, USFWS Data Governance Board, Alaska Mapping Executive Committee, National Hydrography Infrastructure Working Group, and USGS Hydrography Specifications Review Board. DOI/USGS is a member of the Open Geospatial Consortium and UN-GGIM to promote the development and use of international geospatial standards.

Water-Inland Theme datasets provide training and user information on dataset standards and specifications through multiple groups, websites, and materials, including USGS NHD Partner Support training, USGS National Geospatial Program Hydrography Standards and Specifications Website, USGS Hydrography Communications Call, FWS National Wetlands Inventory website and associated NWI workflow protocol documents, FWS National Wetlands Inventory Field Operations Group, and the Water-Inland Geoportal.gov website.

The FWS employs the FGDC Wetland Mapping and Classification Standards for the National Wetlands Inventory (NWI; FGDC-STD-015-2009 and FGDC-STD-004-2013). NHD specifications are expressed through the FGDC Dataset Standard for the National Hydrography Dataset (NHD; FGDC-STD-014.6-2008), NHD Data Model, NHD User Guide, and "Elevation-Derived Hydrography Acquisition Specifications" and "Elevation-Derived Hydrography—READ Rules," as detailed on the USGS Hydrography Standards and Specifications website (<https://www.usgs.gov/ngp-standards-and->

[specifications/hydrography-standards-and-specifications](#)). WBD specifications are expressed in the WBD Data Model and "Federal Standards and Procedures for the National Watershed Boundary Dataset" document available at www.usgs.gov/NHD. NWI, NHD, and WBD datasets all follow FGDC metadata standards.

NGDA Baseline Standards Inventories were completed in FY 2021 for the NWI, NHD, and WBD. Information from the baseline surveys, as well as other information, will be used to identify further actions that can be taken towards fully meeting GDA expectations.

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
- 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

In FY2021, datasets in the Water-Inland Theme made progress on further adopting and researching the use of open standards. In FY2021, USGS contributed expertise, resources, and coordination to researching and developing the ability to distribute the NHD and WBD in the OGC GeoPackage format, with an expected release in FY 2022. USGS also spent time in FY2021 developing a new OGC-compliant web feature service (WFS) for the NHDPlus High Resolution, a dataset built using the NHD and WBD. As USGS works to develop a plan for the next generation of hydrography data for the Nation with the 3D Hydrography Program, the USGS researched the use of the OGC Hydrologic_Features standard as a basis for a modernized data model in FY2021.

USGS and FWS performed a detailed analysis and review of how to better support user needs by increasing the interoperability of the NHD and NWI as the key datasets that map the inland waters of the Nation. A number of the changes proposed would more closely align the NWI standards and NHD specifications to greatly improve the coincident use of the datasets in environmental and hydrologic mapping, analyses, and modeling.

After consulting with multiple stakeholder groups regarding their dataset needs, FWS formed a work group focused on enhancing interoperability and leveraging of resources with USGS Water-Inland NGDAs. Initial proposed actions are compliant with current FGDC Wetland Mapping and Classification Standards. However, additional feedback will be obtained from USGS and other stakeholders in FY2022-23 to determine if changes need to be made to Wetland Standards in the future.

In FY2022 USGS will begin the process to develop a new data model for the emergent 3D Hydrography Program datasets, starting with an initial assessment of the OGC Hydrologic Features (Hy_Features) data standard. A committee will be convened to develop the data model, with reviews from the user community. This work will culminate in updates to dataset specifications, which will be approved by the appropriate standards governing body.

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	Made Progress Toward Expectations
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"> • Fails to Meet Expectations • Made Progress Toward Expectations • Meets Expectations

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data Collection

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

Members of the Water-Inland Theme have worked extensively to develop partnership programs with States, Tribes, institutions of higher education, private sector entities, other Federal agencies, and local governments to develop and accurately populate nationwide data. Partners are engaged in funding for data acquisition, development, review, and improvement. Below is a list of some of the partnership groups the Water-Inland datasets lead and participate in:

- National Hydrography Infrastructure Working Group and Technical Subgroup
- Advanced Water Mapping and Analytics Initiative Interagency Working Groups
- Alaska Mapping Executive Committee
- Association of State Wetland Managers
- NHD and WBD Stewardship Program (41 states and Washington D.C.)
- NWI Field Operations Group
- FWS Geographic Information System Steering Committee
- 3DHP for the Nation project in cooperation with National States Geographic Information Council (NSGIC)
- Interagency Coastal Wetlands Workgroup
- American Water Resources Association
- The Internet of Water project
- State-level geospatial councils and working groups

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data Collection

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

The NWI, NHD, and WBD focus many efforts on understanding and meeting the requirements and needs of geospatial data users. Past and current efforts to collect and analyze information from users of Water-Inland Theme geospatial data have provided highly valuable insights into user needs and requirements. These efforts include:

- The Hydrography Requirements and Benefits Study (2016)
- 3D Nation Requirements and Benefits Study (ongoing)
- Association of State Wetland Managers State Wetland Mapping Summaries (2018 and 2020)
- Research Study to Understand Use of USGS-NGP Geospatial Data and Products by Private Mapping Companies (2019)
- USGS 3DEP Technology Assessment (AEROSPACE REPORT NO. ATR-2020-02551, 2020)

Activities to support and grow this capacity will continue to inform the activities of the Water-Inland Theme into the future. General communications are also useful for addressing user needs, including:

- Monthly communications calls
- Newsletters
- Dataset user guides
- Trainings
- Factsheets
- Direct technical assistance
- Websites

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data

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).

Water-Inland Theme leads, DOI/USGS and DOI/FWS, participated in the Advanced Water Mapping and Analytics Initiative in FY2021, an interagency endeavor to outline and document resources and planning needed for the future of water mapping, including modernizing the NWI, implementing the next generation NHD and WBD with the 3D Hydrography Program (3DHP), improving the sharing and discovery of water-related data, improving hydrologic modeling for streamflow permanence and connectivity, and accelerating the acquisition of 3D Elevation Program data. The USGS also worked on

the 3D National Topography Model Call for Action Part 1: 3D Hydrography Program plan document in FY2021, which estimates community-wide resources (Federal, state, etc.) of \$685M needed over a nine-year period to implement the 3D Hydrography Program, including improved interoperability between a modernized NWI and 3DHP datasets.

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data

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

Partnerships and general outreach help to identify needs relating to standards and metadata for geospatial data within the Water-Inland theme and the GeoPlatform. The National Hydrography Infrastructure Working Group, USGS Hydrography Specifications Review Board, FWS Data Governance Board, and FGDC Wetlands Subcommittee all play a role in reviewing and advancing standards for Water-Inland datasets. Additionally, USGS is a member of the Open Geospatial Consortium, which allows USGS to participate directly in the crafting of data standards.

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.

- National Hydrography Dataset (NHD) - USGS National Map Downloadable Data Collection
- National Wetlands Inventory - Wetlands
- Watershed Boundary Dataset (WBD) - USGS National Map Downloadable Data Collection

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

Nationwide population of the NHD and WBD is supported by the NHD and WBD Stewardship Program with agreements with 41 states and Washington DC for the maintenance and improvement of the datasets. Quality control is provided through the custom editing tools created and managed by USGS. USGS also provides an online, web-based Markup Application for any citizen to give feedback on the NHD and WBD datasets, with trained USGS editors applying the corrections. Nationwide population and maintenance for NWI is supported by a set of hierarchical Quality Assurance/Quality Control protocols. These include an array of manual and automated quality checks implemented by data producers, the NWI Data Center and the NWI Field Operations Group as dictated by a Data Quality Control Plan.

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.

The Water-Inland Theme datasets made sustained progress toward GDA requirements in FY2021, in particular related to partnerships, user needs, human and financial needs, and data standards. The USGS held monthly Technical Exchange Meetings with NHD and WBD state data stewards, as well as numerous trainings. Additionally, USGS built new partnerships and lines of communication through the NSGIC 3DHP for the Nation project in cooperation with the USGS NHD and WBD data stewards and stakeholders from state geographic information offices. The NWI supported more than ten agreements with States, institutes of higher education, the private sector and other Federal agencies, participated in several State and Federal working groups, and provided wetland mapping trainings and consultations through the NWI Field Operations Group. Jointly, NWI, NHD, and WBD coordinated with partners from nine other Federal bureaus through the National Hydrography Infrastructure Working Group, which met bi-monthly including a joint meeting with the 3D Elevation Program (3DEP) Working Group – a subcommittee of the FGDC 3D Nation subcommittee.

The Water-Inland Theme datasets also made valuable contributions to understanding and addressing user needs in FY2021. The NHD and WBD had significant improvements in the National Hydrography website and NHD Newsletter that increased readability and access of information. USGS also continued monthly communications calls featuring USGS and community speakers to provide outreach, education, and a forum for discussing topics. FWS made improvements to NWI website content and format, improved metadata, produced or maintained 56M acres of NWI data, maintained and enhanced the NWI database and Wetlands Mapper, and consulted with users on data applications. USGS and FWS participated in the Advanced Water Mapping and Analytics Initiative in FY2021, an interagency endeavor to outline and document resources and planning needed for the future of water mapping as noted above. The USGS is also working on the 3D National Topography Model Call for Action Part 1: 3D Hydrography Program plan document, and is coordinating with FWS on improved interoperability between modernized NWI and 3DHP datasets.

Additionally, in FY2021, Water-Inland Theme Lead coordination meetings were held monthly and Dataset Leads attended NGDA Community Meetings and received emails from the NGDA coordinator to stay current on GDA requirements related to specifications, metadata, and the GeoPlatform.

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	Made Progress Toward Expectations
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"> • Fails to Meet Expectations • Made Progress Toward Expectations • Meets Expectations

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 Department of the Interior Geospatial Plan (2021) is available upon request from the DOI Geospatial Information Officer or at <https://www.doi.gov/sites/doi.gov/files/doi-geospatial-strategic-plan-2021-1.pdf>.

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.

The Water-Inland Theme has and will continue to strive to meet the goals of the National Spatial Data Infrastructure Strategic Plan 2021–2024. For USGS, activities supporting NSDI goals are documented in NGP annual programmatic and operational plans. For FWS, activities supporting NSDI goals, including those addressing partnerships, implementation of standards and improvement of data effectiveness, are documented in the NWI FY21 operational plan.

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.

The Water-Inland Theme and NGDA dataset managers are advancing the goals of the NSDI through continual improvements in geospatial data acquisition, management, and accessibility to support U.S. economic growth, policy development, and informed decision making. The NWI, NHD, and WBD are committed to increasing coordination on data acquisition, management, and dissemination where and when possible to avoid duplication and maximize the usefulness of the datasets. The NGDA dataset managers maintain the NGDAs and strive to improve asset management using a number of tools and opportunities, including new developments in open standards and interoperability enhancements.

Agencies participating in the Water-Inland Theme also promote communication and knowledge exchange about the benefits and uses of Water-Inland datasets through governance and working groups, such as the National Hydrography Infrastructure Working Group and Advanced Water Mapping and Analytics Initiative Interagency Working Group.

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	Made Progress Toward Expectations
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"> • Fails to Meet Expectations • Made Progress Toward Expectations • Meets Expectations

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.

Past and current efforts to collect and analyze information from users of Water-Inland Theme geospatial data, such as the Hydrography Requirements and Benefits Study (2016), 3D Nation Requirements and Benefits Study (ongoing), Research Study to Understand Use of USGS-NGP Geospatial Data and Products by Private Mapping Companies (2019), the NWI Field Operations Group outreach products and structures, NWI New Mapping Technologies Group, and Association of State Wetland Managers State Wetland Mapping Summaries have provided highly valuable insights into user needs and requirements. Activities to support and grow this capacity will continue to inform the activities of the Water-Inland Theme into the future.

In FY2021, USGS and FWS continually took in user requirements through general interactions, in trainings, during communication calls, and through email. The USGS provided the general hydrography and mapping community the opportunity to review the 3D National Terrain Model Call for Action Part 1: 3D Hydrography Program document as a means to garner feedback on the current and future direction of hydrography mapping for the Nation. USGS also coordinated with NSGIC on the 3DHP for the Nation project, including hosting a workshop to learn about state and local government critical factors related to 3D mapping of hydrography. The NWI New Mapping Technologies Group held several meetings and

workshops with stakeholders to solicit feedback on current data production protocols and explore new technologies in order to guide NWI's future technical direction.

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

- ¹ FGDC GDA Information:
<https://fgdc.gov/gda>
- ² NSDI Strategic Plan:
<https://www.fgdc.gov/nsdi-plan>
- ³ GeoPlatform Theme Communities:
<https://www.geoplatform.gov/communities>
- ⁴ Stages of the Geospatial Lifecycle:
<https://www.fgdc.gov/policyandplanning/a-16/stages-of-geospatial-data-lifecycle-a16.pdf>
- ⁵ 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
- ⁶ NGDA Portfolio Community Site:
<https://communities.geoplatform.gov/ngda-portfolio/>
- ⁷ OMB A-16 Supplemental Guidance Roles and Responsibilities:
<https://fgdc.gov/policyandplanning/a-16/key-roles-and-responsibilities-a16-supplemental.pdf>
- ⁸ NGDA Theme Leads:
<https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-leads/>
- ⁹ NGDA Executive Theme Champions:
<https://communities.geoplatform.gov/ngda-portfolio/ngda-theme-executive-champions/>
- ¹⁰ NGDA Portfolio Datasets:
<https://communities.geoplatform.gov/ngda-portfolio/ngda-portfolio/>