



270 FW 8

Geographic Information Systems

Supersedes 270 FW 8, FWM 406,
09/30/02
Date: February 2, 2007
Series: Information Technology
Management
Part 270: IT Program Management
Originating Office: Division of
Information Resources and Technology
Management

[PDF Version](#)

8.1 What is the purpose of this chapter? This chapter:

- A. States the objectives of our spatial data management program and how we implement Geographic Information System (GIS) technology.
- B. Describes the roles and responsibilities of Service employees managing and implementing GIS, and
- C. Describes the general authorities under which our GIS program operates.

8.2 What is the Service policy on Geographic Information Systems?

A. GIS technology has a proven track record in assisting resource managers to correlate and analyze large amounts of spatial and tabular data and to use the data to make scientifically sound resource management decisions. Our policy is to encourage managers to:

- (1) Use GIS to benefit their programs.
- (2) Ensure that we use GIS data and technology to enhance resource management and administrative activities through the cost-effective creation, analysis, and exchange of spatial data.
- (3) Avoid duplication of effort by coordinating projects within the Service and with our partners.

B. GIS data collections must:

- (1) Comply with our adopted [data standards](#), and
- (2) Include spatial references whenever possible so that we can include the data in GIS applications developed in the future. A spatial reference may be an organization code, a geographic coordinate such as latitude and longitude or some other means of relating information to a point on the earth. This is a Department of the Interior (DOI) and Service Enterprise Architecture mandate. See [270 FW 1](#).

C. Service offices must:

- (1) Use the online Service [Geospatial Data Inventory](#), the Federal Geographic Data Committee's (FGDC) [National Spatial Data Infrastructure \(NSDI\) Clearinghouse Network](#), and the online [Geospatial One-Stop Portal](#) to check for existing data and to share FWS metadata and data. Using these information resources simplifies spatial data acquisition, takes maximum advantage of data provided by other sources, and promotes sharing and re-use of our data by other entities.
- (2) Create FGDC-compliant metadata for new geospatial data, either acquired or created, for publication and access via the Geospatial One-Stop Portal. Metadata

that offices publish on the NSDI Clearinghouse Network is automatically available through the Geospatial One-Stop Portal and distributed via our Geospatial Data Inventory Web site. Additional guidance is available in the Metadata section on the Service's [GIS home page](#).

8.3 What is the scope of this chapter? This chapter applies to all Service offices using or planning to use GIS technology and spatial data.

8.4 What are the authorities for this chapter?

A. [Executive Order 12906](#), Coordinating Geographic Data Acquisition and Access: the National Spatial Data Infrastructure.

B. Office of Management and Budget ([OMB Circular A-16](#)), Coordination of Geographic Information and Related Spatial Data Activities.

C. [OMB Circular A-130](#), Management of Federal Information Resources.

8.5 Who is responsible for implementing the policy in this chapter?

A. Assistant Directors and Regional Directors are responsible for:

(1) Ensuring that their staff members implement the policy in this chapter.

(2) Designating a representative to the GIS Steering Committee who is responsible for coordinating the Regional or Program spatial data management activities and serving as the liaison with the National GIS Coordinator. This applies only to those programs actively using GIS.

(3) Establishing Regional and Program priorities for spatial data management and the implementation of GIS technology.

B. The Chief Information Officer (CIO) is the Assistant Director-Information Resources and Technology Management (IRTM). The **CIO** is responsible for:

(1) Serving as the Chairperson for the GIS Oversight Committee at the Directorate level.

(2) Appointing a chairperson for the GIS Steering Committee.

(3) Overseeing development, implementation, evaluation, and modification of policies and procedures for managing spatial data and GIS technology.

C. The Chief Technology Officer (CTO) Council reviews and approves:

(1) All GIS Steering Committee decisions that require technical standards or guidelines.

(2) All Information Technology (IT) Bulletins relating to GIS technical standards or guidelines in accordance with the process described in [270 FW 3](#).

D. The Deputy CIO is the Chief, Division of IRTM. The **Deputy CIO** is responsible for:

(1) Serving as the Chairperson for the CTO Council.

(2) Overseeing the management and development of information resources and GIS

technology on a Servicewide basis.

E. The GIS Oversight Committee guides the overall efforts of the GIS Steering Committee.

F. The IT Investment Review Board (IRB) is responsible for:

- (1) Overseeing our Capital Planning and Investment Control (CPIC) process.
- (2) Selecting, controlling, and evaluating all IT investments in our portfolio.

G. The National Data Administrator is responsible for:

- (1) Managing the process for adoption of Servicewide data standards,
- (2) Maintaining the repository of such standards, and
- (3) Coordinating data administration activities with data stewards.

H. The National GIS Coordinator is responsible for:

- (1) Developing and maintaining our national GIS program.
- (2) Communicating and supporting Service and DOI policies for IT and GIS.
- (3) Coordinating with GIS representatives from other Government agencies on GIS and geospatial activities that cross agency boundaries, such as the DOI Enterprise Geographic Information Management (EGIM) Team.
- (4) Maintaining tools such as our GIS Internet pages or GIS listserv that enable GIS staff to communicate with each other, our partners, and the general public about GIS technology and data.
- (5) Investigating and implementing new tools and technologies, such as the Internet Map Server technology, which make spatial data more accessible to our staff, partners, and the general public.
- (6) Spatial data:
 - (a) Developing and maintaining an inventory of our holdings, based on consistent metadata standards,
 - (b) Determining the best way to share our Geospatial Data Inventory with our staff, partners, and the general public, and
 - (c) Facilitating spatial data access.
- (7) Providing a central point of contact for any questions on GIS in the Service from the general public, Government agencies, or our staff.
- (8) Managing and updating the GIS component of the Service Enterprise Architecture and assisting others to comply with that component.

I. The National GIS Coordinator, Regional and Program GIS Coordinators, and the GIS Steering Committee are responsible for:

- (1) Developing the policy and procedures, strategic and tactical plans, and

organizational capabilities necessary to ensure the successful deployment and implementation of GIS technology.

(2) Communicating and supporting Service and Departmental policies, procedures, and plans pertaining to IT and GIS.

(3) Performing tasks that our CIO, Deputy CIO, and GIS Oversight Committee assign.

(4) Advising our CIO, Deputy CIO, and CTO Council on all major issues pertaining to GIS and spatial data management.

(5) Coordinating our investments in GIS initiatives, particularly spatial data acquisition and collection/digitizing. This coordination task includes acquiring spatial data through commercial sources and partners.

(6) Coordinating GIS and geospatial activities with appointed liaisons from our CTO Council, the IT IRB, the National Conservation Training Center (NCTC), and the Service Web Council.

(7) Increasing communication on GIS issues across the Service.

(8) Facilitating, with appointed data stewards and the National Data Administrator, the formal review, adoption, and implementation of Service and DOI spatial data standards.

(9) Developing, maintaining, and monitoring implementation of a GIS Strategic Plan. The GIS Strategic Plan incorporates goals and objectives in the IRTM Strategic Plan for improving our use and management of geospatial data resources and GIS technology.

(10) Identifying GIS training requirements and opportunities that NCTC should include in the official GIS course curriculum.

(11) Assisting NCTC with the development and organization of our National GIS Workshop. The NCTC offers the workshop as an official NCTC class.

(12) Identifying preferred sources, including Government contracts, for GIS software, hardware, and technical support for commercial, off-the-shelf systems.

(13) Identifying and sharing new opportunities for cost-effective use of GIS technology to support our mission.

J. Users of GIS Technology and Geospatial Data are responsible for:

(1) Complying with all aspects of the GIS component of the Service Enterprise Architecture (see [270 FW 1](#)) or any other GIS architectures adopted by the Department. These include, but are not limited to, security, data standards, data accessibility, and other IT mandates. See 270 FW 6 and [270 FW 7](#).

(2) Creating and publishing FGDC-compliant metadata for all spatial data created and shared with others and making the metadata available and accessible via the Geospatial One-Stop Portal. Additional guidance on metadata is available in the FWS GIS home page metadata section.

(3) Complying with data-related Federal mandates such as the Freedom of Information Act (FOIA), the Privacy Act, and the Information Quality Act.

(4) Complying with Service and Departmental IT policies and directives on the CPIC process (see [270 FW 2](#) and OCIO Directive 2005-002), records management (see [282 FW 4](#)), IT security, and Enterprise Architecture.

8.6 What terms do you need to know to understand this chapter?

A. Data Steward. A Service employee or volunteer who is responsible for managing a particular data standard and having a thorough knowledge of the subject matter of the standard. Service Manual chapter 270 FW 6 defines the responsibilities of stewards.

B. Federal Geographic Data Committee (FGDC). A Federal level committee mandated by [OMB Circular A-16](#) to oversee data standards and to implement the NSDI.

C. Geographic Information System (GIS). A computer system capable of capturing, storing, analyzing, and displaying geographically referenced information, that is, data identified according to location. Practitioners also define a GIS as including the procedures, operating personnel, and spatial data that go into the system ([USGS definition](#)).

D. Geospatial Data Inventory. The Service's implementation of the NSDI, which is available on our [GIS home page](#) on the Internet.

E. Geospatial One-Stop. An OMB E-Gov initiative that builds upon its partnership with the FGDC to improve the ability of the public and Government to use geospatial information to support the business of the Government and facilitate decision-making, data discovery and distribution.

F. Information Technology (IT). Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. Typically, IT includes hardware and software for computers, telecommunications, networks, and radio equipment.

G. Metadata. Information about the content, quality, condition, and other characteristics of data. We use metadata to implement the NSDI and other clearinghouses to document the quality, history, and availability of data. [Executive Order 12906](#), [OMB Circular A-16](#) and the [FGDC Content Standard for Digital Geospatial Metadata, FGDC-STD-001-1998](#) mandate the creation and format of metadata.

H. National Spatial Data Infrastructure (NSDI). A clearinghouse network that [OMB Circular A-16](#) mandates for the discovery and sharing of spatial data on the Internet. The NSDI is designed to:

- (1) Reduce duplication of effort,
- (2) Speed data access, and
- (3) Publish and distribute spatial data collected by Federal agencies to the public.

I. Service Enterprise Architecture. Our set of standards, policies, and procedures to align IT with our mission and goals. The Service Enterprise Architecture guides information system owners and developers so they know the IT infrastructure that we support. See [270 FW 1](#).

J. Service Web Council. The group that sets our Web standards for format, tools, and content.

K. Spatial data. Data that are, or can be, tied to a specific geographic location on the earth. It is synonymous with geospatial data.

For information on the content of this chapter, contact the Division of Information Resources and Technology Management. For information about this Web site, contact [Krista Holloway](#) in the Division of Policy and Directives Management.

[Directives Home](#)

PDM Web sites: [Centralized Library of Servicewide Policies](#) | [FWS Forms](#) | [PDM Services](#)

[Privacy, Disclaimer and Copyright Information](#) | [Information Quality Act](#)

[U.S. Fish and Wildlife Service Home Page](#) | [Department of the Interior](#) | [USA.gov](#) |
[About the U.S. Fish and Wildlife Service](#) | [Accessibility](#) | [Privacy](#) | [Notices](#) | [Disclaimer](#) | [FOIA](#)