

**Engineering and Design  
POLICIES, GUIDANCE AND REQUIREMENTS FOR  
GEOSPATIAL DATA AND SYSTEMS**

**1. Purpose**

*a.* This regulation prescribes the policy for the acquisition and management of nontactical geospatial data throughout the U.S. Army Corps of Engineers (USACE) and prescribes policy to comply with *Executive Order (EO) 12906, Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI)*, and *Office of Management and Budget (OMB) Circular A-16, Coordination of Geographic Information and Related Spatial Data Activities*. This regulation also provides guidance and identifies requirements and standards for the use of Geospatial Technologies in USACE. By complying with this regulation, USACE will maximize its use of Geospatial Technologies; promote interoperability; reduce duplication of nontactical geospatial data collection and software development; support the digital geospatial data life cycle; and strengthen the USACE role in the NSDI.

*b.* In addition to this regulation, EM 1110-1-2909 provides detailed guidance on implementing the Corps Geospatial Strategic Focus, the full integration of geospatial technology into USACE business practices. EM 1110-1-2909 outlines a corporate approach to implementing geospatial technology that meets functional business process requirements in harmony with state, local and Federal agency programs to produce geospatial products and serve customers more efficiently.

**2. Applicability**

*a.* This regulation applies to all USACE Commands having civil works, military construction, and environmental restoration responsibilities. This regulation specifically applies to functional areas having responsibility for regulatory investigations and studies, planning studies, real estate, emergency operations, and other functions involving automated Geospatial Data Standards (GDS) for surveying, mapping, or geospatial database development, such as modeling, and to Geospatial Data and Systems (GD&S) that are used to produce a variety of products including river and harbor maps, charts, and drawings; real estate tract or parcel maps; small- and medium-scale engineering drawings; survey reports; environmental studies; hazardous, toxic, and radioactive waste (HTRW) studies; and channel condition reports. This regulation applies to in-house and contracted efforts.

*b.* Site plans showing building structure footprints or any data set about features on the exterior of a building or structure are geospatial data and are required to adhere to the NSDI principles. These data may use relative, assumed, or geographic coordinates and may be stored in a Computer-aided Design and Drafting (CADD) or Geographic Information System (GIS) environment.

*c.* All Federal Agencies are required to comply with EO 12906. If USACE is performing reimbursable work for a Federal entity, such as the Department of Defense (DoD) installations, Environmental Protection Agency, and the Federal Emergency Management Agency, they will determine their level of compliance. These customers may opt to incorporate compliance with the EO into contracts with USACE or may accomplish compliance unassisted by USACE. The Army Chief of Staff for Installation Management (ACSIM) has outlined the Army's compliance with EO 12906 through AR 210-20 dated 16 October 2001.

*d.* USACE recognizes that the NSDI outlined in EO 12906 is built in cooperation with state and local governments. Everything outlined in this manual that directly supports implementation of EO 12906 and the NSDI should not be seen as conflicting with civil works sponsor geospatial data requirements for specific projects. We strongly encouraged sponsors be educated on the requirements of this regulation.

**3. Distribution.** Approved for public release; distribution is unlimited.

**4. References.** Required and related publications are listed in Appendix A.

**5. Definitions.**

*a.* Geospatial Data – data referenced, either directly or indirectly, to a location on the earth.

*b.* Geospatial Data Systems (GDS) – any automated system that employs geospatial data including GIS, Land Information Systems (LIS), Remote Sensing or Image Processing Systems, CADD systems, Automated Mapping/Facilities Management (AM/FM) systems, and other computer systems that employ or reference data using either absolute, relative, or assumed coordinates such as hydrographic surveying systems.

*c.* Geospatial Data and Systems (GD&S) – Geospatial data and the GDS that create and process the data.

*d.* Geospatial Technologies – A general term used to describe technologies related to CADD, remote sensing, GIS, survey and mapping, photogrammetry, and Global Positioning System (GPS).

*e.* Enterprise GIS (eGIS) – the integrated geospatial technology infrastructure delivering spatial information products, services, and standard data sets to all functional elements and business processes of the organization.

*f.* National Spatial Data Infrastructure (NSDI) – The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data.

*g.* USACE Commands – all subordinate entities of the U.S. Army Corps of Engineers including Districts, Divisions, research laboratories, and field offices.

**6. Exclusions**

*a.* Spatial data and computer systems that do not use coordinates directly or indirectly referenced to a position on the earth are not required to adhere to this regulation. This exempts architectural, mechanical, electrical, structural, and sanitary engineering data and drawings of objects typically inside buildings.

*b.* Data and systems used for engineer design to support internal processes do not need to adhere to regulations outlined in this regulation; however, final as-built data do need to adhere to this guidance.

*c.* This regulation excludes business systems, such as those that focus on textual and statistical information that is created, stored, manipulated, queried, displayed, and transferred differently from geospatial data.

*d.* This regulation excludes tactical spatial data and associated computer systems such as those used for fire control, targeting, and mission planning.

*e.* Users of excluded systems may find this regulation useful in implementing, organizing, or managing their particular type of automated system; in identifying applicable standards; or in creating and maintaining a database. This regulation may enhance interoperability among GD&S and other data systems, and users of all automated systems are encouraged to coordinate, when appropriate, with users, managers, and administrators of other automated systems.

## **7. Policy**

*a.* Situational awareness of the landscape is critical to supporting USACE's civil works mission, the Environmental Operating Principles, and the Army training, testing, and installation management mission. Geospatial information including project maps, imagery, and GIS vector data must be easily available in a standardized format. This information will be used by Districts, Divisions, HQUSACE, and other Federal and State agencies to ensure the best possible decisions are made and potential impacts are identified prior to project execution. The use of geospatial technologies shall be used in reconnaissance, planning, design, and execution phases of projects.

*b.* To ensure that geospatial technologies are implemented in an integrated method and used in a fiscally responsible manner, Districts shall initiate an Enterprise GIS (eGIS) program that is consistent with the Corps Geospatial Enterprise Architecture, Division eGIS activities, and the Virtual Engineering Environment.

## **8. Roles, Actions, and Responsibilities**

*a.* Each Command shall appoint a GD&S Manager whose primary responsibility is data management and ensuring that a Command's geospatial data are accessible throughout the Corps. The GD&S Manager is an active member of the Division eGIS Team, as applicable.

*b.* Each Command shall establish an eGIS Project Delivery Team (PDT). The eGIS PDT works with the Command's Project Review Board or Information Resource Management Steering Committee to ensure that geospatial technologies are implemented in an integrated manner and adequately funded. Representatives from Hydraulics and Hydrology Branch, Corporate Information, Survey, Emergency Management, Real Estate, Regulatory, Planning, Resource Management, and Operations shall all be members of the eGIS PDT.

*c.* Each District Command shall develop and maintain an eGIS Program Management Plan documenting the geospatial architecture, defining how each function within the District uses and populates the eGIS, planning a migration strategy for implementing geospatial standards, and documenting for future development (data and software) of the eGIS. Division Commands shall develop an eGIS Program Management Plan documenting and planning for how geospatial assets residing at the District level can be leveraged to support regional activities.

*d.* Each Command shall track geospatial technology investments in the Information Technology Investment Portfolio System (ITIPS).

*e.* All geospatial data collected, acquired, or developed through contract or in-house by USACE shall be documented using the Federal Geographic Data Committee (FGDC) or International Standards Organization (ISO) metadata content standards. In accordance with EO 12906, all geospatial data produced after 1995 shall be documented at the time of production. The person(s) developing the data shall generate metadata as part of the data development process.

*f.* All nonraster geospatial data collected, acquired, or developed through contract or in-house by USACE shall adhere to the Spatial Data Standards for Facilities Infrastructure and Environment (SDSFIE).

*g.* All CADD data collected, acquired, or developed through contract or in-house by USACE shall adhere to the Architect/Engineer/Construction (AEC) CADD standards.

*h.* For satellite imagery purchases, the Command must coordinate with the Engineering Research and Development Center (ERDC) Topographic Engineering Center (TEC) Imagery Office (TIO). The TIO acts as the acquisition agent in the Army for commercial satellite imagery, and ensures that imagery is purchased only once, thus conserving precious resources for the Army. The TIO will be able to determine if commercial imagery is already available through the National Geospatial-Intelligence Agency's Commercial Satellite Imagery Library (CSIL) for the Command's area and time period of interest. The TIO also ensures that any imagery USACE purchases is available free of charge through the CSIL to other DoD organizations.

*i.* The metadata for USACE-funded geospatial data collections shall be posted to the USACE NSDI Clearinghouse Node, Corpsgeo1 (<http://corpsgeo1.usace.army.mil>), or an NSDI Clearinghouse Node. Data and metadata produced by USACE, including those produced by commercial firms under contract to USACE, shall be made available to the public to the extent permitted by law and current policy. Commands are highly encouraged to make data sets available by posting the data sets to Corpsgeo1 or to their own Web site. Sensitive information such as engineering drawings of locks and dams should not be posted to a public Web site.

*j.* Before USACE funds are expended for geospatial data collection, a search of the NSDI Clearinghouse Node must be executed for existing data that will meet mission requirements. Prior to collection or production of new geospatial data, Commands will access the Clearinghouse to determine whether others have already collected the data or a usable substitute, or if cooperative efforts to obtain the data are possible. USACE Commands shall certify that their Command has accessed the NSDI Clearinghouse, contributed metadata to the NSDI Clearinghouse, determined via the Clearinghouse that needed geospatial data are not available from an existing source, and that possible collection partnerships have been explored. This certification, provided in Appendix B, will be included in the annual Civil Works Budget submittal.

## 9. Funding

OMB will provide no additional funds to implement EO 12906. Agencies are expected to execute the EO within their own budgets. Agencies are expected to modify existing business process or architectures to fulfill the requirements. Standardizing data collection activities and developing metadata shall be included in the budget for Civil Works projects or, if appropriate, military program work. Enterprise GIS activities such as servers, software licenses, software development, and training should all be funded by establishing a revolving fund account. The revolving fund should be resourced by O&M programs and individual projects that benefit from the use of geospatial technologies.

## 10. Proponency

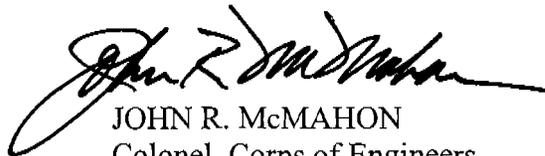
All comments regarding the improvements and/or clarifications should be submitted to the proponent at HQUSACE, ATTN: CECW-CE, 441 G Street, NW, Washington, DC 20314.

FOR THE COMMANDER:

2 Appendices:

App A – References

App B – Certificate of Clearinghouse Use



JOHN R. McMAHON

Colonel, Corps of Engineers

Chief of Staff



## **Appendix A**

### **References**

#### **EO 12906**

Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI)

#### **OMB Circular A-16**

Coordination of Geographic Information and Related Spatial Data Activities

#### **AR 210-20**

Master Planning for Army Installations

#### **EM 1110-1-2909**

Geospatial Data and Systems



## **Appendix B**

### **Certificate of Clearinghouse Use**

Per paragraphs 7.d and 7.g(4) of this regulation, beginning with the FY97 Civil Works budget cycle, commanders will sign a certificate that their Command has served metadata via the Clearinghouse and has accessed the Clearinghouse and ascertained that the needed data is not available before Federal funds are expended to collect or produce new geospatial data. An example is provided on the following page.

Each USACE Command may establish internal procedures to ensure that the search has been conducted properly. For example, the Command may choose to attach hard copies of the Clearinghouse queries and the responses to the certificate when it is submitted to the local commander for signature and incorporate all paperwork into the project files. A Command may also choose to have the GD&S POC or Technical Committee chairperson certify successful completion of the Clearinghouse queries prior to submission to the local commander.

Clearinghouse querying for projects with established accounts should be billed to these accounts. If the querying needs to be done as part of a study before a proposal is made and there is no project to charge to, then charge it to Technical Indirect Overhead.

DATE: \_\_\_\_\_

CERTIFICATE OF COMPLIANCE WITH  
SECTION 3(D) OF EXECUTIVE ORDER 12906  
AND PARAGRAPHS 7.d and 7.g(4) of ER 1110-1-8156

This is to certify that the FY XXXX budget for the \_\_\_\_\_ (District, Division, or laboratory name) Civil Works Program does not include an implicit or explicit request for funds to collect, produce, or acquire geospatial data that is available through the National Geospatial Data Clearinghouse and that all possible data collection partnerships identified through the Clearinghouse have been investigated. The \_\_\_\_\_ (District, Division, or laboratory name) has also contributed metadata to the National Geospatial Data Clearinghouse in accordance with ER 1110-1-8156.

\_\_\_\_\_  
Colonel, Corps of Engineers  
Commanding

FOR ILLUSTRATIVE PURPOSES ONLY  
(TO BE TYPED AS NECESSARY and submitted with the Annual Civil Works Budget submittal)