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## **Cartographic and Geospatial Materials**

This document consolidates and replaces the former Maps, Atlases, and Remote Sensing Images Collections Policy Statement and Digital Geographic Data Collections Policy Statement

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### **I. Scope**

This Collections Policy Statement deals with analog geospatial resources presented graphically in the form of maps<sup>1</sup>, atlases, globes, charts (aeronautical and hydrographic), three-dimensional models, and aerial photography and remote sensing images; and digital geospatial data<sup>2</sup> or spatially referenced data in the form of vector and raster representations, relational databases that incorporate common geographic features as attributes, remotely sensed digital imagery, software for the creation, retrieval, analysis and display of geospatial data, and web sites.

For treatment of cartography as a subject, see the Geography and Cartography Collections Policy Statement.

The majority of the Library's cartographic and geospatial materials (Library of Congress Classification Schedule G1000-G9980) is housed in the Geography and Map Division. Analog cartographic materials often complement or supplement textual works and may appear in the Library's other format or subject collection areas. In an evolving information society, cartographic representations of geographic data and geo-referenced content may be collected by any curatorial unit of the Library. Recommendation,

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1 J.B. Harley and David Woodward in *The History of Cartography, Volume One, Cartography in Prehistoric, Ancient and Medieval Europe and the Mediterranean* (Chicago: The University of Chicago Press, 1987) define maps as "graphic representations that facilitate a spatial understanding of things, concepts, conditions, processes, or events in the human world."

2 The Federal Geographic Data Committee defines geospatial data as "Information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth. The information may be derived from, among other things, remote sensing, mapping, and surveying technologies."

selection decisions, and custodial responsibilities for cartographic materials, regardless of their form, format, or content, reside in the Geography and Map Division.

## II. Research Strengths

The Library has assembled a broadly inclusive and unparalleled collection of cartographic materials in analog or traditional cartographic formats; it holds the largest map collection in the world with original materials dating from the 14th century to the present date, providing coverage of every country on earth, the oceans, and celestial and other planetary bodies. The strength of the Library's cartographic collection is the comprehensiveness of its global and temporal coverage of planimetric, topographic, hydrographic, and thematic spatial data. In geographic terms the collection is worldwide in scope with unmatched strength in coverage of the United States, North America and the Western Hemisphere. From the historical perspective the collection documents the history of cartographic innovation and production from the 15th century to the present. While non-Western traditional mapping is well represented, the Western traditions of map design, production and printing dominate the Library's holdings. The strength of the Library's analog holdings is in printed rather than manuscript materials. The development of the Library's digital files of geospatial data will correspond closely in their growth to the Library's existing collection of traditional cartographic products.

## III. Collecting Policy

The Library acquires cartographic materials on a world-wide basis without regard to time period, language, geographic area, size, or format of the material.<sup>3</sup> The objective is to achieve comprehensive cartographic coverage of all geographic regions throughout the world by means of acquiring, to the extent practicable, all editions, revisions, or reproductions of cartographic materials that make a significant contribution to knowledge. "*Comprehensive*" in the context of this statement is interpreted to encompass complete geographic coverage of all parts of the world (terrestrial as well as celestial), rather than the acquisition of all cartographic products. Partial geographic coverage or representative coverage of a particular country or region is unsatisfactory, and for cartographic material to function as a primary resource for documenting the environmental, cultural, and political aspects of spatial change over time, it is often important to collect all editions of maps and map series selected for permanent retention.

The Library actively collects both current and retrospective cartographic materials, but the majority of its time and resources is directed toward the acquisition of current products with increasing emphasis on digital geospatial resources. Prominence is given to acquiring the official cartographic and geospatial publications of U.S. Federal, state, and local mapping agencies and the national mapping agencies of all other countries. Although the intention is always to collect on a worldwide basis, the retrospective focus is primarily on the United States and landmark items that document the history of cartography wherever found.

In general terms the Library collects cartographic materials that:

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<sup>3</sup> Although format does not normally play a role in acquisition decisions, for digital databases, the preference is for open source, non-proprietary files that can be used without restriction and that can be manipulated using standard image-processing and geographic information system software. See Library of Congress study, "Sustainability of Digital Formats Planning for Library of Congress Collections."

- a. broaden and enhance worldwide geographic and thematic coverage
- b. build upon the strength of existing collections
- c. provide more detailed or larger scale geographic coverage
- d. fill identified gaps in existing collections and map series
- e. upgrade the condition and quality of the cartographic collections (duplicate material may be acquired with the intention of improving the condition of existing collections).
- f. document the work of distinguished cartographers and map publishers, particularly those from the United States (this includes the acquisition of complementary papers, correspondence, and business records)
- g. document and illustrate historical events
- h. illustrate the technical process of map making, including the variety of printing techniques employed in the publishing of cartographic materials
- i. document and illustrate developments in thematic cartography
- j. document historical non-Western/non-European cartographic traditions
- k. document the development of geographic information system technology
- l. preserve restricted access materials

Limiting criteria: The following are factors that influence and affect the Library's access to and decision making with regard to the acquisition and retention of cartographic materials:

m. Scale: Due to space considerations, map scale has traditionally been a factor in acquisition and retention decisions relating to map series. In general the Library does not acquire map series on a national basis at scales larger than 1:20,000. Exceptions are made for those nations whose primary national topographic series is at a larger scale and for selected regional and urban areas. The compact storage capacity of digital files allow for the acquisition and retention of larger scale and more comprehensive map series, including large scale cadastral and infrastructure mapping.

n. National security classification restrictions: Since many cartographic products have military and strategic value, cartographic materials at large scales and of strategic areas, produced by both U.S. and foreign national mapping agencies, may be classified and not available to the Library. Provisions may be made for the acquisition of this material when the national security classification is removed.<sup>4</sup> With digital mapping in which limited distribution classifications impact immediate use, the Library must develop a means to acquire and to archive such cartographic output to ensure preservation and future access.

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<sup>4</sup> An example of this is the Library's recent efforts to acquire a strong representation of the larger-scale topographic, hydrographic and thematic mapping issued by national mapping agencies of the former Soviet Union.

o. Licensing agreements: Licensing agreements for proprietary geospatial data that allow public access can be prohibitively expensive, possibly requiring the Library to limit its acquisition to use within the Library, and limited to “staff only” access.

#### Formats and resources

p. Atlases (G1000-G3122): The atlas format comprises world, national, regional, urban, thematic, facsimile, and historical publications which the Library endeavors to collect at a comprehensive basis. Because of their bound format, maps in atlases have had a better survival rate than separate sheet maps and are important sources for documenting the history of cartography and the cartographic process. Emphasis is presently placed on acquiring items that build on the Library's strengths in general world, national, and thematic atlases, as well as atlases of counties and urban areas of the United States.

q. Globes (G3160-G3182): The aim is to acquire a representative selection of globes- terrestrial, celestial, planetary- that illustrate the history of globe production. Emphasis is given to collecting and preserving items representing the history of globe production in the United States.

r. Maps (G3190-G9980): Single-sheet maps and series maps form the nucleus of the Library's analog cartographic collection and have traditionally served as the Library's primary geospatial reference resource. For selected single-sheet maps or map series, at least one copy of all editions may be collected. The Library attempts to collect completely and comprehensively map series at selected scales.

s. Nautical charts: The Library collects comprehensively printed nautical/hydrographic charts, issued by U.S government agencies as well as those issued by all the other foreign national nautical chart publishing agencies. Some Federal government-produced nautical charts are also available electronically on optical media as well as on-line web sites.

t. Raised relief models: The Library collects representative examples of raised relief models in all media, including digital elevation data.

u. Photocopies, microforms, and scanned imagery: To enhance the preservation of existing collections and in cases where the original format is not available, the Library may acquire microform, photocopy, facsimile, scanned imagery or other forms of reproduction. These formats may provide access to important items and collections residing in international libraries and archives.

v. Aerial photographs and remote sensing images: Analog aerial photographs and remote sensing images are acquired very selectively to document and illustrate developments in these methods of monitoring the earth's surface. Digital data and optical media provide opportunities to collect and retain a more comprehensive collection of remote sensing imagery.

w. Printed/plotted digital cartographic data: To document the evolution of emerging electronic technologies, the Library collects representative examples of cartographic material produced in hard copy using electronic processes.

x. Published textual materials: Published ancillary textual works dealing with the cartographic process, bibliographies of cartographic material, and the history of cartography are collected comprehensively and are addressed more fully in the Geography and Cartography Collections Policy Statement.

y. Vector data: The Library collects data sets which represent the features of the earth as points, lines, or polygons referenced to specific geographic locations by such conventional means as longitude and latitude, and state plane coordinate systems, or x-y coordinates from a specific frame of reference. This includes such products as TIGER (Topologically Integrated Geographically Encoded Reference) files which define the geographical entities by which the Bureau of the Census collects

data; digital line graph files (DLGs) describing roads, hydrography, or other linear features of the earth; digital elevation models (DEMs); and gazetteers or geographic names files that standardize the spelling and location of cities, towns, and natural features; and other forms of data sets in the quickly changing arena of digital data.

z. Raster data: The Library collects raster data sets that depict information generalized to a portion of the earth or planetary body at a given level or resolution. This includes digital forms of aerial photography, satellite imagery, radar, sonar, and other forms of remotely sensed imagery and information.

aa. Digital versions of traditional map products: The Library collects digital representations of paper-based cartographic products, such as digital raster graphics (DRGs) issued by such agencies as the National Geospatial and Intelligence Agency (NGA) and the U.S. Geological Survey (USGS).

bb. Geographically oriented software: The Library collects, primarily through Copyright deposit, U.S. produced software products for the creation, retrieval, analysis, and display of geographic data and information. If the Library does not have the computer equipment necessary for the use of this software, its acquisition still will be considered in light of whether the manuals and supporting material document important trends in the development of the automated mapping, geographic information systems, or remote sensing fields. The Library continues to acquire software that is useful for retrieving, analyzing, and displaying geographic information and data in its collections.

cc. Web access: The Library evaluates, selects and catalogs web sites with geospatial content and has recommended content for various Minerva projects and commercial web sites, whether available to patron or staff only usage.

dd. Library of Congress "Database and E-Resources" web site: This web site contains selected electronic atlases, access to geographic and cartographic electronic journals, databases of historical map imagery, as well as, databases that allow the user to compile, design, and create custom maps.

#### **IV. Acquisitions Sources: Current and Future**

Cartographic and geospatial resources are often considered ephemeral, difficult to identify, and limited distribution outlets. Currently, international geospatial material vendors, geospatial data clearinghouses and on-line discovery tools, and publisher/producer web sites all assist in making cartographic and geospatial data more transparent and accessible. The Library acquires cartographic and geospatial resources using all of its standard acquisition sources: government deposit, government transfer, purchase, exchange, copyright, and donation. The Library benefits from its participation and association with a number of associations that promote the distribution, use, and preservation of cartographic and geospatial resources, including the Federal Geographic Data Committee, the Cartographic Users Advisory Council, the National Association of Counties, International Map Trade Association, the National States Geographic Information Council, etc. LC is looking at the collecting and preservation activities of the National Digital Information Infrastructure and Preservation Program (NDIIPP) for direction in archiving geospatial data. In particular the "North Carolina Geospatial Data Archiving Project" (NCGDAP), a partnership between the North Carolina State University Libraries and the North Carolina Center for Geographic Information and the "National Geospatial Digital Archive" (NGDA) at the University of California at Santa Barbara Libraries and the Stanford University Libraries and Academic Information Resources. With its broad national and international acquisition mission, the Library is engaged in developing a coherent role in collecting and preserving digital geospatial data. The Library monitors the activities of the National Geospatial Digital Archive and the work at the National Archive and Records Agency to avoid duplication of archiving efforts.

Government Deposit: See "the Government Publications - United States Collections Policy Statement". Government agencies, Federal, state, and local are the primary producers of analog and digital geospatial data in the United States. At the Federal level, the National Geospatial-Intelligence Agency, the U. S. Geological Survey and the Bureau of the Census provide extensive geospatial content. The Library aims to acquire a comprehensive collection of the cartographic products issued by all U.S. Federal government agencies. By law, *U.S. Code, Title 4, Public Printing and Documents, Section 1718*, the Library should receive all non-classified cartographic publications issued by Federal agencies. The Library also receives cartographic resources through the U.S Government Printing Office's Federal Depository Library Program. Standards developed by the Federal Geographic Data Committee are voluntarily being adopted by state and local agencies as well as private firms. Consequently, the Library will be able to accept digital geographic data from sources throughout the United States with the knowledge that it should be usable with standard software. Cartographic materials issued at the state, regional, and local government agencies also are broadly collected. The Library will need to keep abreast of new trends as government map-producing agencies shift emphasis away from generating products to providing on-line enabling services, i.e., mapping on demand. Internationally the collection is acquiring analog and digital content from its participation in the cooperative Foreign Map Procurement Program, described below.

Government Transfer: The transfer of superceded cartographic materials from other Federal government agencies remains a crucial component of the Library's acquisition program. Currently, the transfer is primarily limited to analog resources. The sharing of digital data among government agencies is blurring the distinction between deposit and transfer which may create concerns over archiving such data for the permanent collection.

Purchase: The expenditure of appropriated funds is directed toward retrospective and current analog materials and digital geospatial resources. Retrospective purchases are acquired primarily through dealer and auction catalogs. The Library also reviews on-line auctions and catalogs for potential acquisitions. The Library's approval plan instructions include the acquisition of works on the subjects of geography and cartography, but do not include cartographic materials, with the exception of atlases. Cartographic resources are also acquired through the Library's Overseas Operations offices.

Copyright: Copyright deposit has provided traditionally the primary means for the acquisition of commercially produced analog cartographic materials, and is the principle source of the Library's unparalleled collection covering the United States. As currently devised, copyright deposits are viable sources for acquiring geospatial data and software issued on such optical media as CD-ROM and DVD's. The Copyright Law is not a viable resource for acquiring born-digital commercially produced or repackaged geospatial data.

Gifts: The Library continues to receive gifts of retrospective and current cartographic and geospatial materials. The Geography and Map Division and its collections are the beneficiary of the acquisition support provided by the Library's James Madison Council and the Geography and Map Division's Philip Lee Phillips Society.

Foreign Map Procurement Program: The Foreign Map Procurement Program (FMPP) is a cooperative acquisition program administered by the Department of State. Since 1947 it has been the primary resource for the Library's acquisition of cartographic materials issued outside the United States. Currently, the FMPP acquires for the Library of Congress a variety of analog and digital resources, with digital resources now taking on a larger percentage of the program's acquisition budget. With the high cost of electronic resources, the Library will continue to benefit from its participation in the cooperative Foreign Map Procurement Program. The licenses negotiated by the FMPP normally limit data access to U.S. Government use only, making the resources available and useful to LC staff, the

Congressional Research Service, and the Congressional Cartography Program, but not available to the public. Participation in the FMPP requires coordination and monitoring to insure that the Library is not duplicating the efforts of this program through its own acquisition efforts.

## **V. Collecting Levels**

For all parts of the world the effort is to acquire coverage at the research level, 4.

Revised Nov. 2008