Snapshot of Digital Preservation in Federal Libraries: Maps

DigCCurr 2009:
Digital Curation Practice, Promise and Prospects

April 1-3, 2009
Chapel Hill, NC USA

Richard Huffine
National Library Coordinator
US Geological Survey

U.S. Department of the Interior
U.S. Geological Survey

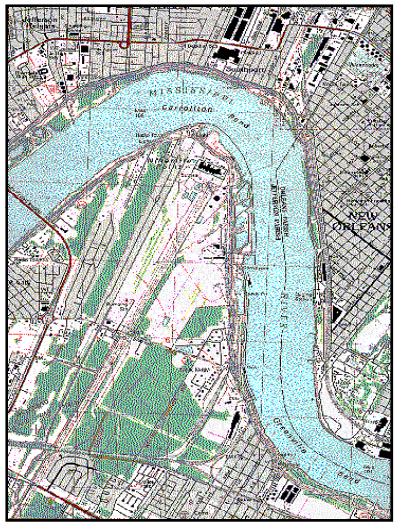
Overview

- Purpose and Driving Factors
- Approach and Specifications
- Technical Requirements
- Lessons Learned
- Links and Contacts

USGS

Purpose and Driving Factors

- The USGS took over responsibility for mapping the United States in 1879
- The best known USGS maps are the 1:24,000-scale topographic maps, also known as 7.5-minute quadrangles.
  - More than 57,000 7.5-minute maps were made to cover the 48 conterminous States, Hawaii and the territories.
  - Alaska is approximately 3,000 15-minute, 1:63,360-scale (1 inch = 1 mile).
- The 7.5-minute map series was officially completed in 1992



- The program has been replaced by *The National Map*, a framework for geographic knowledge from multiple partners
- There have been approximately 300,000 topographic maps produced by USGS, all editions and scales
- An unknown number of thematic maps have also been produced by USGS

Purpose and Driving Factors

- USGS Maps have become a valuable tool for scientific research, recreational, and historical use
- Digitization and geo-referencing of the historical record supports continued use of valuable government research
- Future derivative products can be produced using USGS maps as a base layer for reference

- Digitization can eliminate the need to store, transport, and handle physical products
- Provision of the historical record gives context to new information and other views of the geospatial record:
  - Satellite imagery
  - Aerial photography
  - LIDAR, geo-magnetic analysis, etc.

Approach and Specifications

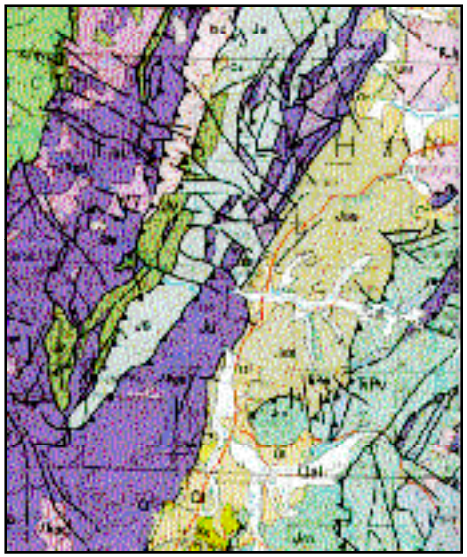
- The USGS Publications Warehouse initiated digitization efforts within USGS
- The *National Map* is stepping up to lead the effort to digitize all editions and scales of USGS topographic maps
- The *National Geologic Map Database* is leading the effort for geologic maps
- Topographic maps are available for identification and download through the *USGS Store*. Geologic maps are available from the *National Geologic Map Database*
- USGS is working with a number of institutions to repurpose previously scanned maps and to build a comprehensive collection of maps produced by the Survey
- The National Archives and Records Administration has provided USGS with requirements for archiving digital products as federal records

Technical Requirements

- The goal is to provide a geo-referenced digital file from a scanned map at a minimum of 400 dpi
  - The Army Corps of Engineers had a prior effort to provide access to low-resolution images (200 dpi)
  - Other formats have been produced in the past including MrSID and JPEG 2000
- Current standard file formats are an archival TIFF image and a lossless-compressed PDF file for download and use
- The PDF format can be integrated with Geospatial Information Systems and the map collars can be hidden to support seamless views across quadrangles
- A workflow process was developed that supports accurate and efficient production of these new digital products and addresses:
  - Quality Assurance/Quality Control
  - Metadata creation
  - Search, File storage, data migration, etc.

Lessons Learned

- Cooperate and coordinate with others
- Plan for migration, reuse, and repurposing
- Embrace standards for formats, data management, exchange, etc.
- Build in time and resources for quality assurance



- Build a capability and then reach out to others that share common goals
- If possible, scan once (as high quality as possible), store original scans for future re-use, and develop derivative copies for access and use

Links and Contacts

- Links
  - USGS Store (Map Locator and Downloader) – http://store.usgs.gov
  - National Map: - http://nationalmap.gov/
  - National Geologic Map Database - http://ngmdb.usgs.gov/

- Contacts
  - USGS Library
    - Richard Huffine (703) 648-7182, rhuffine@usgs.gov
  - National Map – Historic Topographic Maps
    - Greg Allord (608) 204-0082 x250, gjallord@usgs.gov
  - Geologic Map Database
    - Dave Soller, (703) 648-6907, drsoller@usgs.gov

USGS