

# Engravings of USGS Maps and Other Illustrations Available for Transfer, Donation, or Sale

## Summary

The Federal Government is releasing excess engravings once used to reproduce U.S. Geological Survey (USGS) topographic and geologic maps and other scientific illustrations (see Figure 1).

The process makes these unique engravings, created from the 1880s to the 1950s, available for transfer to Federal agencies; for donation to State and local governments, certain non-profit educational and other organizations, and public agencies; and for sale to the public.

Those interested in obtaining engravings need to understand the phases of the process; know how to request the engravings; plan the logistics to receive, pack, load, and transport them; and be ready to request a donation or to make a purchase offer when the engravings become available.

State and local governments, certain non-profit educational and other organizations, and public agencies interested in receiving a donation should establish their eligibility with their State Agency for Surplus Property (SASP). The SASPs are listed at <http://www.gsa.gov/portal/content/100851>.

The engravings are available through a process managed by the U.S. General Services Administration (GSA). USGS will post supporting information weekly at <ftp://ftpext.usgs.gov/pub/er/va/reston/Engravings/>.

## Uses for the engravings

The most likely uses for the engravings are to:

- Document and interpret the history of earth science data collection and compilation, maps and mapping techniques, and engraving and printing techniques.
- Educate those interested in mapping and printing technology, and the engraving and print making arts.
- Enhance a collection of map or printing artifacts or engravings.
- Commemorate places mapped on the engravings.

Organizations and individuals interested in maps and map making, printing, and the arts of engraving and print making have shown the most interest in the engravings. These include Federal and state agencies, universities and colleges, libraries, museums, educators and professionals, societies dedicated to the history of mapping and printing, state and regional historical societies, and collectors.

Organizations report that the engravings create cross-traffic among people with these interests. For example, map libraries report that the engravings attract people interested in engraving and print making.

Organizations that have engravings frame and hang them (see Figure 2) or put them in transparent cases for display, or store and retrieve them for interpretation and study as needed.

## The engravings

### *What is the subject of the engravings?*

Each engraving has information about mapped features (for example, cultural,

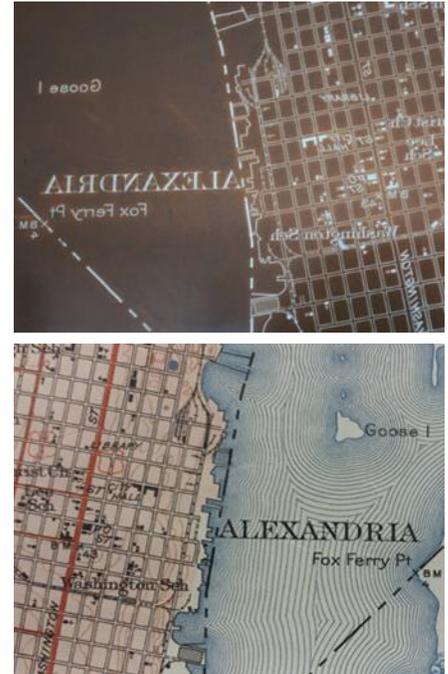


Figure 1. A portion of an engraving (top) used to print the black ink for a USGS topographic map (bottom). (Photo courtesy of Bruce Geyman, USGS.)

transportation, and boundary features, topography, hydrography, or geology) or other scientific information for a place. Most of the engravings are for topographic maps.

Most of the engravings are of places in the United States. They can include adjacent areas in Canada and Mexico. Some places are mapped on engravings at different map scales.

### *For what were the engravings used?*

From the 1880s to the 1950s, the USGS engraved maps and other images from scientific measurements and information. The engravings (see Figure 3), made by hand, were used to reproduce topographic and geologic maps and other illustrations such as geologic cross sections.



Figure 2. (Above) A typical wall display of three cleaned, polished, enhanced, and framed engravings. These engravings are some of those used to print the USGS 1:31,680-scale topographic map "Washington, D.C. and vicinity". From left to right are the engravings used to print cultural, transportation, and boundary features and text with black ink; contours with brown ink; and hydrography with blue ink. (Photo courtesy of Bruce Geyman)

Each engraving measures 18 inches wide and 26 inches long. When framed each measures 22 inches wide, 30 inches long, and two inches deep. The glare in the rightmost engraving is from the light in the room reflecting off the mirror-like surface of the polished plate.



Figure 3. (Left and above) Close up of the engraving used to print cultural, transportation, and boundary features and text with black ink. The inset shows the mirror-image reversal of the point and line symbols and text. The engraved symbols and text have been enhanced by coloring them white to improve their visibility for display. (Image courtesy of Bruce Geyman.)

### *What do the engravings look like?*

The engravings have point and line symbols and text. The engravings are the mirror image (left-to-right reversed) of the final illustration. The words and text characters are backwards. For maps, “east” is on the left side of the engraving.

### *How do the engravings relate to the printed image?*

The engravings are color-separated; that is, there is an engraving for each color of ink on the print. A single-color illustration requires one engraving. A multicolor illustration requires an engraving for each color.

The engravings also can be feature-separated to allow the printing of different versions of an illustration. For example, topographic and geologic maps for a place are printed with different combinations of engravings.

The set for a typical topographic map has three engravings, one for each of the black (cultural, transportation, and boundary features and most text), brown (contours), and blue (hydrography) colors. Geologic maps can have engravings for contacts and

map unit labels, faults, structure contours, and other features.

In addition to being separated by colors and features, engravings for large illustrations are partitioned to be a manageable size.

The engravings might not have all the points, lines, and text for an illustration. The areal lithologic patterns and colors were reproduced on geologic maps with other artifacts, and are not on the engravings.

### *What is the condition of the engravings?*

The condition of an engraving usually is good. The USGS did not print illustrations directly from the engraving; it transferred the image from the engraving to a lithographic stone and printed from the stone. This approach preserved the quality of the engraving so that it could be used to reprint and revise the illustration.

### *Who owns the rights to the images on the engravings?*

The images are in the public domain.

## The plates

### *On what material are the engravings made?*

The engravings are on metal plates. Most plates are made from a copper alloy and a few are made from zinc.

### *What do the plates look like?*

The face of a plate has a unique engraving. In addition to the image, an identifier often is engraved on the edge of the plate.

There usually is one illustration engraved on a plate. In a few cases a plate has engravings for several small illustrations or for multiple colors or features for one small illustration. This practice conserved materials.

The reverse side of the plate usually is blank. Some plates have identification information painted on them and are dimpled in places where the engraving was changed.

### *What are the dimensions and weight of the plates?*

Most plates are 17-by-21 inches and weigh approximately 12.5 pounds. A set of engravings for a typical topographic map weighs approximately 37.5 pounds; that is, three plates each weighing 12.5 pounds.

The remaining plates vary in size from 4-by-5 inches to 36-by-40 inches. Their weights vary with their dimensions.

The thickness of the plates ranges from 0.09 inches to 0.18 inches.

### *What is the condition of the plates?*

Most of the plates are tarnished. The copper plates have the color of an old penny. Many are dusty. Some plates are warped, pitted, scratched, or otherwise damaged.

Most plates are stored horizontally in wooden cabinets (see Figure 4). The plates rest on ledges that prevent them



Figure 4. A zinc plate in its storage cabinet. Most plates are stored horizontally in wooden cabinets to prevent them from touching and hinder them from warping. They have been stored for 60 years and so will need a good but gentle cleaning. (Photo courtesy of Bruce Geyman, USGS.)

from touching and hinder them from warping.

Some plates have coverings or coatings to protect the engravings.

Commercial services are available to clean, polish, and preserve artifacts like the plates and treat them to improve the legibility of the engraving.

## Availability and timing

### *In what units will the engravings be transferred, donated, or sold?*

The engravings are transferred, donated, or sold in *sets*. A set consists of the engravings used to print an illustration. Incomplete sets can occur because engravings are not available, or are combined on a plate with engravings for another set.

### *In what condition will the sets be transferred, donated, or sold?*

The sets are in “as is” condition.

### *What descriptive information for the sets will be available?*

The sets are described with the title of the map or publication or other description, state(s) included in the map or publication (if applicable), map scale (if applicable), and number of plates.

### *In how many releases will sets be available?*

The Federal Government makes the sets available in groups called “releases.”

Release 1, which had 100 sets, occurred from May to July, 2014. 70 sets were donated. The 30 sets that were not requested were added to Release 2. There was no public sale.

Release 2, which had 1,156 sets, started in August 2014. As of April 12, 2015, 657 sets were donated and 467 sets were sold by auction. The remaining sets from Release 2 will be re-offered in Release 3.

Release 3, which includes all the remaining map and other scientific engravings, started in late April 2015.

Release 4 will include all remaining printing artifacts and furnishings.

### *From where will the sets be distributed?*

The sets will be distributed from Herndon, Virginia, a Virginia suburb of Washington, DC.

Recipients are responsible for receiving the sets from this location, and the subsequent steps of packing, loading, and shipping the sets to their location.

## The transfer, donation, and sale process

### *What process will be used to transfer, donate, or sell the sets?*

The Federal Government uses the Federal Property Management Program, operated by the U.S. General Services Administration (GSA), to transfer, donate, or sell the sets. The Federal Government uses this program to transfer, donate, or sell its excess personal property<sup>1</sup>.

The GSA “Personal Property for Reuse and Sale” web site, available at <http://www.gsa.gov/portal/category/21045>, provides links to information about the process. GSA publishes descriptions of the surplus process and donation program through <http://gsa.gov/portal/content/136021>. See the publications “Personal Property Disposal Guide” for an overview of the process, and “Guide to the Federal Surplus Personal Property Donation Program”.

### *What are the steps in the process?*

Bureaus and offices in the U.S. Department of the Interior, of

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<sup>1</sup> *Personal property* is property that can be moved. It is distinguished from *real property*, which is land and assets attached to land.

which USGS is a part, screen and request sets for reuse within the Department using the Interior Asset Disposal System.

GSA receives the list of the remaining sets, and offers them for transfer, donation, and sale.

GSA first advertises the sets for transfer or donation on its web site GSAXcess. Organizations eligible to receive a transfer or donation screen and request the sets they want. GSA fills Federal requests for transfers, and then makes awards to requests for donations from State and local governments, eligible non-profit organizations, and public agencies. GSA notifies organizations of requests that are fulfilled. They receive, pack, load, and transport the sets to their locations.

GSA then makes the remaining sets available for public sale. GSA notifies organizations and individuals to which a sale is made. They pay the terms of the sale, and receive, pack, load, and transport the sets to their location.

Finally, the Federal Government recycles, abandons, or destroys sets that are not transferred, donated, or sold.

### *How do Federal agencies screen and request a transfer of property for reuse?*

Federal agencies typically screen and request the transfer of property through their property management office.

### *How do state and local governments and other eligible non-Federal organizations screen and request a donation of property?*

State and local governments and other eligible non-Federal organizations screen and request a donation of property through their State Agency for Surplus Property (SASP).

The SASPs distribute property to state and local governments and other eligible organizations. They also

determine an organization's eligibility to receive a donation, and assist eligible organizations in locating, screening, and acquiring property. They advise organizations of the terms, conditions, restrictions, and noncompliance ramifications associated with donated property. An SASP adjudicates competing requests for property that it receives.

Each state, commonwealth, and territory has an SASP. Contact information for each SASP is listed at <http://www.gsa.gov/portal/content/100851>.

See the GSA web sites listed above for more information about this process. Detailed regulations (FMR part 102-37) are available through <http://www.gsa.gov/portal/ext/public/site/FMR/file/FMRTOC102-37.html/category/21858>. See Subpart E.

### *What steps should an organization take to request a donation?*

An organization should:

1. Decide if it is interested in receiving sets. Some potential recipients note concerns about the unwieldiness of the plates because of their number, size, and weight; about the cost and effort required to receive and display them; and about the difficulty that their patrons might have in reading the reversed images. Prints of the illustrations may be a better choice for these organizations.
2. Determine if it is eligible for a donation by reviewing the GSA publications and regulations or by asking its SASP.
3. Establish its eligibility for a donation and learn the procedures for screening and requesting property:

- If an organization has not established its eligibility with the SASP, it should:

- Contact its SASP to establish its eligibility for the donation program. (This process takes time.)
- Learn from the SASP the procedures it uses to screen and request property and fees it might charge.
- If an organization has established its eligibility, learn the process it uses to request property through the SASP. If you are not sure who to ask, check with the office that requests donations of property, manages property, or purchases property. The SASP might know the office in an organization with which it has worked in the past.

4. Watch for an announcement of the availability of the sets and make a request through the SASP promptly.<sup>2</sup>
5. Plan for the logistics of receiving, packing, loading, and transporting the sets to the location of the organization. The SASP might have advice for these logistics.

### *How will sets that are not requested as donations be sold to the public?*

GSA has several methods through which it sells excess property. For Release 2, GSA used its online auction site named "GSA Auctions", which is available at <http://gsaauctions.gov>. At the bottom of the web page are links to a description of the auction process, help, frequently asked questions (FAQs), and payment options.

Additional information about the GSA Auctions process and a link for technical assistance is available through <http://www.gsa.gov/portal/content/100747>.

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<sup>2</sup> *Non-Federal organizations must seek a donation through their SASP.* Neither the U.S. Geological Survey nor the U.S. General Services Administration will donate property to non-Federal organizations directly.

Bidders must register with the GSA Auctions site before placing a bid.

### *What costs will a recipient incur for the transfer, donation, or sale of the engravings?*

The Federal Government does not charge for sets transferred to Federal agencies or donated to state and local governments and other eligible non-Federal organizations.

Organizations and individuals that purchase sets pay the terms of the sale.

All recipients pay the cost of receiving, packing, loading, and transporting their sets to their location from a location in the Virginia suburbs of Washington, DC.

Organizations that seek a donation pay fees charged by the SASP.

### *What other concerns should an organization or individual have?*

GSA can move property through the process quickly. Become aware *now* of procedures and timelines for requesting a donation of Federal personal property from your agency's property management office (for Federal organizations) or SASP (for State and local governments, eligible non-profit organizations, and public agencies that seek donations), or for purchasing property from GSA (for those buying through public sales).

## **Information about the engravings and related USGS mapping activities**

Organizations that interpret artifacts for their patrons have asked for information about the engravings. Sources of information are listed below. The web sites listed were accessed on March 13, 2015, unless otherwise noted.

## *Prints reproduced from the engravings*

Scanned images of prints may be found, viewed, and downloaded through the following USGS web sites:

- Historical topographic maps: Historical Topographic Map Collection at <http://nationalmap.gov/historical/index.html>.
- Geologic and topographic maps: The National Geologic Map Database at [http://ngmdb.usgs.gov/ngmdb/ngmdb\\_home.html](http://ngmdb.usgs.gov/ngmdb/ngmdb_home.html).
- Bulletins, circulars, professional papers, and other series of USGS publications: USGS Publications Warehouse at <http://pubs.er.usgs.gov/>.

Images available for download may be displayed digitally or printed.

Some prints are not available from these sites. Other organizations have scanned images of USGS maps and publications available online.

USGS, university and college, and public libraries with large map collections often have prints of USGS maps.

Firms and individuals that service map collectors sell prints of old USGS maps.

Organizations that would like the current USGS 7½-minute topographic maps to complement the engravings can find, view, and download the maps, called “US Topos”, through <http://nationalmap.gov/ustopo/index.html>.

## *Publications*

Birdseye, C.H., 1928, Topographic instructions of the United States Geological Survey: U.S. Geological Survey Bulletin 788, 432 p. Available online in seven parts (Introduction and Parts A through F) through <http://pubs.er.usgs.gov/>. The

engraving process is discussed in Part E on the pages numbered 336-337.

Evans, R.T., and Frye, H.M., 2009, History of the Topographic Branch (Division): U.S. Geological Survey Circular 1341, 197 p. Available at [http://pubs.usgs.gov/circ/1341/pdf/circ\\_1341.pdf](http://pubs.usgs.gov/circ/1341/pdf/circ_1341.pdf).

Gannett, H., 1893, A manual of topographic methods: U.S. Geological Survey Monograph XXII, 300 p. Available at <http://pubs.usgs.gov/mono/0022/report.pdf>.

Gannett, H., 1906, Manual of Topographic Methods, U.S. Geological Survey Bulletin 307, 88 p. Available at <http://pubs.usgs.gov/bul/0307/report.pdf>.

Kübel, S.J., 1908, The engraving division of the United States Geological Survey: *in* Meadon, J., ed., The graphic arts and crafts year book (vol. 2): Hamilton, Ohio, The Republican Publishing Company, pp. 75-78. Available through <http://books.google.com>.

Phillips, H., 1997, Copperplate engraving for the production of topographic maps at the United States Geological Survey 1890-1953: Meridian, no. 11, pp. 5-21. Available at [http://www.ala.org/magirt/sites/ala.org/magirt/files/content/publicationsab/Meridian/meridian\\_11.pdf](http://www.ala.org/magirt/sites/ala.org/magirt/files/content/publicationsab/Meridian/meridian_11.pdf).

Rabbit, M.C., 1989, The United States Geological Survey: 1879-1989: U.S. Geological Survey Circular 1050, 52 p. Available at <http://pubs.er.usgs.gov/publication/circ1050>.

Reed, J., 2011, A brief history of geologic mapping in the USGS (web site):

[http://ncgmp.usgs.gov/geomaps/history/brief\\_history.html](http://ncgmp.usgs.gov/geomaps/history/brief_history.html).

Ridgway, J.L., 1920, The preparation of illustrations for reports of the United States Geological Survey: Washington, Government Printing Office, 101 p., 6 sheets. Available at <http://pubs.er.usgs.gov/publication/70047685>.

U.S. Geological Survey, [1955], Map reproduction: Washington, U.S. Geological Survey, 15 p.

Usery, E.L., Varanka, D.E., and Finn, M., 2009, Mapping developments and GIS in the USGS, 1884-2009: Proceedings, International Cartography Conference, Santiago, Chile, November, 2009. Available at [http://icaci.org/files/documents/ICC\\_proceedings/ICC2009/html/nonref/7\\_13.pdf](http://icaci.org/files/documents/ICC_proceedings/ICC2009/html/nonref/7_13.pdf). Accessed April 28, 2015.

Annual reports of the Director of the Geological Survey provide the status of mapping and related publication activities. They are available through the USGS Publications Warehouse at <http://pubs.er.usgs.gov/>.

## *Web sites*

- 125 Years of Topographic Mapping, <http://nationalmap.gov/ustopo/history.html>
- History of Geologic Mapping at the USGS, <http://ncgmp.usgs.gov/geomaps/history/history.html>

## *Photographs*

Photographs of mapping, engraving, and printing activities are available at:

- <http://library.usgs.gov/photo/#/> (Use the search terms “map”, “topographic”, and “hoee” (the name of a building). Use a different term for each search.)
- [http://online.wr.usgs.gov/outreach/historicPhotos/historical\\_photos.html](http://online.wr.usgs.gov/outreach/historicPhotos/historical_photos.html)

(See the photographs in the 1890-1924 and 1925-1953 sections.)

- <http://gallery.usgs.gov/sets.asp> (Under the heading “employees at work,” see “historical”)
- <http://gallery.usgs.gov/collections.asp> (See “Geography”)
- [http://pubs.usgs.gov/circ/1341/pdf/circ\\_1341.pdf](http://pubs.usgs.gov/circ/1341/pdf/circ_1341.pdf) (Links to the document “History of the Topographic Division (Branch)”)

The pamphlet “Map Reproduction” listed in the Publications section above contains photographs with captions for the steps in the reproduction process.

## Items from recipients of sets of engravings

Allison, L., “Engraved copper plates used to print topographic maps”, Arizona Geology (blog), March 10, 2015. Available at <http://arizonageology.blogspot.com/2015/03/engraved-copper-plates-used-to-print.html>.

American Geographical Society Library, “USGS copper plates” (photographs), no date. Available at <https://www.flickr.com/photos/agslibrary/sets/72157649070312110/>.

Cope, A., “USGS Copper Plates”, American Geographical Society Library (blog), May 18, 2015. Available at <https://agslibraryblog.wordpress.com/2015/05/18/usgs-copper-plates/>. Accessed May 29, 2015.

Olson, J., “The genesis of USGS topographic maps”, Research & Scholarship (blog), January 16, 2015. Available at <http://library-blog.syr.edu/drs/2015/01/16/the-genesis-of-usgs-topographic-maps/>.

Steffenson, J. (jsteffenson). “Map geek Moment, just received the @USGS copper plate master I bought.”

April 22, 2015, 5:13 pm. Tweet. Accessed May 29, 2015.

University of Wisconsin Fond du Lac, 2015 (March 6), Geography/Geology Dept. receives historic engraving plates (news release): Fond du Lac, Wisconsin, Office of Marketing and Communications. Available at <http://fdl.uwc.edu/campus/news/releases/geographygeology-dept-receives-historic-engraving-plates>.

Western Illinois University (WIU), 2014 (December 18), Copper printing plate used to make historic local maps now at WIU’s Malpass Library (news release): Macomb, Illinois, Office of University Relations. Available at [http://www.wiu.edu/news/newsrelease.php?release\\_id=12186](http://www.wiu.edu/news/newsrelease.php?release_id=12186).

## Other writings

Hoffer, O., “Historic maps of America up for auction”, The GSA Blog, March 30, 2015. Available at <http://gsablogs.gsa.gov/gsablog/tag/usgs/>. Accessed April 12, 2015.

Newell, M. and Domaratz, M., “USGS engravings offered to the public”, Science Features (blog), March 30, 2015. Available at [http://www.usgs.gov/blogs/features/usgs\\_top\\_story/usgs-engravings-offered-to-the-public/?from=title](http://www.usgs.gov/blogs/features/usgs_top_story/usgs-engravings-offered-to-the-public/?from=title). Accessed April 12, 2015.