



National Geospatial Program Office

Accessing Geospatial Information



Federal Depository Library Conference
October 18, 2010

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

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Topics for Today

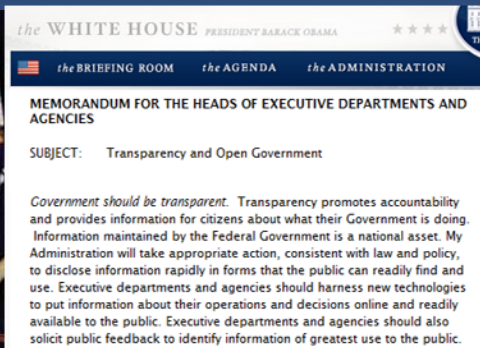
- Open Government
- Data.gov and Geospatial One-Stop
- *The National Map*
 - Data Delivery Services
 - US Topo



Open Government



USGS



"Information
maintained by the
Federal Government is
a national asset."

President Obama January 21, 2009

Open Government

- January 21, 2009 Memo for Heads of Federal Agencies and Departments
 - Government should be Transparent
 - Government should be Participatory
 - Government should be Collaborative
- CTO Directed to issue Open Government Directive
 - Instructions for Executive Branch on required actions for implementing these principles
 - How data will be released to the public
 - How agencies will engage the public in policy making
 - How to leverage emerging platforms
 - "Hardwiring Executive Branch Accountability"

USGS

Open Government

- December 8, 2009 Release of OGD
 - Numerous key deadlines and deliverables established, including:
 - 1/22/2010: Each Department to **publish 3 high value datasets to Data.gov**
 - 1/22/2010: Each Department to **designate high-level senior official** to be accountable for open government **data quality**, objectivity, etc.
 - 1/22/2010: OMB to **establish working group** on innovation and best practices
 - 2/6/2010: Each Department to **create open government webpage** at [http://www.\[agency\].gov](http://www.[agency].gov)
 - 4/7/2010: Each Department to publish its **Open Government Plan** that describes how it will improve transparency and integrate public participation and collaboration into its activities



Data.gov

There are over 24,000 .gov web sites – difficult to navigate

Public must understand the federal organizational structure to find datasets on key topics

Data exists in portals – are not “raw” machine downloadable or data locked in legacy systems

Web sites not designed for new generation of technologies on the web



Data.gov

- **Beyond Transparency: Driving Innovation**

- The Federal Government does not have a monopoly on good ideas

- Access to Information unleashes creativity
- Innovation drives sustainability



Data.gov

When GPS
was made available
(w/o Selective
Availability)
markets were created
innovation happened!



FRIDAY, MARCH 19, 2010
AN OFFICIAL WEB SITE OF THE UNITED STATES GOVERNMENT


DATA.GOV

Share


HOME OPEN GOVERNMENT FEDERAL STATE/LOCAL/TRIBAL SUGGEST DATASETS DIALOGUE METRICS FAQ ABOUT

**DISCOVER.
PARTICIPATE.
ENGAGE.**


View the DATA.GOV catalogs:



RAW DATA CATALOG

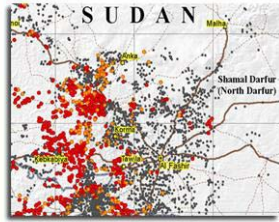


TOOL CATALOG



GEODATA CATALOG

Darfur - Damaged-Destroyed Villages Sept 2009



The dataset from the Humanitarian Info Unit depict villages confirmed to have damaged or destroyed in the Darfur region of Sudan between 2003 and 2009.

View more

USGS 9

Data.gov

FEATURED TOOL:
U.S. GEOLOGICAL SURVEY (USGS)
USGS Global Visualization Viewer for Aerial and Satellite Data

Two million aerial images of the Earth's surface are available for immediate selection and free download via the USGS Earth Resources Observation and Science (EROS) Center's Global Visualization Viewer at <http://globalviewer.gov/>. Users can browse thumbnails, browse images and download full-image selections from 1.5 million aerial photos of U.S. sites and 8.5 million images captured worldwide by U.S. Earth-observing satellites.

[VIEW THIS TOOL](#)



- ◆ Break down stovepipes to increase access to data
- ◆ Encouraging development of innovative applications
- ◆ Instant access: Downloadable data only one click away
- ◆ Data that can be manipulated and mashed-up ("machine readable")
- ◆ Tools that provide access to complex datastores
 - ◆ Widgets

FEATURED TOOL:
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
MyNASA

Monitoring and inquiry using NASA data on Atmosphere and earth science for Teachers and Amateurs. The MY NASA DATA (My Access Server) (MAS) is now available to create your own reports for your class or your interests. The MAS contains over 140 parameters in atmospheric and earth science from five NASA scientific projects.

[VIEW THIS TOOL](#)



Data.gov, a website that enables the public to easily find, **download**, and use datasets and tools that are generated and held by the Federal Government.

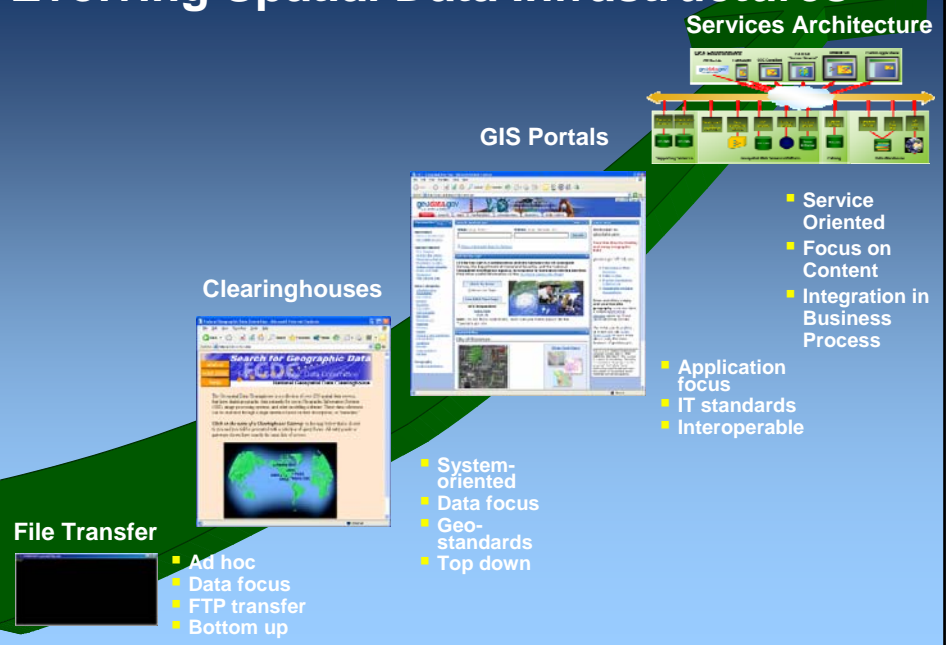
Open Government Design Principles

- Share As Much Data As Possible
- Access to Authoritative Source Data
- Access to Current Data
- Make Data Widely Accessible
- Ensure Data is Machine Readable
- Use Open Formats

The Geospatial Community has been a leader in sharing information



Evolving Spatial Data Infrastructures



Geospatial One-Stop (GOS)

- Provide online discovery and access to geospatial resources (data, applications, web sites) across all levels of government
- Develop standards and models to support the exchange of data and facilitate web services
- Promote partnerships among Federal, state, and local agencies
- Reduce redundant investments and facilitate cost sharing



Make it easier, faster and less expensive to find and use geospatial data



New Catalysts for Geo-enabling 'Transparency in Government'

USA Spending
 Spending
 By Agency | By Location
 Federal Spending FY 2005

Data.gov
 Data.gov Catalog
 Search results for keywords: [input field]
 Search results by agency/healthcare agency

Annotations:
 - GOS API Search return XML results
 - GOS API search results are displayed in Data.gov



Initial Publishing of Downloadable Data

GOAL – 250,000 Data sets by the anniversary

- Census Tiger Files
- USGS High-Resolution Imagery
- EPA Facilities Data
- NGA-NASA Shuttle Radar Topography Mission Data of the US
- New US Topo GeoPDF maps
- A variety of other science related geodata on topics related to biology, energy, etc



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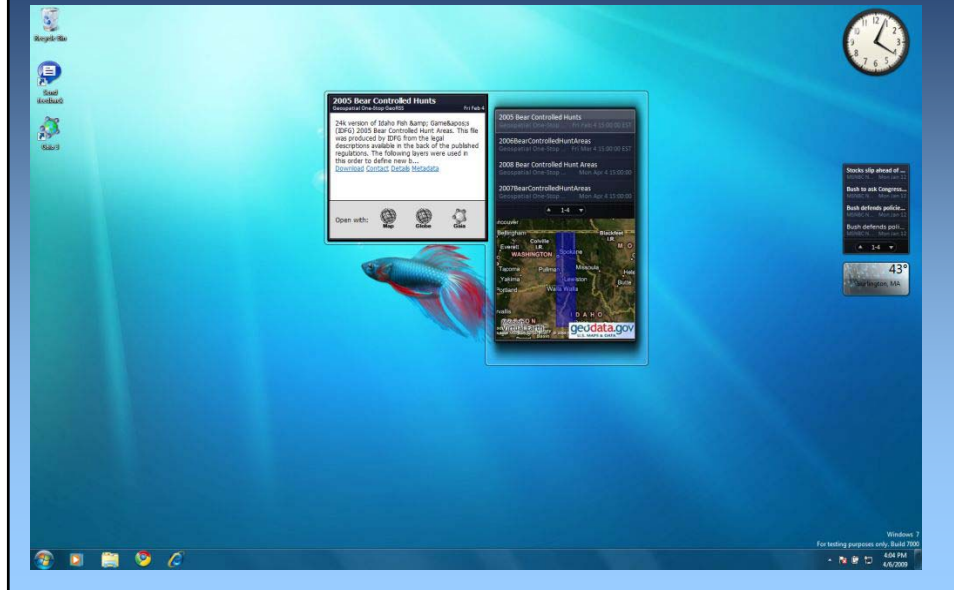
State uses of the GOS API

The screenshot displays the Delaware Spatial Data Catalogue website in a Windows Internet Explorer browser window. The page features the State of Delaware logo and a search bar. A search for "Search geodata.gov" has been performed, resulting in a list of data categories including:

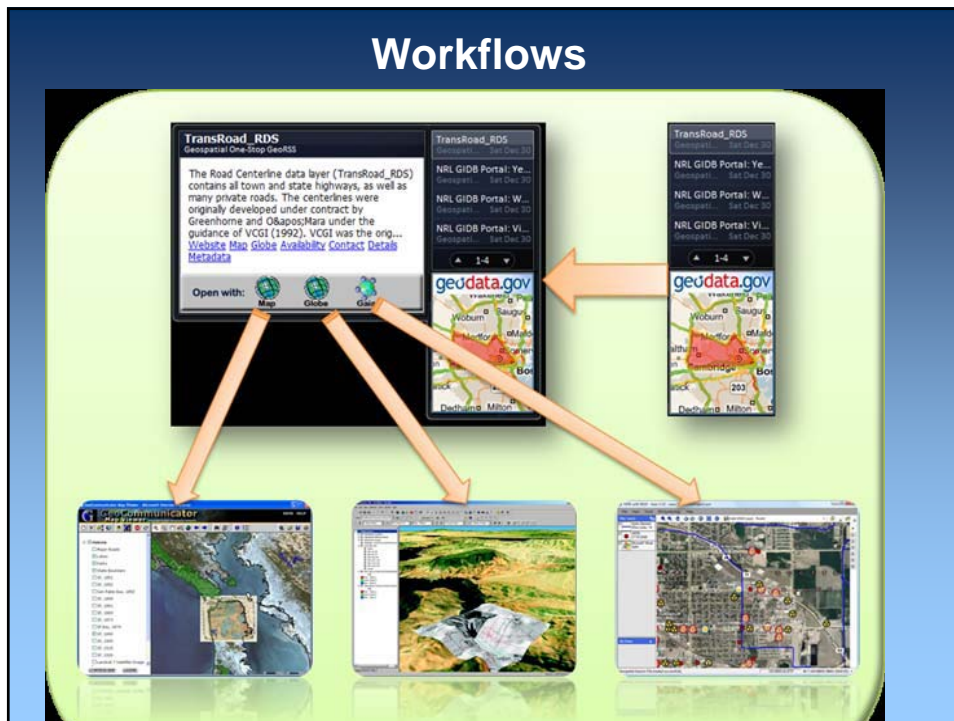
- Map and Aerial Photo Inventory
- Delaware Census 2000 SF1 ArcIMS Service
- Delaware 2000 SF1 WMS Service
- Delaware 1954 Orthophotography
- Delaware Orthophotography Tile Index
- State Boundary Monument Data Base
- USGS Delaware Roads
- Digital Line Graph, Hydrography Layer (Quad-based; 1:24,000-scale)
- USGS Delaware Contours

The page also includes a sidebar with navigation links such as HOME, SERVICES, and INFORMATION, and a footer with the URL <http://stateplanning.delaware.gov/dgdc/catalogue.shtml#PageContent>.

Dashboard for Windows 7



Workflows



Data.gov Visualization

- What data is mashable?
 - Basic problem is getting data from Data.gov catalogs (incl. zip files, *.tar.gz, etc... some KML, some shapefiles, probably some services) into a format that is readily viewable.
- Data.gov now has its initial Mapping Mashup / Preview Capability!



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HOME DATA TOOLS COMMUNITY METRICS DIALOGUE

A GLOBAL MOVEMENT TO DEMOCRATIZE DATA

VIEW MORE ▶

Most Popular Datasets

1. Worldwide M+ Earthquakes, Past 7 Days
2. U.S. Overseas Loans and Grants (Greenbook)
3. Latest Volumes of Foreign Relations of the...
4. Cooperative Research and Development...
5. Active Duty Marital Status

SEARCH OUR CATALOGS

Search our catalogs.. SEARCH ▶

APPS

With so much government data to work with, developers are creating a wide variety of applications, mashups, and visualizations. From crime statistics by neighborhood to the best towns to find a job to seeing the environmental health of your community—these applications arm citizens with the information they need to make decisions every day. Enjoy these highlights of the hundreds of applications available.

COMMUNITY

Data.gov is leading the way in democratizing public sector data and driving innovation. The data is being surfaced from many locations making the Government data stores available to researchers to perform their own analysis. Developers are finding good uses for the datasets, providing interesting and useful applications that allow for new views and public analysis. This is a work in progress, but this movement is spreading to cities, states, and other countries. After just one year a community is born around open government data.

Just look at the numbers:

- 6 Other nations establishing open data
- 8 States now offering data sites
- 8 Cities in America with open data
- 236 New applications from Data.gov datasets
- 253 Data contacts in Federal Agencies

SEMANTIC WEB

As the Web of linked documents evolves to include the Web of linked data, we're working to maximize the potential of Semantic Web technologies to realize the promise of Linked Open Government Data.

Thanks to our collaboration with the **Tetherless World Constellation** at the **Rensselaer Polytechnic Institute**, Data.gov is now hosting one of the largest open collections of RDF datasets in the world! Check out some of their semantic mashups **we're featuring** and read our blog entry to learn more about where we are, where we're going, and why we think this platform will **help democratize access to governmental data**.

An Official Web Site of the United States Government Thursday, June 24, 2010 [Sign In](#)

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mineral operations

Advanced Search

Results 1-10 of about 16 for 'mineral operations' Web results by **bing**

Construction Minerals Operations - Direct Download
 Abstract This map layer includes construction minerals operations in the United States. The data represent commodities covered by the Minerals Information Team (MIT) of the U.S. ...
http://www.data.gov/_jg502049 - Cached

Mineral Operations of Latin America and Canada
 Attributes of over 900 mineral facilities ... Agency: Department of the Interior. Sub-Agency: US Geological Survey. Category Geography and Environment
http://www.data.gov/_j18 - Cached

Agricultural Minerals Operations - Direct Download
 Abstract This map layer includes agricultural minerals operations in the United States. The data represent commodities covered by the Minerals Information Team (MIT) of the U.S. ...
http://www.data.gov/_jg502050 - Cached

Refractory, Abrasive, and Other Industrial Minerals Operations ...
 Abstract This map layer includes refractory, abrasive, and other industrial minerals operations in the United States. The data represent commodities covered by the Minerals ...
http://www.data.gov/_jg502043 - Cached

DATA.GOV
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HOME DATA TOOLS COMMUNITY METRICS DIALOGUE GALLERY WHAT'S NEW [\(9/2010\)](#)

Search our catalogs...

Mineral Operations of Africa and the Middle East

DATASET SUMMARY	
Agency	Department of the Interior
Sub-Agency	US Geological Survey
Category	Geography and Environment
Date Released	2006
Date Updated	2006
Time Period	current as of 2006
Frequency	as needed
Description	Attributes of over 1,500 mineral facilities

DOWNLOAD INFORMATION	
XML	CSV/TEXT
XLS	KML/KMZ
Shapefile	Maps
Preview	PDF

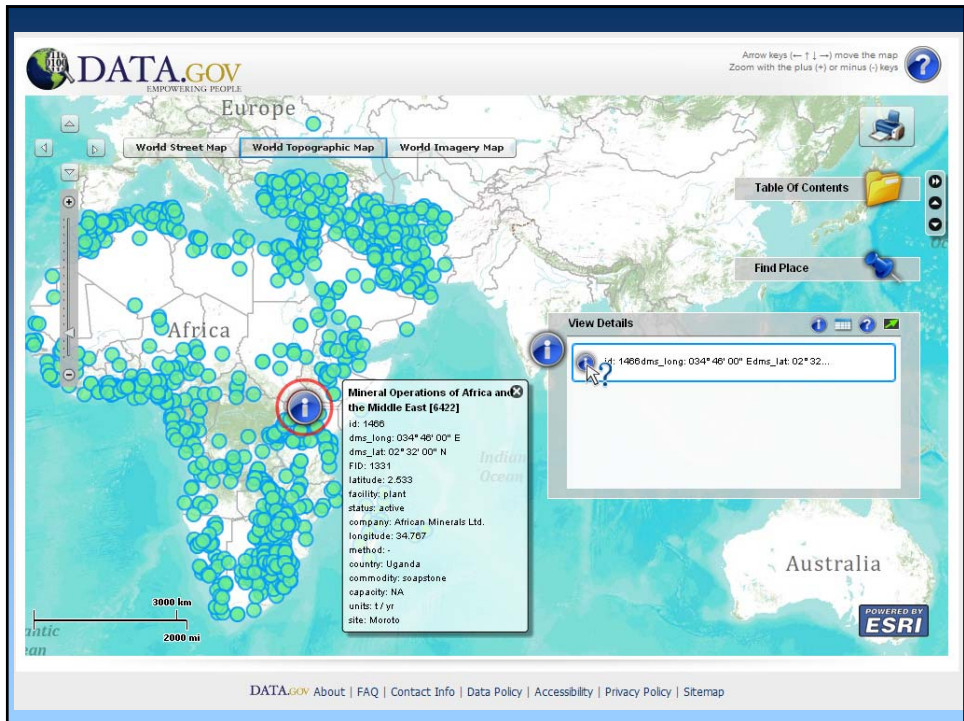
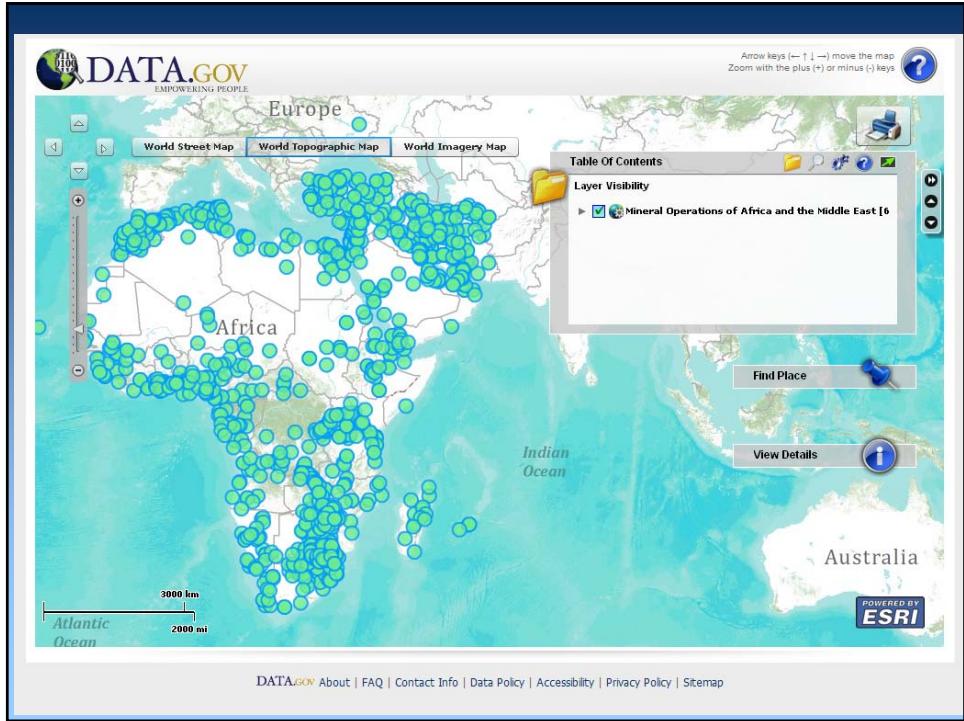
DATASET RATINGS

	Current	Your Rating [1]
Overall	★★★★★ (2 votes)	★★★★★
Data Utility	★★★★★ (2 votes)	★★★★★
Usefulness	★★★★★ (2 votes)	★★★★★
Ease of Access	★★★★★ (2 votes)	★★★★★

Comments (optional)

USGS

Note: A blue oval with an arrow points to the "Preview" button in the Download Information table, with the text "Preview button" inside the oval.



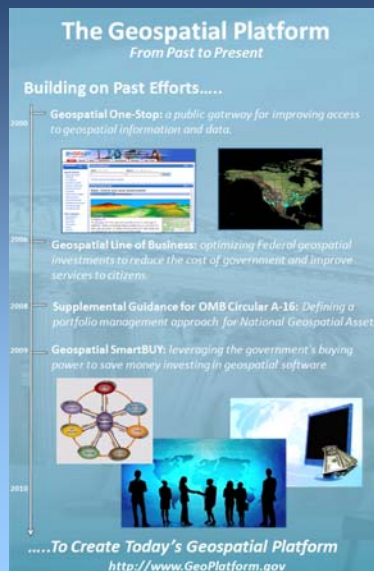
Geo & Data.gov – Next?

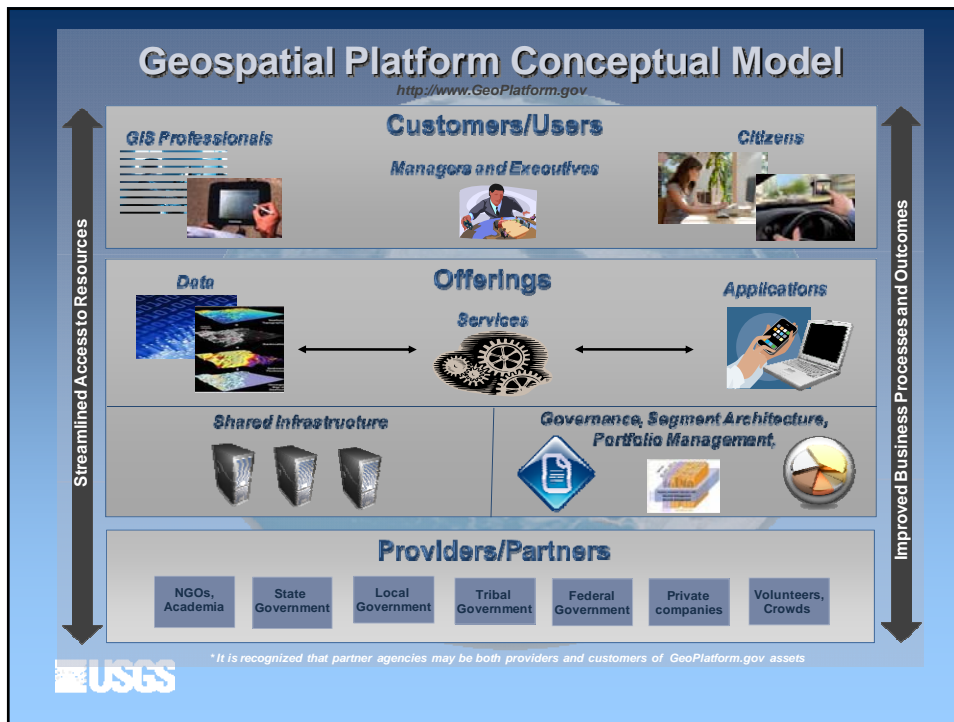
- Next steps currently under discussion
 - Spatial search as integral part of Data.gov catalog
 - Migration of GOS to Data.gov
 - Enhanced visualization tools (“professional” version?)
 - More integration of geospatial web services
 - Data hosting / services hosting



Geospatial Platform

Background





Improvements in access to National Framework Data

The National Map

Foundation: *The National Map*

- Base topographic data
 - ✓ Seamless
 - ✓ Continuously maintained
 - ✓ Nationally consistent
- Developed and maintained through partnerships
- Available on line
- Source for products and services





The National Map

- The National Map Home
- US Topo
- National Map Viewers
- Products and Services
- Partnerships
- Reading Room
- News & Events
- The National Map Corps
- National Geospatial Program
- History of USGS Topographic Maps
- A Celebration of 125 Years of Topographic Mapping

New National Map Viewer and Download Platform

Managed by the National Geospatial Program (NGP), TNM transitioned its data assets and viewer applications to newer visualization and delivery methods with foundational base maps and integrated download services.

This new visualization and download platform is based on National Geospatial Intelligence Agency (NGA)'s Palantira x3.

[Click Here to Open Viewer](#)
[Help](#) - [QuickStart](#), [Frequently Asked Questions \(FAQs\)](#), [Contact Us](#)

Can't see Flash?
Install [Flash Player](#) or view [last version](#).
Recommended Browsers:
[Firefox](#) - [Chrome](#) - [Internet Explorer 7 or higher](#)

Legacy National Map Viewers

The *National Map* is constantly evolving to incorporate newer and better data and services. Over 2010, the capabilities of these viewers will be replaced in the new viewer platform.

All *National Map* products can now be downloaded via the new *National Map Viewer*. Unless otherwise noted, legacy viewers below will remain active through the end of the year in general to allow users to transition to the new platform.



The *National Map Legacy Viewer* allows the user to interactively view *The National Map* data as a map, customize the view, and print maps. It provides public access to high-quality geospatial data and information from the eight National Data sets. Map tools allow the user to move around the map, zoom in and out, identify features, and perform other functions. The Viewer can be found at: <http://nmviewgcr.usgs.gov/>.

The New National Map Viewer

- Fast Base Map
- 100% National Map Content
- One-stop to Download National Map Data and View Services
- Direct Access to Topo Maps
- New Advanced Features



Data Sources

- *The National Map*
 - ✓ Transportation - National Transportation Dataset
 - ✓ Boundaries – National Boundaries Dataset
 - ✓ Names - Geographic Names Information System
 - ✓ Orthoimage – National Orthoimage Dataset (NAIP)
 - ✓ Elevation – National Elevation Dataset
 - ✓ Hydrography – National Hydrography Dataset
 - ✓ Structures – National Structures Dataset
 - ✓ Vegetation – National Landcover Dataset
- *Other Sources*
 - ✓ Grids and quadrangle level metadata - generated
 - ✓ High-resolution historic maps - scanned

Download Capabilities

- “What you see is what you get” experience
- One place – one service – to download all base vector, raster and graphics data products
- User can select an area of interest, multiple themes, and data formats as part of their download request
- Future download enhancements may include: more advanced area of interest functionality, file format options, coordinate transformation and feature selection



The screenshot displays the USGS National Map Viewer interface. A dialog box titled "USGS Available Data" is open, showing a list of themes and their corresponding download formats. The selected item is "Index 24K" for the area "Glenwood Springs".

Theme	Format
<input checked="" type="checkbox"/> US Topo	GeoPDF
<input type="checkbox"/> Structures	File Geodatabase 9.2
<input type="checkbox"/> Transportation	File Geodatabase 9.2
<input type="checkbox"/> Boundaries	File Geodatabase 9.2
<input type="checkbox"/> Hydrography	File Geodatabase 9.2
<input type="checkbox"/> Land Cover	GeoTIFF
<input type="checkbox"/> Elevation	GeoTIFF
<input type="checkbox"/> Orthoimagery	GeoTIFF

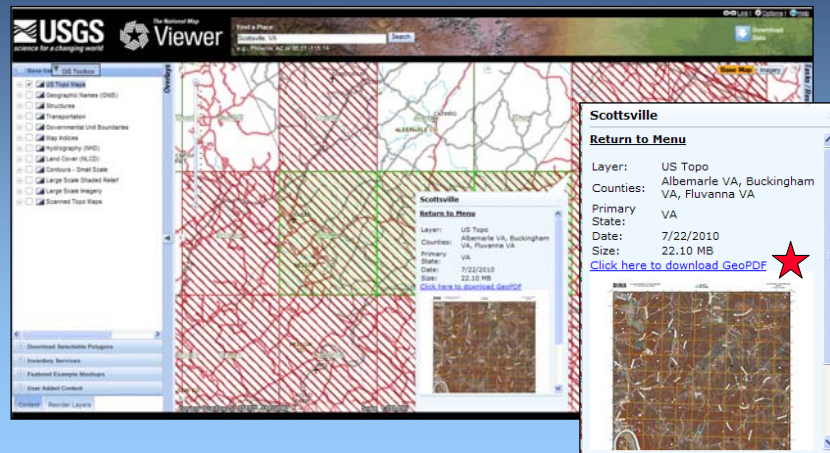
If a checkbox is disabled, the area you selected is too large. Click theme names to see theme descriptions.

Buttons: Cancel, Add to Cart

USGS logo and "The National Map Viewer" text are visible at the top of the interface. The map shows a topographic view of the Glenwood Springs area with various data layers overlaid.

The National Map Viewer

- Option to download GeoPDF quadrangle files

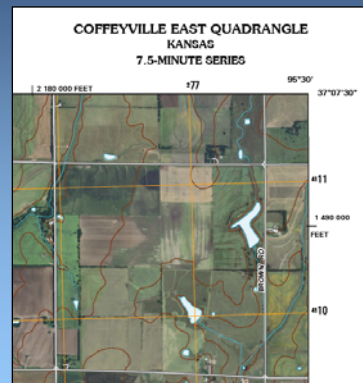


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US Topo

- A new USGS topographic map product

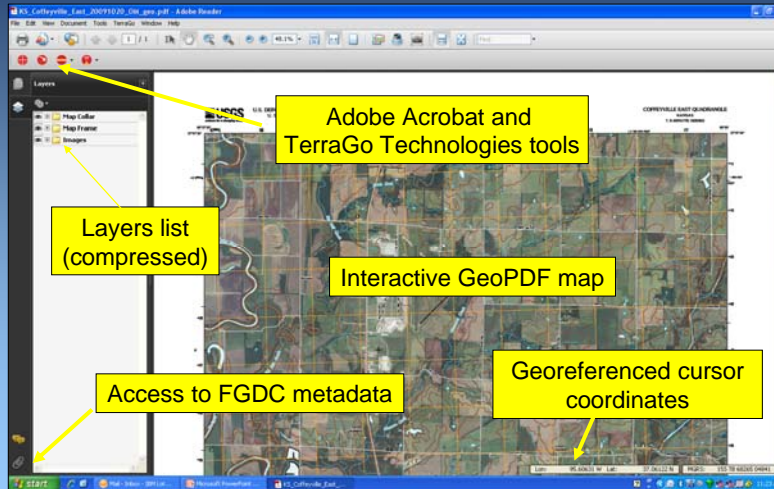
- ✓ Built from *The National Map* data
- ✓ Digital
- ✓ GeoPDF Format
- ✓ Available free on the Web
- ✓ Image base
- ✓ Core feature layers
- ✓ Regular update



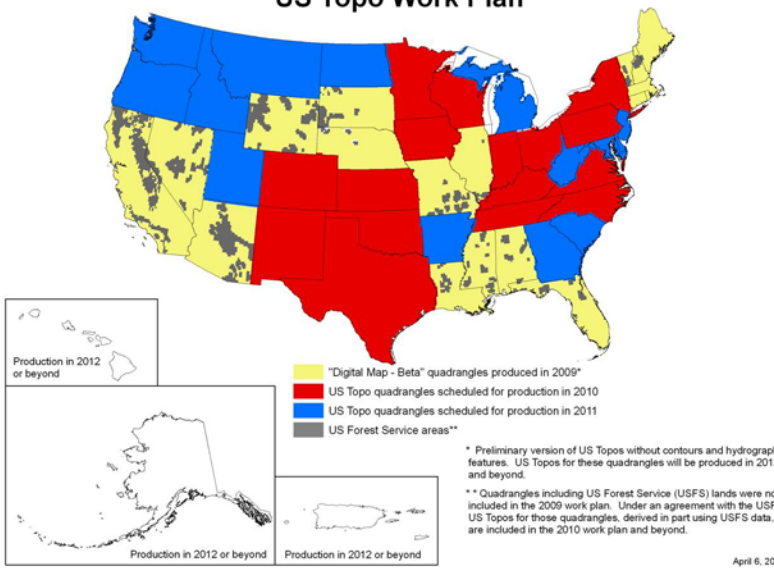
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Downloaded Map

Adobe Reader with GeoPDF Tools



US Topo Work Plan



Overlay Layer Controls and GIS Tools

The screenshot displays the USGS The National Map Viewer interface. At the top left, the USGS logo and 'The National Map BETA Viewer' are visible. A search bar contains 'deaveland' and a search button. Below the search bar, a toolbar includes 'Standard', 'Advanced', 'Annotation', and 'USGS' tabs. The main map area shows a topographic view of a region in Utah, with various geographical features and labels. On the left side, a 'Base Maps' panel is open, showing a list of map layers with checkboxes. A 'Transparency' slider is visible, ranging from 0% (Opaque) to 100% (Transparent). The bottom of the interface features the USGS logo and 'The National Map' branding.

Access to Web Map Services

The screenshot displays the USGS The National Map Viewer interface with an ArcGIS Services Directory window open. The main map area shows a topographic view of a region in Utah, with various geographical features and labels. On the left side, a 'Base Data Layers' panel is open, showing a list of map layers with checkboxes. The ArcGIS Services Directory window is titled 'geonames (MapServer)' and provides information about the service, including a service description and links to view the service in different applications. The bottom of the interface features the USGS logo and 'The National Map' branding.

Integrated Inventory Status

USGS science for a changing world The National Map Viewer

Find a Place (e.g., an Address, City, or Place) Search

e.g., Phoenix, AZ or -115, 14 36 17

Base Map Imagery

Overlays

Base Data Layers GIS Toolbox

Download Selectable Polygons

Inventory Services

- Structures - Law Enforcement Facilities
- Structures - Schools by County
- Transportation, Roads - Census Lo
- Transportation, Roads - Upper Cens
- NHD High Resolution - Vintage by Q
- NHD High Resolution - Subbasin Re
- NHD High Resolution - Subregion M
- NHD Medium Resolution - Subbasin
- NAP Imagery - Vintage Date Range, Y
- NAP Imagery - Lower Date Range (Y
- NAP Imagery - Multiple Images Per C
- NAP Imagery - Vintage Date Range, Y
- NAP Imagery - Upper Date Range (Y

Featured Example Mashups

User Added Content

Content Reorder Layers

NHD High Resolution - Vintage by Quad

Quad ID = 43422
Quad Name = Strasburg SW
Vintage Date - Year = 1994

Cursor Position 39.97439° -104.42984° Scale 1:1,622,524



Create Your Own Mash-ups

USGS science for a changing world The National Map Viewer BETA

Find a Place (e.g., an Address, City, or Place) Search

e.g., Phoenix, AZ or -115, 14 36 17

Options Help

Link

Overlays

GIS Toolbox

Base Map Topo/Shaded Imagery Imagery-Hybrid

Multiple Identify Results Found - Please Select One

- Terrestrial Ecosystems : 250
- Topographic Moisture Potential
- Land Surface Form
- Surficial Materials Lithology
- Ecolow/Imagery : 95

USGS

The National Map

USGS science for a changing world

The National Map Viewer

Find a Place: Search

e.g., Phoenix, AZ or -115, 14 36, 17

Base Map: Imagery, Shaded Relief

Overlays:

- Base Data
- GIS Toolbox
- Download Selectable Polygons
- Inventory Services
- Featured Example Mashups
- USGS Ecosystems
- USGS US Hazards
 - Floods
 - U.S. Volcanoes
 - Other Volcanoes
 - Earthquakes
 - Hurricanes
 - Wildfires
 - Wildfire Perimeters
- USGS Hazards Info
- USGS Hazards & Warnings
- NEXRAD Weather

User Added Content

Content Reorder Layers

Cursor Position 39.05104° -115.56822° Scale 1:118,489,299

Read viewer.nationalmap.gov

USGS 45

Add Other Map Services

USGS science for a changing world

The National Map Viewer BETA

Powered by Palantira x3

Find a Place (e.g., an Address, City, or Place): Search

e.g., Phoenix, AZ or -115, 14, 36, 17

Options Help

Link

Base Maps

Base Data Layers

Download Selectable Polygons

Inventory Services

Emergency Operations

Popular National Services

User Added Content

Active Tool: None (Map Navigation)

Standard **Advanced** Annotation USGS

Imagery (Slow) Topo (Future)

Tasks / Routes

Add Data

Connect to ArcGIS Server

ArcGIS Server

REST Uri:

Example: <https://palanterra.nga.mil/rest/services>

Classification

Unclassified

Confidential

Secret

Top Secret

Caveats:

Server Content

Content Reorder Layers

Cursor Position 49.7870088804° -122.1890944995° Scale 1:118,489,299

USGS **The National Map**

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