Understanding MapShop

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Contents **Page**

Overview 1

The MapShop Bundle: Service, Data, and Training 1
Functionality 2
MapShop Can Find Any Place 2
Newsworthy Data From Reliable Commercial and Government Sources Is Updated Regularly 3
Control the Look and Feel of the Map 3
File Formats Supported by MapShop 3

Frequently Asked Questions 4
Who Is ESRI? 4
What Is GIS? 4
Does It Matter What Computer Platform I Am Using? 4
What Versions of Netscape Communicator and Internet Explorer Does MapShop Support? 4
Can I Edit the Maps I Create in Illustrator or FreeHand? 4

MapShop and ESRI Software Can Be Used Throughout a News Organization 4

A Valuable Tool for the Investment 5

More About the Data Providers 6

How the Biggest Newspaper in the United States Uses MapShop 8

Understanding MapShop

Overview

MapShop is an online mapping system developed by ESRI in conjunction with The Associated Press (AP). It provides journalists with timely access to geographic data from faraway places and nearby neighborhoods and it tells them about those places.

- What is the terrain like?
- Where is the floodplain?
- What is the population density?
- Who lives there?
- What does it look like?

MapShop can find an area of interest through a search function, a U.S. address finder, latitude/longitude coordinates, or by zooming to the desired area of a map. Once the area is selected, the user can add layers of contextual geographic information such as boundaries, roads, rivers, towns, satellite imagery, census variables, fault lines, or shaded relief. Design style preferences also can be stored so maps can be regenerated again and again, each time in a unique cartographic style.

The final map graphic can be downloaded to the desktop in any number of available formats, which can be opened in FreeHand, Illustrator, PhotoShop, or ArcGIS™. Further editing of the design or the data can be done in Illustrator, FreeHand, or ArcGIS.

The MapShop Bundle: Service, Data, and Training

With a subscription, anyone in the newspaper—from the newsroom to the graphics department to the circulation department—can have access to this online mapmaking tool and all of the data it includes. Users receive ArcView® with a subscription and can buy other ESRI® products at a discount. ArcView is the world's most popular desktop mapping and geographic information system (GIS) software. It allows users to create maps and add data to them. The software is used by computer-assisted reporters and graphics editors to illustrate complex stories in illuminating ways.

Users of ArcView 8.x can download MapShop to their desktop. Basemap data exported from MapShop can be integrated with local crime data or other information that is important to telling a story.

The value of the data included in a MapShop subscription is more than $500,000. Following is a list of the data found in MapShop.

- **Commercial Data Providers**
  - Chalk Butte: Shaded relief
  - Geographic Data Technology, Inc. (GDT): U.S. street-level maps

- WorldSat: World topography including the ocean floors
- Meteorlogix: Live weather
- ORBIMAGE: Satellite images
- ESRI Business Information Solutions (ESRI BIS): Demographic data
- ESRI: Basic world geography
- East View Cartographic: Iraq and hot spots
- GlobeXplorer: Imagery for the world—300 terabytes (This is a premium MapShop service with aerial imagery from AirPhoto and Kodak, among other providers.)

■ **Government Data Providers**

- United States Geological Survey (USGS): Grayscale shaded relief, recent and historic earthquakes
- U.S. Environmental Protection Agency (EPA): Toxic release inventory sites, Superfund sites
- National Oceanic and Atmospheric Administration (NOAA): Windstorms, hailstorms, tornado touchdowns, hurricane paths
- Federal Emergency Management Agency (FEMA): Flood zones
- U.S. Census Bureau

Functionality

MapShop Can Find Any Place

Users define the area to map by searching for a city, state, country, U.S. intersection, or latitude/longitude coordinates. Users can also zoom directly to the desired area on a world map. Once the area is selected, users add layers of information such as boundaries, roads, rivers, towns, satellite imagery, or shaded relief.

- Locate a street address anywhere in the United States.
- Match latitude/longitude.
- Zoom interactively to the location you want.

Newsworthy Data From Reliable Commercial and Government Sources Is Updated Regularly

Map layers include not only basic political boundaries, roads, and waterways but topographic relief, satellite images, and vegetation maps. When a natural disaster strikes, users will be able to show more than just where it happened by overlaying information about fault lines, previous earthquakes, or the path of a hurricane, to name a few.

The system contains an abundance of information about the people inhabiting the planet and their habits. Population, income, election data, and other types of data are available in the MapShop system.

ESRI has gathered the most accurate data available for the price, updating information as it is collected. MapShop subscribers can find out how the data was gathered, who gathered it, and when it was gathered by reading the "metadata" file. The data is drawn from a variety of sources including the U.S. Census Bureau, USGS, and NOAA.

- Best U.S. street network available from GDT
- Boundaries for cities, Minor Civil Divisions (MCDs), and urban areas
- U.S. Census 2002 data
- Annually updated demographic statistics
- Congressional boundaries

Data is updated quickly.

- Street data is updated quarterly.
- Census data was updated on the day of the public release.
- Iraq data from East View Cartographic.

Control the Look and Feel of the Map

Basic design preferences can be stored in MapShop. The color palette, line color, line weight, and font preferences can be set by the art director and used by everyone on the staff each time they create a map. Styles can be overridden on a map-by-map basis. Save views of maps commonly needed so that you can use them again and again.

File Formats Supported by MapShop

With MapShop you can output maps in the following graphic formats: EPS, GIF, JPEG, PNG. You may also export maps in shapefile format for use in ArcView. The EPS file format can be opened and edited in FreeHand or Illustrator. All of the layers will be intact and editable. Your color palette is downloaded with the map. The text is completely editable. Image files, such as relief and satellite imageries, are 200 dpi TIFF files.

Frequently Asked Questions

Who Is ESRI?

ESRI has been the world leader in the GIS software industry for more than 30 years. As the leader in GIS technology, ESRI offers innovative solutions that will help users create, visualize, analyze, and present information better and more clearly. Organizations around the world, as well as local, state, and federal government agencies, are using ESRI GIS software. ESRI provides powerful GIS solutions to more than 300,000 clients in more than 189 countries. In fact, ESRI is leading the industry in providing mapping technology that meets today's global needs. ESRI offers GIS solutions to help you unlock the spatial component of your valuable data and see your organization's information from a new perspective.

What Is GIS?

A geographic information system is a fundamental digital mapping system made up of computers, software, and data. GIS takes words and numbers from spreadsheets and puts them onto a map, making it easier to see patterns and interpret trends in data. MapShop is a Web-based GIS. ArcView is a desktop-based GIS.

Does It Matter What Computer Platform I Am Using?

No. Since MapShop is Web-based, it does not matter if you are on a PC or Macintosh. MapShop will work on both platforms.

What Versions of Netscape Communicator and Internet Explorer Does MapShop Support?

MapShop runs on these browsers for the PC: Internet Explorer 5.5 and 6.0 and Netscape Communicator 6.2 and 7.0. MapShop runs on these browsers for the Macintosh: Internet Explorer 5.0 and 5.1 and Netscape Communicator 6.1, 6.2, and 7.0.

Can I Edit the Maps I Create in Illustrator or FreeHand?

Yes. Each of the vector layers you use to create a map in MapShop will appear as a layer in Illustrator or FreeHand. Users can change the color or style or move the lines, points, or polygons. Any terrain or imagery will be downloaded as a 200 dpi TIFF. The color palette will be downloaded and will show up in your color selection list. The fonts you chose in MapShop can now be seen on your map.

MapShop and ESRI Software Can Be Used Throughout a News Organization

ArcView and ArcInfo™ users can download MapShop data to use throughout the organization.

- **Editorial Applications**

  - Conducting analysis of the data to create more sophisticated maps. It is possible to answer questions such as the following: What is the population density of the place where the earthquake struck? What is the terrain like where the plane crashed? What type of people live in the area where crime is occurring?

  - Joining with local data sets to create unique maps. By downloading census data from MapShop, a user could create a three-dimensional representation of the data in ArcView with ArcView 3D Analyst™.

- Supporting Computer-Assisted Reporting (CAR) and investigative reporting analysis of data. CAR reporters would have access to information on up-to-date demographic statistics for use in their reporting.

■ **Business Applications**

- Conducting GIS analysis of demographic data for marketing. Marketing departments can download the demographic data from MapShop and marry it with their subscriber database to analyze what areas they are strong in and where there are demographically similar areas that they are not as strong in. By doing so, the newspaper can use its resources more efficiently.

- Promote and sell advertising. Ad sales staff can show potential clients that in their coverage area there are concentrations of households that buy a variety of things from shoes to motor oil.

- Joining with advertiser data to create business locator maps. Locator maps of new businesses could easily be created as an incentive for ads—a great incentive to spend money with your newspaper.

- Joining with real estate listings to create classified maps. Papers that have local real estate guides or apartment finders might be able to charge for the service of adding a map locating the home for sale or the apartment for rent. The maps can be created by a clerk in moments using MapShop.

A Valuable Tool for the Investment

MapShop offers both hard cost savings as well as soft cost benefits for the editorial and graphics departments.

■ **Productivity Gains**

Making a map from scratch is a time-consuming process, especially if an artist cannot find the appropriate archived map base. Too often the area of interest is just outside the coverage area or the right map was not well named and cannot be found. MapShop allows you to generate a new map with a more precise view, layer in new data, and output in your paper's style in a fraction of the time it would take to place it on the map manually. Assuming an average production time of 30 minutes per map using MapShop, this represents a savings of two hours per map. At an estimated average hourly rate of $25 per hour, MapShop saves the organization $62.50 per map. If only one map is produced daily within the graphics department, that represents a savings of more than $22,000 in labor time over the course of the year.

■ **Leveraging Design Resources**

Most newsrooms are trying to find ways to stretch resources even further without cutting quality. When artists are spending time on locator maps, they are not working on illustrations or diagrams or more sophisticated map projects. MapShop enables art departments to keep the simple things simple. Locator maps are commonplace but time-consuming. MapShop cuts that time to the minimum. Additionally, MapShop can help stretch precious design resources even further.

Even when the graphics department is not staffed, a map can be created by a layout editor to accompany a breaking news story.

- **Building It Once for All Sizes of Publications**

  MapShop is flexible enough to be used by a newspaper with a circulation of 1,000 or one with as many as one million readers. In the past few years, more than a million dollars was invested in improvements to MapShop. ESRI will continue to build and improve the service. For organizations contemplating the value of this service versus building their own system, the investment could include

  - **Estimated Support Costs**

    Costs for the database server and Web server hardware $50,000
    Costs for the database software and Web server software $20,000
    Costs for ESRI's ArcIMS® and SDE® software $30,000
    Maintenance costs on the software ..... $10,000+ per year
    Salary of a database administrator (DBA)
    to maintain the system..... $75,000+ per year
    Training of a DBA in ESRI's serverside technology $10,000

  - **Value of MapShop Components**

    GIS data .....more than $500,000
    GIS software ..... up to $24,000
    Maintenance and staff training.....$50,000 per year
    Total Cost of Building Equivalent System.....more than $600,000
    Total Cost of Annual Maintenance/Personnel .....more than $100,000

More About the Data Providers

Chalk Butte
U.S. topographic, shaded relief

Chalk Butte creates two- and three-dimensional full-color shaded relief maps from digital elevation models. These raster images provide detailed topographic basemaps that can be overlaid with scientific and GIS vector data sets. MapShop subscribers have access to the full shaded relief data set for the United States that can be used for newspaper maps where detailed topographic control is needed.

Geographic Data Technology
U.S. street-level maps

Founded in 1980, GDT was a pioneer in the development of cartographic data for business use and continues to provide complete, current, and comprehensive map databases. GDT provides street, postal, census, and other geographic databases that stretch from Canada to Argentina. In addition, GDT offers geocoding, mapping, and spatial data integration services for new and existing GIS users. MapShop subscribers have access to street coverage for the United States and Canada that can be used for geographic analysis and mapmaking.

WorldSat International Inc.
World topography including ocean floors

WorldSat International Inc. was incorporated in 1987 with the express mandate to create consumer-based products from satellite imagery. Since that time, WorldSat has introduced a number of cloud-free composite images of earth that illustrate world digital elevation data with shaded relief as well as ocean bathymetry. These products have been used by businesses, media, and other parties for the production of specialty products, advertising, and publications. MapShop subscribers have access to WorldSat's beautiful 2-km resolution earth imagery as a backdrop for editorial content.

ESRI
Basic world geography

ESRI focuses on publishing two important types of data sets: (1) data sets that provide the basic data needed as a framework for building a GIS database, and (2) data sets that help people learn about GIS and GIS data. Through MapShop, subscribers have access to ArcWorld™, ArcAtlas™, and enhanced Digital Chart of the World (DCW) data.

ORBIMAGE
Imagery

ORBIMAGE provides earth imagery products and services with five digital remote sensing satellites complemented by data from other optical, aerial, and radar sources. The combination of earth imaging satellites, aerial data sources, and delivery processes are transforming the way people around the world access and use imagery information. MapShop subscribers have access to ORBIMAGE's OrbView Cities product line of high-resolution, one-meter panchromatic imagery of some of the world's leading metropolitan areas. This imagery is useful in providing a "real life" map of a news event that helps readers visualize a news story.

ESRI BIS Marketing Systems
Demographics for the United States

ESRI BIS has been providing thousands of organizations—large and small—with valuable demographics data for more than one-quarter of a century. It offers the information needed to analyze a geographical area based on demographics. Demographic data can also be used to improve business planning and reduce marketing costs. Through MapShop, subscribers have access to household and lifestyle demographic variables.

Meteorlogix
Weather

Meteorlogix, the world's largest commercial weather service provider, provides Internet-ready data, forecast services, turnkey solutions, and weather display systems to more than 20,000 businesses. Meteorlogix has developed a system that provides an extensive suite of value-added weather data in ESRI GIS data formats. This represents the first time that a comprehensive suite of high-quality, commercial-grade weather information from worldwide sources has been made available via the Internet to mapmakers, making it

possible to immediately integrate live weather information into their hard-copy maps and online applications. Through MapShop, subscribers will have access to precipitation weather information (rainfall, snow, and other) for the United States plus surface observation data for the whole world.

How the Biggest Newspaper in the United States Uses MapShop

USA TODAY Adopts MapShop
By Paul Overberg, Database Editor, USA TODAY

As it marks its 20th anniversary on September 15, *USA TODAY* can point to a legacy in print design, especially in newspapers. In particular, it has influenced news cartography. Since its inception, the *USA TODAY* weather map—the entire country rendered in color and perspective—has been acknowledged by frequent imitation as a major advance.

The five million people who read the newspaper and the 250,000 unique daily visitors to its Web site also get news from rich visual media such as TV and the Web. That is why *USA TODAY* is always seeking ways to create richer graphics without sacrificing speed or clarity. Mapping presents one of the biggest opportunities—and challenges—to compress meaning into a small space so that it can still be extracted easily.

With that hope, *USA TODAY* started testing MapShop in December 2001.

The program, a browser-based map design tool, was developed jointly by ESRI and The Associated Press, a news gathering cooperative run by its 1,550 daily U.S. newspaper members. Its photos, data, and stories reach nearly a billion people every day through newspapers; 5,000 U.S. radio and TV stations; and more than 8,500 newspaper, radio, and television subscribers in 112 countries. ESRI hosts the service while The Associated Press markets it.

News cartography has long placed a premium on speed and clarity. This reflects the historic focus on speed in newspaper journalism, the technological limits of ink on cheap paper, and users' expectations that information will be conveyed so clearly that it can be understood with just a glance. That emphasis has been challenged by the advent of GIS technology in newsrooms and the maturation of news Web sites, which allow the use of visually rich media and even interactive mapping.

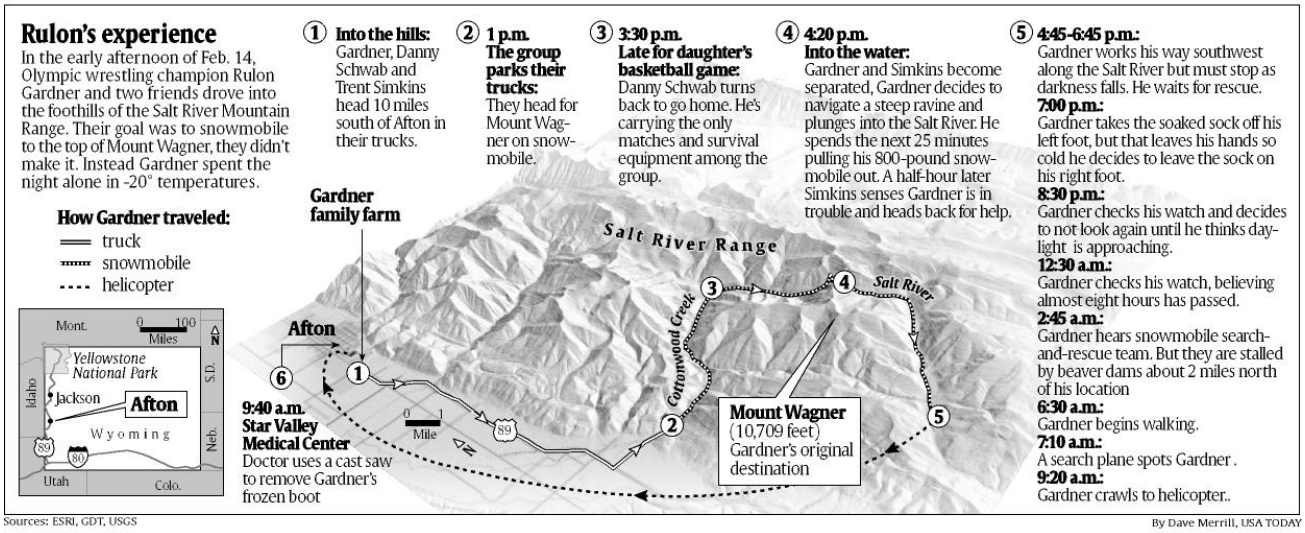
As the war in Afghanistan began in late 2001, the prospect of U.S. soldiers fighting in and over Afghanistan's torturous terrain meant that *USA TODAY*'s artists would have to produce many maps that would convey the ruggedness of the country and unified air–ground operations. At the same time, the graphics staff was gearing up to produce a series of elaborate maps and informational graphics to illustrate the 2002 Olympic Games in the mountains around Salt Lake City.

Both cases seemed to demand shaded terrain maps. But *USA TODAY*'s graphics staff found shaded terrain maps so time-consuming that it implemented them only for long-term projects. The department had no GIS capability, and the three *USA TODAY* analytical journalists who used GIS focused on simple thematic mapping. The graphics department has relied on a variety of software and mapping packages to produce maps including commercial Web-based sources for digital elevation layers.

Against this backdrop, several artists from both *USA TODAY* and USATODAY.com agreed to test MapShop in December 2001 and liked what they saw. In particular, it

seemed to offer an immediate solution for producing shaded terrain maps quickly. Dave Merrill, the newspaper's primary cartographer, realized that MapShop offered the distinct advantage of providing shaded terrain with georeferenced layers such as streets, boundaries, and landmark points. He quickly used this for a major task at hand—producing a series of maps of the Olympic venues for both the newspaper and USATODAY.com.

Merrill also used MapShop for some shaded terrain maps of Afghanistan and even for maps where a sense of terrain was important but where the effort could not be justified before. One example is the route across rugged Wyoming terrain that Olympic medal-winning wrestler Rulon Gardner followed last winter when he became lost and so frostbitten that he eventually lost a toe.



Sources: ESRI, GDT, USGS

By Dave Merrill, USA TODAY

MapShop lets an artist racing the clock enrich even tiny images with simple, clear details that add meaning. For instance, Merrill cited a small locator map he created for an article about work to stem environmental damage from this year's western wildfires. The map, published in black and white in six square inches as part of a larger illustration, was assigned just four hours before it was due, while Merrill was already handling another map that was due even sooner. MapShop let him assemble in a few minutes a variety of layers that he often stitches together from several sources.

- Interstate highways and arterial streets in Denver, Colorado
- Denver's Cheesman Reservoir and the boundary of Pike National Forest
- A custom basemap frame of several western states and their major cities, rivers, and interstate highways, with spellings he could trust

For most of its users, MapShop is not GIS. That is important because newsrooms have little or no GIS infrastructure, either technological or human. But MapShop represents the first GIS application attuned to the unique demands of news media: speed, ease of use born of its own well honed design, and cartographic and output flexibility.

For more than 30 years ESRI has been helping people manage and analyze geographic information. ESRI offers a framework for implementing GIS technology in any organization with a seamless link from personal GIS on the desktop to enterprisewide GIS client/server and data management systems. ESRI GIS solutions are flexible and can be customized to meet the needs of our users. ESRI is a full-service GIS company, ready to help you begin, grow, and build success with GIS.

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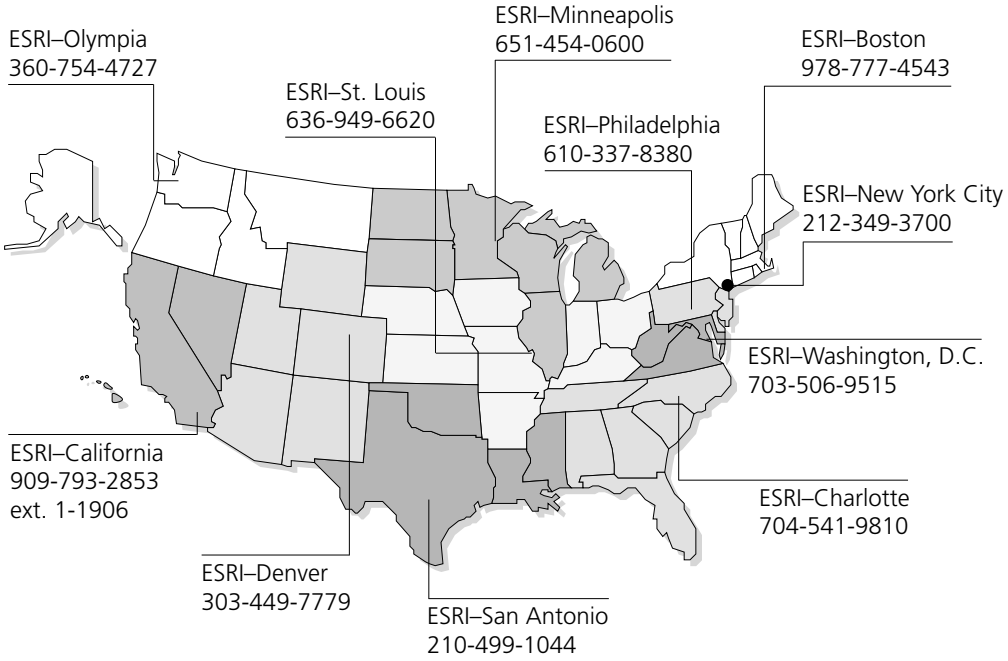

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