



AN ESRI
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How Web GIS Supports a Water Utility

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Executive Summary

The web has changed everything, and geographic information system (GIS) technology is no exception. GIS has benefited greatly from the paradigm of connectivity and the momentum that the web has generated. The web has unlocked the power of GIS. It has put GIS into the homes of millions and into the hands of billions and made it usable across all industries.

Water utilities can greatly benefit by adopting the ArcGIS® platform and implementing Web GIS. This technology provides affordable and easy-to-use solutions that can be accessed across the organization anytime, from any device.

What Is Web GIS?

Web GIS is a new pattern for delivering GIS capabilities through maps on the web, allowing people everywhere to access and use geographic information. These maps are available on desktops, the web, tablets, and smartphones for a sophisticated range of activities to apply geography to business. Esri's ArcGIS platform enables organizations to launch Web GIS.

Web GIS now brings analytics to spatial data in a way that wasn't possible before. Previously, spatial data had to be processed, modified, and extracted in order to answer a predetermined set of questions. Now, the data is transformed into web maps or services that are mashed up with different data layers, which provides flexibility so that users can answer a wide range of possible questions.

Web GIS is delivered to users in a flexible and agile workflow. It reduces the need to create custom applications, provides a platform for integrating GIS with other business systems, and enables cross-organizational collaboration. Web GIS allows organizations to properly manage all their geographic knowledge. To see what Web GIS can do for a water utility, check out this amazing [video](#).

What Can Web GIS Do for a Water Utility?

The days of GIS being an editing and mapmaking function for a small group of technical users at a utility are gone.

Web GIS opens up location information and intelligence to everyone at the utility. The entire organization can contribute to the completeness and accuracy of the data. Field crews are ditching paper maps and redundant data entry processes in favor of simple task-focused apps on smartphones and tablets. Engineers and modelers are transforming raw data into actionable information, unlocking data from their desktops and easily sharing results across departments. When system issues arise, customer service representatives are being notified before customers call. And most importantly, Web GIS is providing real-time situational awareness to managers and supervisors as activities unfold, facilitating timely and accurate decisions.

At the heart of Web GIS is Esri's portal technology. ArcGISSM Online is Esri's secure cloud, and Portal for ArcGIS can be deployed in your own environment. ArcGIS Online is a mapcentric content management system that allows everyone at your utility to discover, use, make, and share maps on any device, anywhere, anytime. Web GIS puts geography into the hands of your staff.

Why Implement Web GIS?

Web GIS provides the flexibility to manage your data in a connected desktop environment and the cloud. It is also able to connect your systems to deliver best practices for the following:

- Data Management
- Spatial Analysis
- Mapcentric Content Management
- Real-Time Data Feeds

Data Management

ArcGIS provides a complete set of tools that give you the flexibility to store, edit, and manage data in a way that fits with your existing processes. These include tools to define data rules and relationships, conduct quality control and assurance, and integrate data with other business systems.

Spatial Analysis

ArcGIS gives you spatial analysis tools on the desktop and the web. ArcGIS helps you understand where your customers and assets are, how they relate, what the data means, and what actions to take. Conduct analysis to detect and quantify patterns for considerations such as customer demand or infrastructure failures, find optimal routes for your field staff to save time, and analyze your infrastructure data to make the best capital investment decisions possible. You can also create, visualize, analyze, and communicate your data in 3D.

Mapcentric Content Management

With Esri's Web GIS platform, everyone will have access to Esri's mapping portal and content management system. The portal unlocks a multitude of configurable apps for the field, the office, and the community, as well as a suite of app builders that will allow you to create your own apps.

Real-Time GIS

You can take advantage of Esri's powerful integration technology and push live feeds from SCADA, AVL, AMI, and other telemetry systems right into your maps. Esri's real-time GIS provides configurable integration using standard industry data formats, making it easy to turn your organization into a real-time utility.

Benefits of Web GIS

Esri's Web GIS platform can help you meet many of the common business challenges of water utilities such as sustainable management of infrastructure, water loss and cost recovery, emergency preparedness and response, capital expenditure planning and financing, and communication and transparency with customers. The ArcGIS platform will help your utility be more informed and collectively act faster, ultimately saving you money, increasing productivity, capturing more revenue, and enhancing your level of service.

Today, Web GIS is deployed differently than it was in the past. Using an agile approach, water utilities are getting up and running quickly by configuring solutions and avoiding customization. At a high level, the framework for this implementation strategy is to understand and prioritize the business needs, deploy the Web GIS platform, and then use an iterative approach to selecting and deploying applications to fulfill the prioritized needs. This approach reduces both the cost and the time to deploy the system, providing a faster and greater return on investment. For more information on best practices deploying a Web GIS platform, see our white paper [Implementing ArcGIS for Water Utilities](#).

Web GIS is allowing utilities to deploy solutions faster, minimize or eliminate customization, put GIS into the hands of their entire staff, and understand their system in a way that wasn't possible before. [Take a look](#) at how other water utilities are experiencing an amazing return on their investment across the country.

Why Choose the ArcGIS Platform?

Esri is the global market leader in GIS. The ArcGIS platform offers the most powerful mapping and spatial analytics technology available. Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Esri engineers the most advanced solutions for digital transformation, the Internet of Things (IoT), and location analytics to create the maps that run the world.

Esri has supported water utilities since 1989. Since then, Esri has continued to improve the technology and develop solutions that are specifically designed to support water utilities. Today, the ArcGIS platform and Web GIS continue our efforts with the following:

Ready-to-Use Data and Maps

The ArcGIS platform comes with ready-to-use maps including a suite of basemaps that provide reference for your work and high-resolution imagery that allow you to visualize what is on the ground surrounding your infrastructure. You also get access to a variety of other maps including demographics, boundaries, elevation, and landscape layers.

Preconfigured Water Utility Solutions

Quickly put Web GIS into action with ArcGIS for Water Utilities, a set of solutions that meet common water utility business challenges and infuse location into typical water utility workflows. These solutions are included with your ArcGIS license and reduce the cost, time, and complexity to solve common water utility problems.

Flexible Deployment Options

You can deploy Esri's Web GIS any way you want. In a full software-as-a-service (SaaS) environment, you can get up and running quickly, because ArcGIS is hosted by Esri 24/7. If you have the time, skills, and environment, you can run ArcGIS completely within your infrastructure. Most commonly, water utilities use a hybrid approach, whereby some content is maintained on-premises and some in the cloud.

Expert Help with Implementation

You don't have to implement Web GIS all on your own. Esri has several options to provide you with assistance. You can use Esri's jump start packages to assist with data preparation, install and configure software, and launch your Web GIS system including app configuration to support your utility's daily tasks and workflows. For a more comprehensive approach, you can subscribe to the Esri Enterprise Advantage Program, a flexible framework of services, training, and premium support to help your organization reach its full GIS vision. And if desired, Esri can also manage your deployment in the cloud for you.



Esri, the global market leader in geographic information system (GIS) software, offers the most powerful mapping and spatial analytics technology available.

Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75 percent of Fortune 500 companies, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, the Internet of Things (IoT), and location analytics to inform the most authoritative maps in the world.

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