



CSC

GEOSPATIAL SOLUTIONS

MODERNIZING THE UNIVERSE OF GEOSPATIAL DATA

The ability to regulate, collect, analyze and provide access to up-to-date, accurate and reliable information about the geographic features of the Earth — to effectively manage geospatial data — is critical in enabling EPA to fulfill its mission of protecting human health and the environment. Stakeholders use geospatial data in a variety of ways, including increasing their knowledge of environmental conditions and geographic features to avoid or mitigate environmental risks.

Improving Data Access and Sharing for Better Decision Making

In the past, paper-based methods of managing geospatial data often resulted in environmental decisions based on outdated information. Paper submissions were labor-intensive, costly and error-prone. Since many environmental issues don't stop at

state boundaries, it was clear to EPA decision-makers that new ways of exchanging geospatial data were needed to improve information used by environmental workers to make critical decisions.

As agency stakeholders embarked on a journey to find more efficient ways of submitting, using and sharing geospatial data, EPA asked CSC to play key roles in projects that leverage the capabilities of EPA's Central Data Exchange (CDX) — for which CSC serves as the prime support contractor with partner Innovate, Inc. — to enhance environmental decision making.

Using ESRI's ArcCataloging and GIS Portal Toolkit to develop the GeoData Gateway and Metadata Editor with a new architecture, CSC and Innovate, Inc., enabled stakeholders to easily publish data to the central catalog or

With partner Innovate, Inc., CSC has consistently supported EPA's efforts to create technology tools and set standards that help the public, as well as agencies across the Federal Government, quickly locate and productively use geospatial data. More accurate data, more efficient data sharing, greater EPA staff productivity and efficiency and recurring cost savings have resulted from our contributions to the GeoData Gateway, the Metadata Editor and the Geo-Finder initiatives.



**Benefits to Facilities**

- *Increases access to and promotes better use of EPA's geospatial resources*
- *Enables sharing of geospatial information across Federal and state agencies*
- *Saves EPA \$200,000 annually on costs of metadata management*
- *Meets Federal and interagency requirements for contributing to Geospatial One-Stop*

have it automatically exchanged and synchronized across repositories. The result? With common methods for tagging data, stakeholders can share data easily within EPA and other agencies, while fully meeting federal metadata standards. Details of these projects and specifics of the Geo-Finder for the Environment initiative follow.

The GeoData Gateway: Improving Access to Agency Resources

Even the highest-quality data loses value if users can't find it quickly and easily. To address this challenge, CSC personnel were key members of a team that implemented the GeoData Gateway and integrated it within the agency's Enterprise Portal. The integration effort provided seamless access to agency resources across enterprise systems, leveraging the common Identity and Access Management (I&AM) System based on Oracle's COREid.

Today, the GeoData Gateway serves as EPA's central access point for geospatial resources, providing users with a mechanism to search for, access and manage geospatial information. As a result, users now enjoy vastly improved access to the agency's distributed geospatial assets and convenient single sign-on for these two key components of the agency's enterprise architecture.

The Metadata Editor: Creating Compliant Metadata Faster

Not long ago, EPA incurred significant costs and staff hours to manage the quality and accuracy of thousands of geospatial metadata records. Today, EPA Metadata Editor enables users to quickly develop high-quality geospatial metadata and make it readily available to others. Working closely with EPA stakeholders, CSC and Innovate, Inc., played a major role in the design and development of this robust, highly effective tool. Developed as an ArcGIS extension, it extends the functionality of the ArcCatalog interface. With an engaging visual interface and helpful features including spell-check, the Metadata Editor creates enterprisewide consistency of geospatial data while saving EPA an estimated \$200,000 annually.

Compliance has also become easier. Whereas users once relied on multiple commercial off-the-shelf (COTS) editing packages, none of which met every agency requirement, EPA staff members now use the Metadata Editor's validation tool to check and edit records — before submitting them — for full compliance with EPA specifications and EPA/FGDC requirements.

Designed for maximum flexibility that accommodates use by external parties, the Metadata Editor also enables EPA to responsively fulfill requirements for the sharing of interagency geospatial assets. To date, the Metadata Editor has been downloaded over 1,800 times by users across multiple Federal, state and local organizations.

The Geo-Finder for the Environment: Easing Data Exchange

One of EPA's priorities has been to improve the sharing of geospatial information with states. To that end, the Geo-Finder is a Web-based geospatial search and discovery tool that eases geospatial data exchange. This tool leverages Web services provided by the EN to connect to distributed metadata catalogs and enable access to geospatial assets hosted by EPA and its state partners.

As part of an integrated project team, CSC personnel lead the geospatial data discovery effort, working with team members to define use cases and requirements, develop the geospatial data discovery tool and design the implementation of a geospatial search connector, which allowed the exchange network nodes to communicate with standard geospatial metadata catalogs. The geospatial data discovery project was developed as a pilot project, designed as a proof of concept. Today, EPA personnel and Wisconsin DNR personnel use the Geo-Finder application to share information across offices.

Recognition

EPA Wins a 2008 Government Computer News Award for Agency IT Achievement. CSC and partner Innovate, Inc., were key players in the development of EPA's GeoData Gateway and Metadata Editor, both of which are cornerstones of the agency's comprehensive metadata sharing and management framework. On October 20, 2008, in recognition of the agency's achievement with respect to the geospatial metadata framework, *Government Computer News* honored EPA as one of the top 10 government agencies whose IT initiatives are among the best of 2008.

EPA's GeoData Gateway and Metadata Editor Win the 2008 EPA Mason Hewitt Award. Each spring, EPA's Geographic Information System (GIS) Community gathers to recognize its most significant annual achievement through the Mason Hewitt Award (MHA). The award was established over a decade ago after Mason Hewitt, one of the founders of EPA's geospatial program, died in a tragic motorcycle accident. Chosen by the GIS community through a popular vote, this year's winning projects were spearheaded by CSC with partner Innovate, Inc.

CSC North American Public Sector/Civil Group

15000 Conference Center Drive
Chantilly, Virginia 20121

+1.703.818.5555

www.csc.com/epa

Contact us at epa@csc.com