Office of Mapping and Geographic Information Staff
Papers and Presentations

Brown, Kristin and Larry Stipek. Creating and Managing a GIS Projects Division in Loudoun County, Virginia. Presentation, ESRI International User Conference. San Diego, CA, 2002.

Carlson, Susan, Julie Kottamala, and David Torraca. Taming of the (ArcGIS) Server. Esri Mid-Atlantic User Conference, Presentation, Baltimore, MD, 2012.

Conry, Thomas, Lawrence Stipek, and Dan Widner. Northern Virginia Regional Street Centerline Project. Presentation URISA GIS- Pro. Indianapolis, Indiana, November 2011.

Fauss, Mike and Elizabeth Lyburn. The Role of GIS in Land Records Consolidation: A County of Loudoun Case Study. Presentation, Virginia Association of Land Information Systems, Abingdon, Virginia, 1999.

Fauss, Mike and Douglas Packard. Parcel Maintenance at Loudoun County, Virginia Using ArcGIS. Conference Proceedings, Integrating GIS and CAMA. URISA, Las Vegas, NV, 2007.

Jodziewicz, John. GIS Education in the Workplace: Empowerment of the People. Conference Proceedings, ESRI International User Conference. Palm Springs, CA, 1989.

Kottamala, Julie, Jennifer Sanderson, and David Torraca. Application Aids Land Assessment Analysis-Replaces Time- Consuming Paper Process. ArcUser, volume 13, No. 1, winter 2010. ESRI, Redlands, CA.

Mathur, Mita, Kristin Brown, and Larry Stipek. Base Map Updates Using GIS and Remote Sensing. Conference Proceedings, ESRI International User Conference. San Diego, CA, 2008.

Mathur, Mita, Kristin Brown, and Lawrence Stipek. Building a Better Base Map. In Earth Imaging Journal, Vol. 6, No. 1, January/February 2009. pp. 28-30.

McCarthy, Christopher. Loudoun County, Virginia Public Information Mapping Makes Successful Transition with GIS. ArcNews, volume 27, No. 4, winter 2005/2006. ESRI, Redlands, CA.

Nedrich, Kate and Brian Wooley. Creating a Routable Centerline from a Cartographic Dataset for Public Safety Applications. Presentation, ESRI International User Conference. San Diego, CA, 2008.

Stipek, Lawrence, and Steven Wiles. Education and Continuing Education for Technical Staff, Administrators, and the Public: Essential Components of the Loudoun County, Virginia GIS. Technical Papers, American Congress on Surveying and Mapping, Washington, D.C. Fall, 1992.

Stipek, Lawrence. Implementing and Assessing the Value of Direct Public Access to the Loudoun County, Virginia Geographic Information System. Presentation, Urban and Regional Information Systems Association, Atlanta, GA. July, 1993.

Stipek, Lawrence. Ecotech Network.. In Virginia Review, Chester, Virginia. A bi-monthly column on GIS in government. 1999- 2009.

Stipek, Lawrence, and David Torraca. The Evolution of a Local Government GIS Training Plan. Paper and Presentation, URISA, Portland, OR, 2012.

Torraca, David. Using GIS in Local Government: Supporting the National Flood Insurance Program. Conference Proceedings, ESRI International User Conference. Palm Springs, CA, 1996.

Torraca, David, and Kristin Brown. Modeling County Resources for a Purchase of Development Rights Program. Conference Proceedings, ESRI International User Conference. San Diego, CA, 2000.

Torraca, David, Marsil Zook, and Rupali Kale. ArcSDE Enterprise Database Design and Development in Loudoun County, Virginia. Conference Proceedings, ESRI International User Conference. San Diego, CA, 2007.

Torraca, David, Mike Fauss, and Susan Carlson. Developing ArcGIS Server to Replace a Legacy Web Mapping Application Presentation, VAMLIS, Charlottesville, VA, 2008.

Torraca, David, Susan Carlson, and Rupali Kiran. Web Application Development Using ArcGIS Server. Presentation, Esri Mid-Atlantic User Conference, Philadelphia, PA, 2010.

Weber, Richard S. LOGIS: Case Study of Geographic Information System Growth in Loudoun County, Virginia. Proceedings, Urban and Regional Information Systems Association, Edmonton, Alberta, 1990.

Weber, Richard S. Effective Use of Geographic Information System Technology in Municipal Scale Environmental Management. Proceedings, Urban and Regional Information Systems Association, Edmonton, Alberta, 1990.

Weber, Richard S. Application of Geographic Information System Technology to Sanitary Landfill Site Selection. Presentation, ESRI International User Conference. Palm Springs, CA, 1990.

VAMLIS 2008 Abstract Submission

Presenters: Susan Carlson, GIS Web Analyst, Loudoun County, Va.
Mike Fauss, GIS Land Records Manager, Loudoun County, Va.
David Torraca, GIS Manager, Loudoun County, Va.

Presentation Title: Reinventing the Wheel: Designing and Deploying Web Based Services using ArcGIS Server to Replace a Legacy Web Mapping Application.

Abstract:

Loudoun County, Virginia, located in Northern Virginia, is part of the greater metropolitan Washington, DC area. The county's investment in GIS technology dates to the mid-1980's. Since then, the county's Office of Mapping and GIS (OMAGI) has developed many iterations of programs to support both private and public entities. Core services are meant to put the tools to access geographic data in as many hands as possible.

Public and staff access to GIS data has grown from desktop tools using ESRI's Arc Macro Language to a Web-based application incorporating Map Objects, Visual Basic and ArcIMS. With the deployment of ESRI's ArcGIS Server technology OMAGI plans to leverage this new technology to revise, update, and expand the utility of GIS data available to its users.

This presentation describes the county's GIS system, focusing on its Web-based support services and their customers, and the project planning to deploy new technology. A user survey, performed in 2007, describes how the current Web application, WebLogis, is being used and by whom. Functions and capabilities that users in the public and private sector find critical to their business processes will be discussed, as well as new applications and services that are required to support the growing needs of the Loudoun County community. Integral to the accomplishment of these tasks are careful analyses during the system architecture and enterprise design phases. Attendees planning on creating a Web presence or using the new ArcGIS Server technology will benefit from this presentation in terms of the components of these analyses and their findings.

EsriMUG 2010 Abstract Submission

http://www.esri.com/events/mug/participate/presentations.html

Presentation Title: Web Application Development Using ArcGIS Server

Authors:
Susan Carlson, GIS Web Analyst
Rupali Kale, GIS Programmer Analyst
David Torraca, GIS Manager

Topic Category: SLG—State and Local Government

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Loudoun County, Virginia, located in Northern Virginia, is part of the greater metropolitan Washington, DC area. The county's investment in GIS technology dates to the mid-1980's. Since then, the county's Office of Mapping and GIS (OMAGI) has developed many iterations of programs to support both private and public entities. Core services are meant to put the tools to access geographic data in as many hands as possible.

Public and staff access to GIS data has grown from desktop tools using ESRI's Arc Macro Language to a Web-based application, known as WebLogis, incorporating Map Objects, Visual Basic and ArcIMS. With the deployment of ESRI's ArcGIS Server technology OMAGI has been leveraging this technology, primarily the JavaScript Web API and REST services, along with KML, to revise, update, and expand the utility of GIS data available to its users.

This presentation describes the county's GIS system, focusing on its Web-based support services and their customers, and the project planning and development to deploy updated and new applications to meet their needs. Using the JavaScript API, the authors developed a new application, WebLogis version 2 , leveraging federated database technology, which allows for integration of multiple autonomous database systems. In addition, they incorporated and improved upon existing functionality found in older applications. Mention will also be made of additional applications and services required to support the growing needs of the Loudoun County community. Attendees planning on creating a Web presence or using ArcGIS Server technology will benefit from this presentation in terms of the components of the development process, beginning with system architecture and enterprise design through project deployment.

Presenter Biographies:
David Torraca is the GIS Manager in the Loudoun County Mapping & GIS Office and has worked with Loudoun's GIS since 1988.

Susan Carlson has been the GIS Web Analyst at Loudoun County for 3-1/2 years and has been working with GIS for 10 years.

Rupali Kale is a GIS Programmer at Loudoun County for 4-1/2 years and has been in the field of GIS for 10 years.

Esri Mid Atlantic Users Conference, December 10-12, 2012

http://www.esri.com/events/mid-atlantic/index.html

Abstract

Loudoun County, Virginia deployed a web application using ArcGIS Server in 2009. Since then the system has grown to host 48 services supporting myriad other enterprise applications across three servers. Demand for map services continues to grow with each new County initiative. Management of this system requires tuning and daily monitoring to insure the services are performing optimally.
This presentation will discuss the strategies Loudoun employed to tune this system from specifications for mxd's to settings on the server, and to monitor the system from scripts and free tools to Geocortex Optimizer by Latitude Geographics.

Authors:
Susan Carlson, GIS Web Analyst
Julie Kottamala, GIS Programmer Analyst
David Torraca, GIS Manager

URISA 2012 Portland

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The Evolution of a Local Government GIS Training Plan

Abstract

It is important to invest in employee training to keep pace with changes in GIS technology; to improve cartography, GIS management, and other skills; to meet the changing demands of the organization; and to promote career development. A training plan helps ensure that scarce training money is wisely spent, and that training which does take place advances the goals of the organization.
Loudoun County, Virginia began creating a training plan for GIS in 2005 that emulated the County's competency model, a strategy that was not completely successful. With help from ESRI, a new training plan was later created that was tailored more specifically to the needs of individual employees. In 2009, the County revised its GIS Strategic Plan, in part to align the GIS goals, objectives, and three year work plan with the goals of the organization as a whole. The training plan was then changed to implement the GIS Strategic Plan through the County's performance review process. Training objectives are now reviewed and tracked by supervisors and employees semi-annually.

1996 Esri User Conference, Palm Springs, CA

David Torraca

Using GIS in Local Government: Supporting the National Flood Insurance Program

Abstract

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP). Communities are required to adopt floodplain management ordinances to be included in the program. The Flood Insurance Rate Map (FIRM) produced by FEMA is used by private and public sector interests to determine the location of flood prone areas. Locales that have experienced rapid suburbanization have found the maps to be quickly outdated because of a lack of current base information and exclusion of recent alterations to the floodplain. By establishing a GIS floodplain database layer, Loudoun County, Virginia, has been able to make more accurate delineations and economically maintain the data. When overlayed with other regularly maintained database layers, the information becomes much more versatile and visible. Products and services provided with the County's GIS include 1:2400 scale floodplain delineation maps, on-line queries, environmental assessments, acreage reports, and data transfers to other county agencies.

2000 Esri UC San Diego, CA

Kristin Brown, David Torraca

Modeling County Resources for a Purchase of Development Rights Program

Abstract

Loudoun County Virginia is the fourth fastest growing county in the United States. To preserve farmland and openspace, the Loudoun County Board of Supervisors directed a subcommittee to create a purchase of development rights program and gave them three months in which to do it. A team was assembled that included staff from several County departments, including the Office of Mapping and Geographic Information, to develop and build a model that was flexible due to the short time frame and the unknown outcome. Discussion of this process will cover data collection, compilation, modeling in ArcInfo and Arcview, analysis, and results.

Submittal for ESRI User Conference June 18 – 22, 2007, San Diego, CA,

ESRI Technology Track

SYS System Implementation for GIS
This track focuses on system architecture design, implementation project planning, GIS deployment into existing IT environments, and exploitation of GIS resources by the enterprise.

Title: SDE Enterprise Geodatabase Design and Development in Loudoun County, Virginia

Abstract:

For the past several years, Loudoun County, Virginia has been ranked among the fastest growing counties in the nation. Loudoun's GIS, a mature, enterprise system, having its beginnings in 1986, is also growing as the SDE Enterprise Geodatabase model is being developed to standardize GIS operations throughout the organization. The County's mainframe database, DB2, is the relational database used with ArcSDE, which presents its own unique challenges.

This paper explores the challenge of implementing ArcSDE in conjunction with supporting existing procedures and developing new business practices. Loudoun's existing system architecture and database construct will be detailed, with the focus on database design, data integration and publication, and database maintenance procedures. In addition, this paper also specifies some out-of-the box tools used to manage the database and some in-house tools developed for monitoring and reporting SDE database activity for data maintainers and users.

Authors: Rupali Kale, David Torraca, Marsil Zook