

Government Matters

Esri • Spring 2011

GIS for State and Local Government

Growing Business in Arlington

Arlington Economic Development Uses BAO and Esri Data for Research

Arlington County, Virginia, is one of the nation's most desirable locations for business, residence, and tourism. Proximity to Washington, D.C.; a highly skilled labor force; and convenient transportation are among the advantages that have attracted an increasingly varied residential and commercial mix and helped create a vibrant, business- and community-oriented environment. A signifi-

cant contributor to this success is Arlington Economic Development (AED).

AED is dedicated to preserving and enhancing an economically competitive and sustainable community by providing aggressive leadership and superior services to Arlington's businesses, tourism industry, and real estate development entities. The department of 35 full-time employees provides

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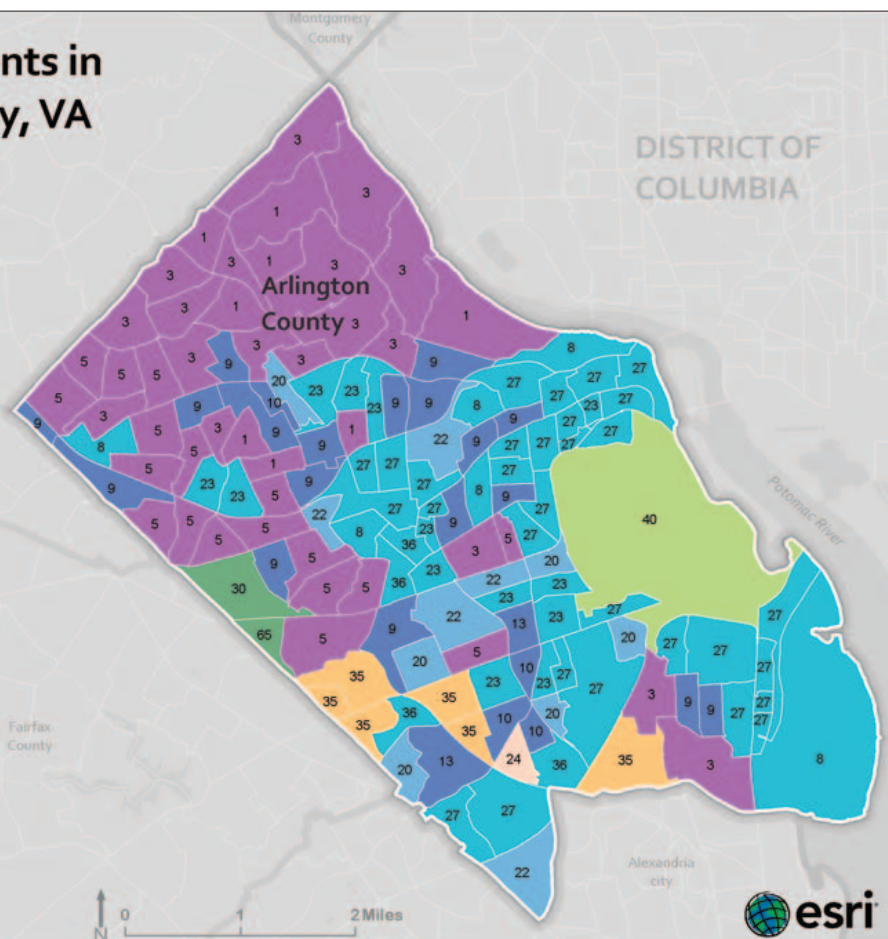
accurate, in-depth research for strategic planning and policy projects to attract, recruit, retain, and expand commerce in Arlington County. Among other duties, the team works with real estate developers to ensure that the

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Tapestry Segments in Arlington County, VA

Dominant Tapestry Segment by Block Group

- 1 Top Rung
- 3 Connoisseurs
- 5 Wealthy Seaboard Suburbs
- 9 Urban Chic
- 10 Pleasant-Ville
- 13 In Style
- 20 City Lights
- 22 Metropolitans
- 8 Laptops and Lattes
- 23 Trendsetters
- 27 Metro Renters
- 36 Old and Newcomers
- 30 Retirement Communities
- 65 Social Security Set
- 40 Military Proximity
- 35 International Marketplace
- 24 Main Street USA



Understanding socioeconomic and demographic characteristics of neighborhoods enables AED to accurately describe the Arlington County area to prospective businesses.

Source: Esri Tapestry Segmentation



Join the Community Maps Program

State and local government agencies around the world—from Nanaimo, Canada, to Hong Kong—are contributing local geographic content to Esri's Community Maps Program. This

cooperative effort from the ArcGIS community is building multiscale basemaps using the best available data sources—including commercial data providers.



Through the program, you can access prebuilt templates, tools, and workflows to efficiently author and cache highly attractive basemaps that include your authoritative data. Esri publishes these cached maps online while you retain control of your data.

Participating in the program reduces costs for making data widely available and offers a reliable way to access critical information for online geographic information system (GIS) apps.

We welcome the following new participants:

- City of Dover, Delaware, USA
- City of Houston, Texas, USA
- City of Miami, Florida, USA
- City of Moncton, New Brunswick, Canada
- Napa County, California, USA
- City of Phoenix, Arizona, USA
- City of Waltham, Massachusetts, USA

To learn more about the Community Maps Program, visit esri.com/communitymaps.

Aerial imagery for the state of Massachusetts was provided by MassGIS, then blended into the World Imagery basemap.

Data and Online Maps Foster Better Decision Making Esri's Community Analyst Now Available in Public Beta

Vast amounts of data, along with instant reports and online maps, are now available through Esri's web-based Community Analyst. With this new tool, government agencies, civic organizations, and policy makers can quickly explore the geographic characteristics of any area and develop the right strategies for policies and resource allocation.

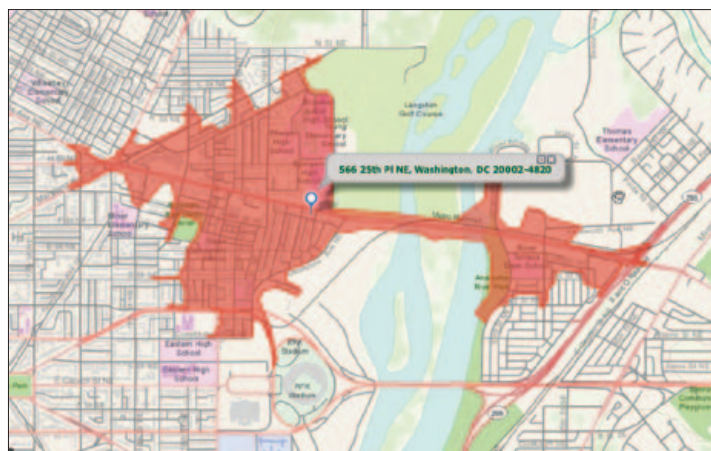
"Fostering a better understanding of the unique characteristics of communities enables organizations to better serve their constituents," says Jack Dangermond, Esri president. "Knowing the best ways to distribute critical resources will transform communities."

This decision-making tool includes demographic, health, economic, education, and business data. It is designed to help users understand community characteristics for any geographic region including block groups and hand-drawn areas.

Community Analyst supports

- Fast discovery of patterns, relationships, and trends
- Customized searches
- Sharing results through easy-to-understand, interactive maps

For more information about Community Analyst and to sign up for the public beta program, visit esri.com/communityanalyst.



Community Analyst provides customized drive-time analyses on a dynamic map.

Gov 2.0

Visit esri.com/liveusersites to see how governments use GIS on the web to support open government.

Boulder County, Colorado

Boulder County uses ArcGIS API for Silverlight to display information about property records within the county. Details include ownership, assessment, floodplain, and election information.



Washington

Through the Washington State Geologic Portal provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources, users can create custom geosciences maps, find information about map features, and download GIS data.



District of North Vancouver

The Projects application displays both current and completed projects within the district of North Vancouver. Data layers include buildings, contours, snow load, bike routes, and population densities. Project information is updated weekly with new photos.



Esri Online

Discover New Videos

Watch Esri president Jack Dangermond's video, *A New Modality for GIS*, on video.esri.com. Dangermond discusses how advances in technology, measurement, software, science, and open data policies are creating a geospatial infrastructure to support better decision making, communication, and efficiency.



Jack Dangermond describes a new modality for GIS.

Read the Local Government Blog



Learn about resources like the Land-Use Public Comment template.

Check out the Local Government blog at blogs.esri.com/Dev/blogs/localgovernment to keep up with the latest announcements and insider information. Recent posts highlighted the Parcel Value for iPhone application and the Land-Use Public Comment template. Subscribe to the RSS feed to be notified of new posts.

Get More State and Local Government News

Subscribe to quarterly e-newsletters from Esri's state and local government team at esri.com/subscribe. In *Local GIS Link* and *State GIS Solutions*, you'll find best practices and news about events, products, training, and other resources.

Listen to New Podcasts

Visit esri.com/podcasts to hear the latest interviews with industry and GIS leaders.

Recommendations

- **Deciphering the Latest Redistricting Trends**—Tim Storey, senior fellow of the National Conference of State Legislatures, discusses new developments in the redistricting process around the nation.
- **Benchmarking Your Skills: The Esri Technical Certification Program**—Esri's Patty McGray and Jamie Rosa discuss the new Esri Technical Certification Program including what distinguishes it from other GIS certification programs, what the training entails, and how to enroll.

ACSM and Esri Come Together to Host the Survey Summit

Annual Conference Heats Up with Move from Spring to Summer

Adding greater value and wider interest to its annual conference, normally held in spring, the American Congress on Surveying and Mapping (ACSM) has joined forces with Esri to form the premier event in the surveying industry. The Survey Summit promises to retain all the benefits of the long-running ACSM Annual Conference while adding the curriculum that will come from the geospatial industry.

The inaugural Survey Summit will take place July 7–12, 2011, in San Diego, California, in conjunction with the Esri International User Conference (Esri UC). It will serve as the ideal forum for not just ACSM members but anyone interested in GIS technology as well as emerging technologies, such as lidar and 3D scanning.

“ACSM has served as a voice for land surveyors and mappers for over 70 years,” says Brent Jones, Esri’s surveying, cadastral, and land records industry manager. “As the surveying and geospatial industries continue to make

technological advances together, it makes sense that the professionals of these related fields come together at one premier conference. We’re excited to have ACSM as part of the Survey Summit. It’s a must-attend event for the surveying community, as it will provide access to the pinnacle of technology available to surveyors and mappers.”

ACSM was founded in 1941 to advance the sciences of surveying and mapping and related fields, in furtherance of the welfare of those who use and make maps. Throughout its history, the organization has continued to encourage the development of educational programs and support publications that represent the professional and technical interests of surveying and mapping.

Today, the society comprises more than 5,000 surveyors, cartographers, geodesists, and other spatial data information-related professionals from private industry, government, and academia throughout the world.

As advances have provided new methods of obtaining and using spatial data, such as GIS, land information systems (LIS), and GPS, ACSM and its members have continually responded to the challenges presented by these new technologies.

“ACSM is dedicated to creating and maintaining a positive synergy between the GIS and surveying professions by exposing GIS professionals to surveying and surveying and geomatics professionals to emerging geospatial technologies,” says Curt Sumner, ACSM executive director. “The Survey Summit will allow us to demonstrate to the world that the surveying, engineering, and GIS professions intersect with each other and can work together effectively. An event like this is great for the geospatial community at large.”

Members of the storied organization share Sumner’s sentiments. “This is undeniably one of the biggest steps forward in linking the surveying and mapping profession with the GIS profession,” says ACSM member Richard Pryce, PSM, director of the Florida Surveying and Mapping Society, District 6. “This is truly a monumental step into the future for surveyors and mappers across the nation to join in the revolution and evolution of GIS.”

The Survey Summit will tee off on Thursday, July 7, with the National Society of Professional Surveyors (NSPS) Golf Classic at Torrey Pines Golf Course in nearby La Jolla and the traditional ACSM Annual Conference business meetings. The remaining days of the conference will boast events such as plenary and keynote addresses, Survey Summit exhibit, committee meetings, socials, and informative workshops and sessions where attendees can earn continuing education units (CEU).

For more information, to register, or to take advantage of sponsorship and exhibiting opportunities, go to surveysummit.com.



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Growing Business in Arlington

right types of commercial buildings are available to prospective companies.

Competing for business is difficult under any circumstances; however, during this protracted economic slump, this critical mission is even more challenging. To increase local tax revenues, provide a stronger local economy, and secure community viability, economic development staffs must employ the best tools and information to produce accurate analyses that will help recruit and retain viable businesses.

At one point in time, Arlington County had no dedicated economic development department. This function operated within another department; therefore, research for business recruitment was sporadic. Data and application tools were scattered among teams. When Cynthia Richmond joined the county as deputy director of Arlington Economic Development, she immediately realized that the new department needed its own data and tools to create better, more accurate analyses.

At her previous job, Richmond had used Esri Business Analyst Online (BAO), a web-based application that provides on-demand access to a variety of Esri Data in reports and maps. She brought her experience with these tools to her new position. “We specifically selected BAO and Esri Data because they are fast, easy to use, accurate, and convenient and provide five-year demographic forecasts,” Richmond notes. “The presentation quality of the reports in PDF format provides another time-saving advantage when we’re compiling research.”

Because prospective businesses may rely on data from other sources, Richmond must also be able to incorporate this information into her analyses to better understand different viewpoints. Benchmarking this data against the Esri Data provides additional depth and confirms the accuracy of the business story she is presenting. Sometimes local data such

as tax information is included in the analysis. “We find that storytelling is an effective way to interpret the information we’re trying to convey,” Richmond says. “We frequently base our stories on Esri Data.”

For example, to acquaint business prospects with Arlington’s distinctive neighborhoods, the team ran reports on areas based on metro station locations using Esri’s Updated Demographics, which provide age, income, housing, and other demographic data categories. Updated Demographics includes more than 2,000 data variables at a variety of geographies, from the national to block group levels.

“We specifically selected BAO and Esri Data because they are fast, easy to use, accurate, and convenient and provide five-year demographic forecasts. The presentation quality of the reports in PDF format provides another time-saving advantage when we’re compiling research.”

Cynthia Richmond,
Deputy Director of Arlington Economic Development

Tapestry Segmentation reports added even more detail by describing the lifestyles and life stages of Arlington’s residential neighborhoods. Tapestry Segmentation, Esri’s geodemographic market segmentation system, classifies all U.S. residential neighborhoods into 65 distinctive segments based on socioeconomic and demographic characteristics. Many Arlington residents fit into Tapestry’s *Metro Renters* segment. Metro Renters are neighborhoods of young, highly educated professionals who are just starting their careers, are community focused, and rent apartments in or near large cities.

Esri’s Consumer Spending data provided facts about the types of products and services that local consumers buy. Data is reported by product or service; variables include total ex-

penditures, average amount spent per household, and a Spending Potential Index (SPI). The SPI compares the local average expenditure by product to the average national amount spent. An index number of 100 is average.

This comprehensive data enabled the team to convey interesting, relevant information that prospective businesses could easily understand about the type of labor force and market profile that Arlington offers.

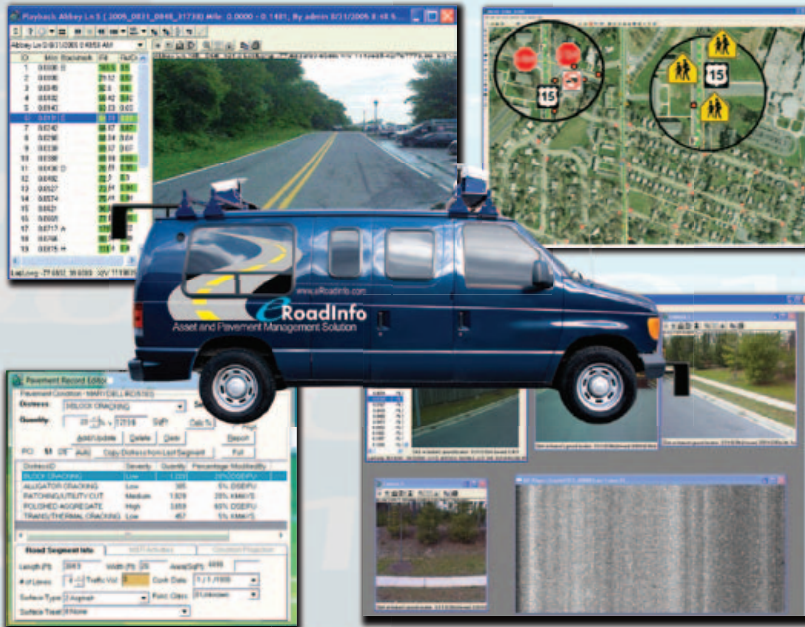
“Because we research and tell stories about Arlington and the region, we must be able to compare this information to other communities. Therefore, we need instant access to Esri’s Updated Demographics, Tapestry Segmentation, and Consumer Spending data for any area in the United States. Business Analyst Online and Esri Data provide us with this capability,” says Richmond.

Since using Business Analyst Online and Esri Data, the team produces better analyses that have resulted in successful business recruitments. This accomplishment created the county’s model for economic development and enabled the department to save

money by hiring fewer consultants. The in-depth analysis information the staff provides has enabled other departments to enact successful policy changes such as Arlington’s retail campaign, Shop Local—Shop Arlington. This ongoing promotion encourages shoppers to spend money locally to support Arlington businesses, generate tax revenues, and provide jobs.

For more information about Esri Business Analyst Online, visit esri.com/bao. To learn more about Esri Data, visit esri.com/data. For more information on AED’s use of GIS, contact Cynthia Richmond, deputy director of Arlington Economic Development, at Crichmond@arlingtonva.us.

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Getting Smart with Public Comments

Regional Transportation Commission Engages Citizens Online and via Smartphones



When the Regional Transportation Commission (RTC) of Washoe County, Nevada, and Fehr & Peers transportation consultants teamed up to create the Reno Sparks Bicycle and Pedestrian Master Plan, they decided to find new ways to generate public comments. In addition to public meetings, the team asked Esri partner CitySourced to create an online web map and smartphone application that allowed people in Washoe County and the cities of Reno and Sparks to submit georeferenced electronic comments. All comments and accompanying photos are displayed on an online map of the area at RenoSparksBPP.com.

RTC began using the CitySourced applications during the summer of 2010 and closed the call for comments in early 2011. During the open

Know the address? Type it here and click 'Locate'. Otherwise, click the

What Are You Reporting?

Optional Description:

(Please Note: Either a Description or an Image Upload is required)

Optional Image Upload: No file chosen

In addition to a smartphone app, citizens could go online to submit a georeferenced comment for the bicycle and pedestrian master plan.

call, interested citizens could use their smartphones to take a photo of a bike lane, curb, or intersection and instantaneously submit feedback or a comment to the web map, for example, “needs crosswalk,” “needs bike lane,” or “good scenery/environment for walking.”

“We thought having the smartphone app would be an innovative way to get different folks involved, maybe somebody who was not necessarily going to come to a neighborhood advisory meeting but would want to provide input,” said Katy Cole, project manager, Fehr & Peers.

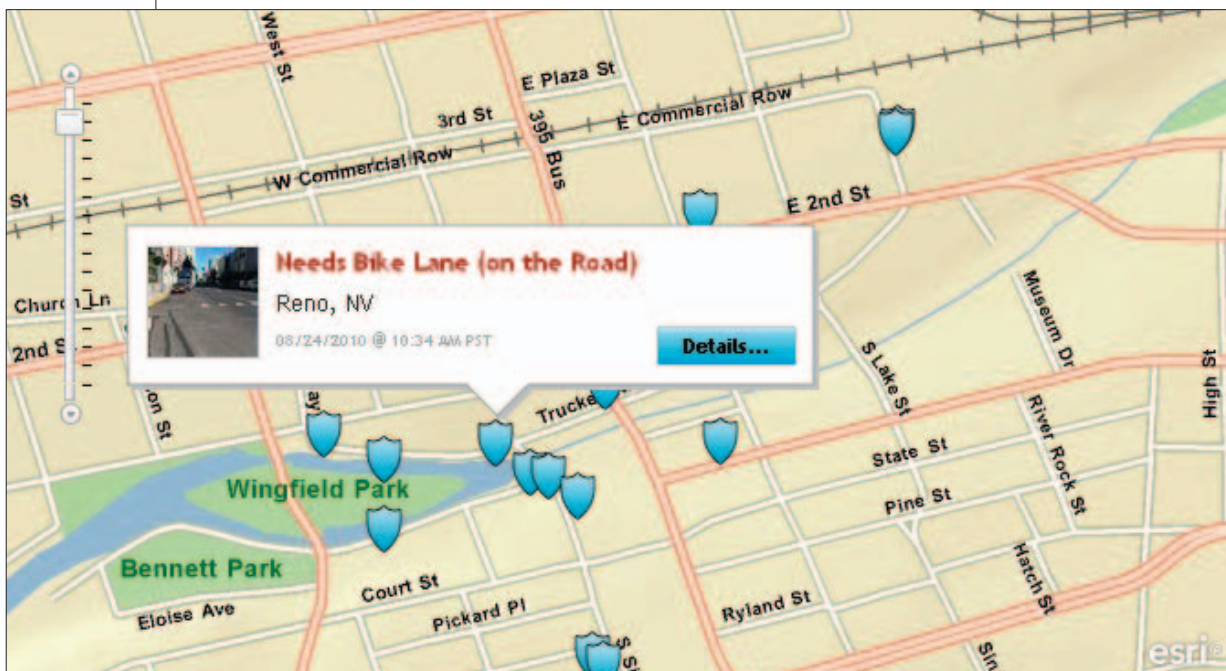
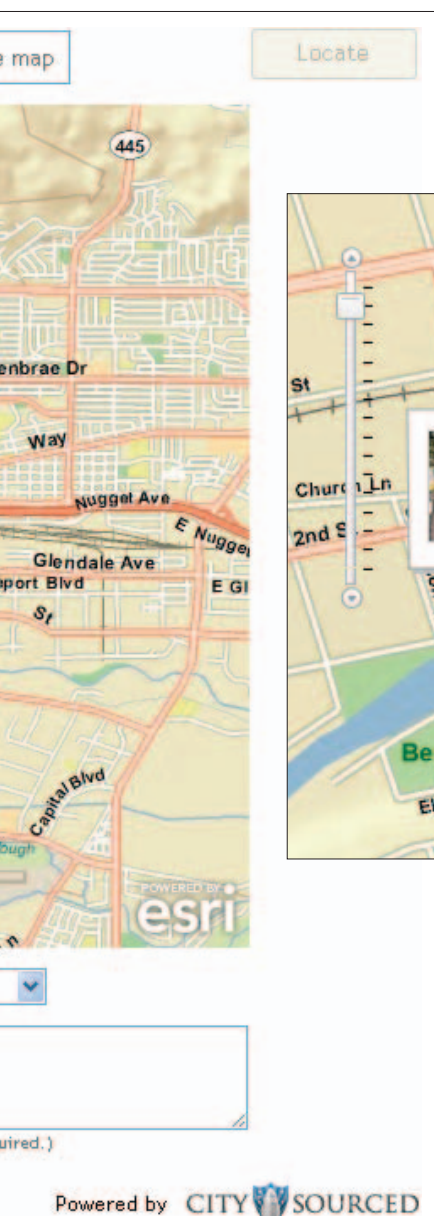
Area residents are increasingly interested in being active and making their communities greener, Cole said. The bicycle and pedestrian master plan will propose an integrated network of bike lanes and walk-

ing paths that connect with mass transit as well as bicycle parking and crosswalk enhancements. Improved transportation options and infrastructure will support the public’s interests. Showing public feedback on a map helps planners see where issues are most pressing to the community and create a plan that reflects those desires.

The final bicycle and pedestrian master plan could help RTC gain funding for requested improvements and will become part of the regional transportation plan.

“We are very interested to see how the public responds to the new opportunities the application offers. It is always good to have a new tool to engage our customers,” said Angela White, director of marketing and communications for RTC.

For more information, contact Katy Cole, Fehr & Peers, at k.cole@fehrandpeers.com.



An interactive map shows where citizens requested improvements.

Novi Puts Mapping in the Cloud

Updated Solution Improves Services and Economic Development

The City of Novi, Michigan, is changing rapidly, due largely to the restructuring of the auto industry in southeast Michigan's Detroit metropolitan region. In the past two decades, its population doubled to 53,000 residents, among the more than 4 million people in the region. This unprecedented growth slowed down due to forces radically transforming the nation's manufacturing industry. To participate in the region's economic renaissance, Novi realized it must be responsive to rapidly changing business needs and demands at local, national, and international scales.

"We needed to engage our public regarding the changes that would impact them as residents, business owners, developers, and entrepreneurs," says Chris Blough, Novi's GIS manager. Along with a part-time GIS technician, he runs the city's enterprise GIS within its IT department. "Our role is to enable other city departments and be an internal resource supporting the delivery of quality, dependable services that are responsive to community needs."

The city created a new, citizen-friendly site (maps.cityofnovi.org) to promote effective delivery of public services, encourage economic development, communicate effectively with residents and businesses, and provide new ways to request public information and services. It also wanted to enable city staff to publish updates quickly, rather than having to schedule a third-party vendor to perform updates on a quarterly cycle.

"We wanted to enable city staff to author, upload, and publish data within an hour," says Blough. "Our goal was to leverage the best tools to represent the public's data and conveniently allow online users to find the information they need. We maximized our existing Esri software investment while providing greater overall service and value."

Using Amazon's EC2 scalable hosting model enables Novi to expand its server performance over time to meet growing application demands as the resource matures and its

capabilities are further appreciated. Plus, the capital hardware infrastructure costs can be avoided, thus reducing longer-term maintenance costs for the city.

To meet all its goals, the city decided to migrate its popular interactive Internet mapping portal from Esri ArcIMS to Esri's ArcGIS Server platform and use the ArcGIS API for Microsoft Silverlight 2.0 while hosting the data in Amazon's EC2 cloud environment. According to Blough, this "represents a new perspective and consideration with regard to managing, securing, and accessing information."

The city's new system allows staff to author

map content using ArcGIS Desktop, upload it to the cloud environment, test the ArcGIS Server services, then publish interactive content to the Internet. The site's content consists of 50 map layers grouped into 10 themes on such topics as community/economic development, landownership, aerial imagery, ordinances, voting precincts, parks, and recreation opportunities.

"We chose Microsoft Silverlight," says Blough, "because we wanted an API that would be visually engaging to our public. With the popularity of Google Earth and Bing Maps, the public is growing accustomed to intuitive



Novi's mapping portal shows detailed information such as property ownership and tax IDs.



Site visitors can easily change the map theme to better understand economic development, road construction, voting information, and more.

and self-enabling tools and often looks for answers to locally specific questions about city services that they cannot find on other private provider mapping systems. Novi wanted a site rich in content, which could evolve in response to future expectations and needs. We are convinced that the Silverlight platform will become more mainstream and allow us to effectively support the greatest number of applications and users.”

The city decided to work with Esri partner Geographic Information Services, Inc., (GISi), a GIS professional services company based in Birmingham, Alabama, to build the new system. “Our ability to host on the cloud was our biggest differentiator,” says Michael Healander, the company’s state and local government general manager. “In addition to that was our ability to reuse code and share applications, which brought the cost down.”

GISi began work on the new site around May 1, 2010, and it went live on July 1, 2010. “Our design process is pretty intense: we do no coding until we go through all the use cases,” Healander explains. “We went through use cases for the general public and more advanced users—for example, the crime mapping application. We then went into a de-

sign phase in which the client was very much involved. We had several design meetings in the first couple of weeks.”

“We have employees who are on the cutting edge of all the relevant technologies,” says Justin Burns of GISi, who served as the project’s manager and technical architect. “On projects like this, we bring a lot of technological knowledge and very strong developers.”

All users of the new system will be able to

- Search for and select geographic features and parcel IDs.
- View different layers together, such as parcel boundaries and aerial imagery.
- Create buffers and use them to select features.
- Identify and select features and export them to a comma-delimited file.
- Click in the map and get coordinates (latitude-longitude or state plane).
- Output the current map display as a PDF or a .jpg image.
- Mark up the map.

Access to the data for utilities, law enforcement, and fire services is restricted to authorized personnel, such as police detectives, who can access it via the Internet after entering their user name and password.

In the future, Blough envisions mobile, wireless connections from the field—for example, police or utility crews—and, perhaps, the capability for live editing. “The new platform will allow our system to grow with very little costs,” he says. “We hope that it will continue to adapt as our needs change. Many other small and mid-sized communities will also benefit from this approach.”

For more information, contact Kevin Stewart, GISi, at 205-941-0442, extension 35, or kstewart@gisinc.com.

Support from Online Communities Eases Move from ArcIMS to ArcGIS Server

By Matthew DeMeritt, Esri Writer

Before the advent of Internet map servers, most maps were requested over the phone. GIS departments took individual requests from internal customers, then processed, printed, and shipped those orders. When Esri released ArcIMS 10 years ago, that cumbersome process became obsolete. Using a web browser, customers themselves could access ArcIMS maps, turn layers on and off, and query features to obtain attribute information from the server.

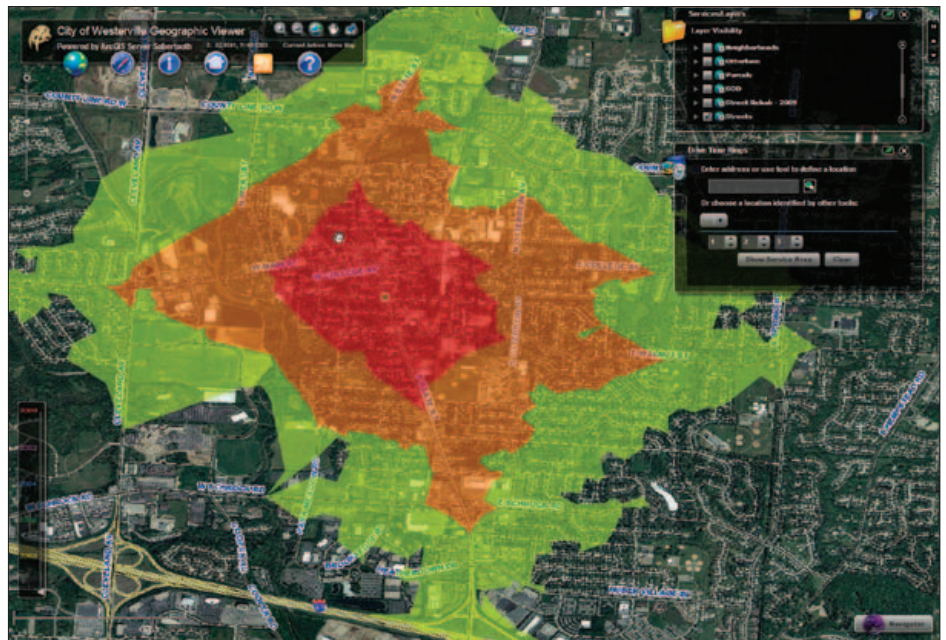
Within a few years, enabling technologies—such as broadband and map caching—allowed maps to be served more quickly. User expectations for both consumer and business mapping applications increased. In 2007, Esri released a new system called ArcGIS Server that harnessed those advances and gave organizations the ability to serve dynamic, fast-rendering maps.

Meeting Increasing Demands

In Westerville, Ohio, ArcIMS had been used almost exclusively by internal users for almost a decade. The planning and development and police departments frequently accessed zoning information, address points, parcels, and aerial photography from the site. A public-facing site let citizens view simple layers. When Brian Nemec came on board in 2008 as GIS manager at Westerville, his first objective was to configure ArcIMS to accommodate a growing clientele that wanted greater access to geographic information.

"I hadn't worked with ArcIMS before, so I knew there was going to be a steep learning curve," said Nemec, who was working on a master's degree in engineering in GIS from the University of Colorado, Denver (UC Denver), at the same time. His coursework included a class dedicated to web GIS technologies taught by Greg Gunther. In this class, Nemec learned about ArcGIS Server.

About that same time, internal users at Westerville began asking for the same kind



Westerville Flex viewer is displaying the Drive Time Ring widget.

of functionality that consumer mapping services, such as Microsoft's Virtual Earth (now Bing Maps), provided. Although Nemec could have coded some of those functions into ArcIMS, this growing clamor for new functionality threatened to outpace whatever progress he made. "The tools everyone wanted were already available in ArcGIS Server, so it didn't really make fiscal sense to bolt on these improvements one at a time to keep up with department user demand." For Westerville's needs, ArcIMS no longer fit the bill.

Nemec requested an upgrade to a more robust server that could grow with the expanding user base. With experience he gained from his web GIS class at UC Denver, he set about creating a JavaScript-based site that mirrored the functionality of the ArcIMS website with a few additions. He presented the application to Westerville management. "The speed, performance, and added content in that application persuaded Westerville management that it was a smart decision," he noted.

Getting Under Way

Before getting started, Nemec visited a variety

of online communities to familiarize himself with the issues associated with the transition from ArcIMS to ArcGIS Server. Because he was most comfortable with JavaScript, he initially tapped the experience of the JavaScript community. He found the sample maps and applications he needed to start creating the site. "I quickly learned from these online resources that I didn't need to be a programmer to make a fully functional GIS website. After that revelation, the transition became a lot more doable and far less intimidating."

Nemec began the project by taking working samples from the community and integrating his own data into them. He tinkered with the samples to see what did what. Lifting chunks of code from one example and copying and pasting them into his working sample, Nemec slowly breathed life into the application. "I did the same thing with other samples, copying here and pasting there," he said. "When it got tricky, I simply went to the communities for help and quickly got everything in the right position doing what it was supposed to do." Support sites contained more than enough

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An aerial photograph of a city skyline, featuring several prominent skyscrapers. Overlaid on the image is a semi-transparent GIS map showing a network of streets, parks, and other urban features in various colors (blue, green, yellow, red). The word "CITYWORKS" is written in large, bold, white capital letters across the top of the image, with a registered trademark symbol (®) at the end.

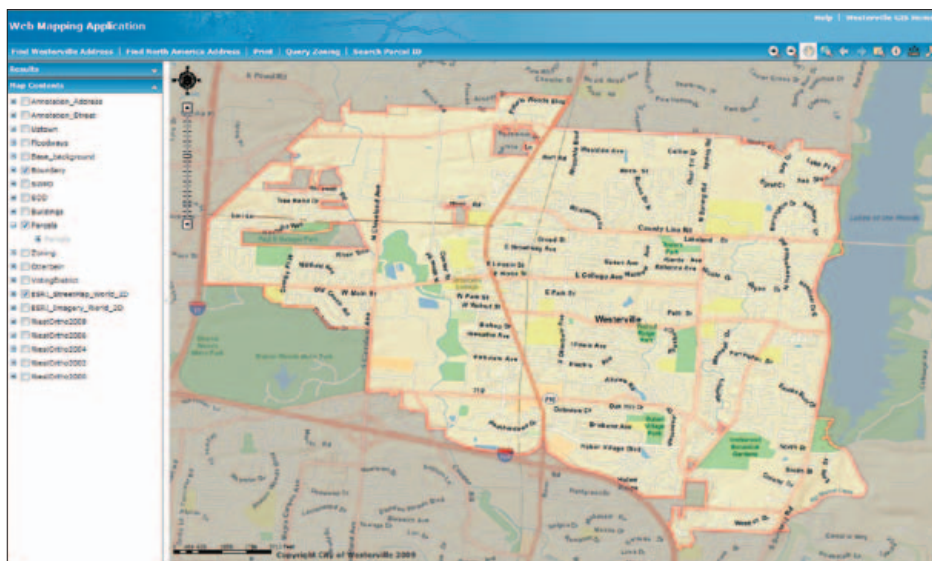
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Support from Online Communities Smooths Move from ArcIMS to ArcGIS Server



Above is a sample application that Nemec used to demonstrate the capabilities of ArcGIS Server.

working samples and coding advice to guide Nemec through the process.

When Esri released ArcGIS API for Flex in 2008, Nemec continued the process, taking what he liked from samples and methodically piecing the application together. It was a good system to build the framework of the site, but Nemec knew he'd also want functionality that wasn't available in the samples. "Fortunately, working with the samples familiarized me with the code enough to experiment with it and customize it," said Nemec. "It wasn't long before I started using Python and other scripting languages to automate tasks on the server."

Crucial Need for Querying

Before moving to ArcGIS Server, Westerville had wanted to give its expanded user base not only fast mapping but also the ability to perform advanced queries. Although Nemec could plot points in ArcIMS, he could not dynamically create statements that would review data for a specific number of days and return results. "We needed that for our police site," Nemec said. "Temporal data is crucial for law enforcement to create statistics and serve them to the public." With ArcGIS Server, Westerville citizens can now get specific crime reports through its Flex-based police site.

ArcIMS was limited to performing simple queries on parcel information. Westerville needed to deliver more than zoning boundaries on the map. It needed to return data, such as hyperlinks, parcel IDs, and owner information, in response to queries of the county auditor websites. Using ArcGIS Server, Nemec can hyperlink to actual ordinance codes over the web. "Builders, contractors, and landowners can now easily access the current zoning ordinance for a property," said Nemec. "They

no longer have to come in to the planning and development office for possible zoning change requests."

Start to Finish

Westerville's ArcGIS Server site took about six weeks to get running and online. After that, the time required for tweaks and improvements shortened significantly as Nemec became familiar with the code and was able to recycle some of his existing code. "The great thing about ArcGIS Server is that I didn't have to be a programmer to create my websites," he said. For Nemec, "the ArcGIS Server and code communities were an invaluable repository of knowledge, walking me through what could have easily been an overwhelming experience."

Nemec quickly discovered that Esri support services and user communities make the ArcIMS-to-ArcGIS Server transition simpler than he thought possible. Now Westerville not only meets user performance expectations but also can serve the demands of a larger user base, thanks to ArcGIS Server cached map services, optimized map services, and lightweight APIs. For more information, contact Brian Nemec at brian.nemec@westerville.org.



Nemec designed this carousel navigator widget. Users can spin to a different map without having to leave the current map.



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