



Committed to Excellence in the Development and Coordination of Geographic Information Technologies

E-911 Centerline Development Uses Geodatabase Replication

Jeff Cox & Caroline Gaulke, Anne Arundel County

Anne Arundel County will implement a new Emergency 911 Computer Aided Dispatch System in the first quarter of 2010. Since March 2008, the County has been working with Johnson, Mirmiran, and Thomson (JMT) to enhance the GIS Street Centerline feature class to comply with the new E-911 CAD System. This "GeoFile" will be used as the base map layer for incident address matching and public safety vehicle routing.

A primary objective of this project is to implement an editing environment that facilitates JMT's execution of updates to the GIS Street Centerline feature class and related tables, while maintaining the County's ability to conduct daily centerline edits. As a result, ESRI's ArcGIS 9.3 Distributed Geodatabase Replication and Synchronization (disconnected

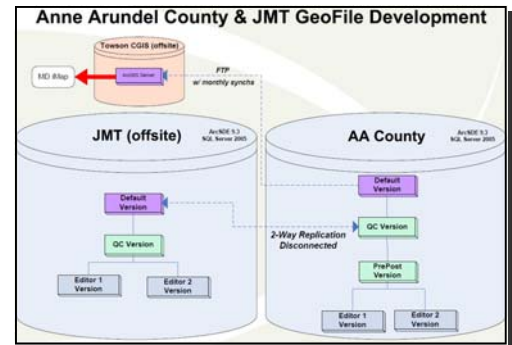
environment) was chosen as the methodology to achieve this objective.

The County and JMT are utilizing ArcSDE 9.3 Replication and Synchronization. Two-Way Replication allows users to copy data from one Geodatabase to another, independently edit feature classes and tables, and then synchronize the edits so that they can be viewed in both Geodatabases. The County and JMT synchronize edits, also known as Data Change Messages, using XML files via email.

Within the GIS feature class, JMT is programmatically populating existing "zero" address ranges using State Highway Administration mile post data or adjacent addressed segments, creating potential address ranges, and populating ramps and spurs with proper names. Within the related tables, they are adding routing information, such as speed limits and turn restrictions. JMT has developed a series of complex models using ArcGIS Model Builder to automate editing tasks, ongoing maintenance, and the conversion process necessary for the new E-911 CAD System.

This project introduced several challenges:

- Network performance issues prevented use of a connected environment;
- Multiple editors on the same data resulted in the need for conflict resolution;



- Inconsistent success with the synchronization process until the release of ArcGIS 9.3 Service Pack 1; and
- A need to maintain Relationship Class integrity between the feature class and related tables as street segments are added, deleted, split, and merged.

It is anticipated that this project will be completed by June 2009.

Anne Arundel County would like to acknowledge the hard work of the JMT project team members, which include Jeff Roberts, Dominic Cilento, Chris Saylor, and Candice Ottley.

If you have questions, please contact Caroline Gaulke, Anne Arundel County GIS Manager, at 410-222-4024 or itgaul90@aacounty.org.

Read more about Geodatabase Replication:

http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=Replicas_and_geodatabases

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St. Mary's Project Focuses on Address Points and Impervious Services

Jeff Edgin, St. Mary's County and Geographic Technologies Group

St. Mary's County has had huge successes in GIS over the past few years. The County has implemented a full-suite of public safety and land based GIS applications to include Internet, intranet, and mobile solutions. However, staff realized that they were missing key data elements that were a must to continue the positive momentum of GIS. It was decided that address points and an impervious surface layer were critical based on current and future project needs. The County contracted with Geographic Technologies Group (GTG) in the Fall of 2008 to verify all non-private addresses for 911 purposes and to create an impervious surface layer. There are approximately 40,000 addresses in St. Mary's County.

Field verification of addresses provides many benefits for public safety personnel and county residents. This data allows dispatchers to pin-point the exact location of a call for service and for public safety staff to view the exact



location via mobile mapping tools. Having access to this data allows dispatchers and responders to determine the distance between the structure and the street, the specifics of structures with multiple units, and allows them to quickly and strategically allocate the needed resources. Knowing the layout of a structure with multiple units (shopping center, apartment, etc.) is essential when responding to a call.

Along with the address layer, the county chose to create an impervious surface layer for analyzing stormwater and

environmental concerns. To tackle the massive task of digitizing buildings, roads, driveways, sidewalks, forested areas, and any other impervious surface, GTG divided the County into 500 digitizing grids. Staff at the County QA/QC all deliverables, and follow up on addresses that need to be reassigned or further researched.

GTG provides a web portal that allows St. Mary's staff to track the progress of the data layer creation. Jeff Edgin, GIS Manager for St. Mary's County, says "This project is having a huge impact on our ability to deliver advanced GIS solutions to our staff and the public. GTG has been terrific to work with. We work as a team and when either party has any questions or concerns we contact each other and find a quick resolution. There is no doubt that the GIS tools we have in place coupled with this highly accurate GIS data will make our County a better and safer place to live and work."

GIS Enhances Maryland's Accountability for Stimulus Spending



In March, Gov. Martin O'Malley launched a new website designed to help Marylanders track recovery

projects across the state. The website utilizes GIS to help citizens see where the recovery dollars are being spent.

An interactive map on the website allows users to view investment in a number of ARRA target areas, including public safety, housing, health care, energy, the

environment, the workforce, and services and support for families. Users can see how the funds are being allocated statewide and in specific counties. Project locations within each jurisdiction can be found, along with project description.

The website is maintained by StateStat, a performance-measurement and management program implemented to make Maryland State government more accountable and more efficient.



Visit: <http://www.mdimap.com/statestat/>

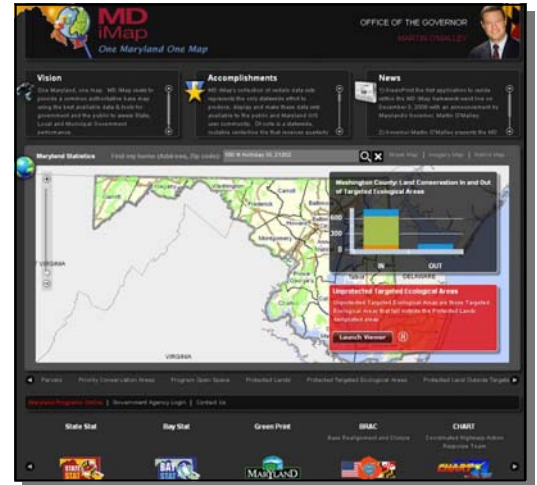
ESRI's ArcGIS Server Provides Foundation for Maryland's MD iMap

Maryland Governor Martin O'Malley recently launched the ArcGIS Server software-based MD iMap, an authoritative online basemap of Maryland that allows government and citizens to assess state, local, and municipal performance. As the portal into the state's enterprise geographic information system (GIS), MD iMap also provides data to governments throughout the state including seamless, geocoded statewide centerlines and six-inch imagery. MD iMap embodies O'Malley's vision of "one Maryland, one map."

"In Maryland, GIS is vital to setting goals, tracking performance, and

creating transparency," O'Malley. "We have been using GIS for years to increase government accountability and efficiency and to enhance transparency. With one comprehensive and interactive map for Maryland, our citizens will have access to unprecedented information online. From land conservation to public safety, the possibilities are endless when government becomes transparent and accountable to the citizens it serves."

GreenPrint is the first GIS-based performance measurement application that is accessible via MD



iMap. It is a planning tool designed to help government staff, conservation organizations, and individual citizens make good decisions about land conservation and growth. The state's other performance measurement applications, including StateStat and BayStat, will be added soon.

To support government staff in Maryland, a secure agency login on the MD iMap Web site home page connects users to Maryland GIS Online, which is built with ArcGIS Online. On that site, staff can download data and Web services from other government entities in the state. In addition to significantly enhancing data sharing and coordination, the portal is innovative in its delivery of real-time, up-to-date statistics in one sleek, user-friendly interface.

"Governor O'Malley's vision of one Maryland, one map, speaks to the best in government including accountability, unity, and service to citizens. It is also an outstanding example of a public and private partnership driving government forward," said ESRI president Jack Dangermond.

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<http://www.esri.com/news>

GIO's Corner

Statewide Maps Provide A Key Public Service

"Hundreds of years ago John Smith made the first map of the Chesapeake Bay, we're constructing the second one. And this one will be a map that's parcelized, it allows GPS and that sort of coordination to bring together all of the efforts of agriculture, DNR, Department of Environment, Planning, and County Governments in order to see what we are doing in this critical Bay watershed and how we can do a better job of restoring her health."

-Gov. Martin O'Malley, State of the State Address, Jan. 23, 2008

The goal of constructing the second comprehensive map of the Bay is almost complete. MD iMap – Maryland's Internet-based map – is alive and growing. The base map, launched in December 2008, can be viewed at www.mdimap.com/imap. Links to other GIS applications created by extending the base map can also be found here.

GreenPrint – Maryland's land conservation mapping application launched in December 2008 – can be viewed at www.greenprint.maryland.gov. As many of you are aware from the national news, Maryland stands to receive several billion dollars from the *American Recovery and Reinvestment Act* of 2009. Governor O'Malley pledged to plan for and expend these funds in a targeted and transparent manner. Visit www.recovery.maryland.gov to view detailed information about how much will be spent and where. Soon, mapping applications for Marylanders Plant Trees and AgPrint will be released.

A key component to providing public service, these maps rely on the best available GIS data. It's important to recognize that these data are built upon partnerships between state and local government agencies. The status of GIS coordination within Maryland would not be where it is today without the efforts of individuals at all levels of the GIS community.

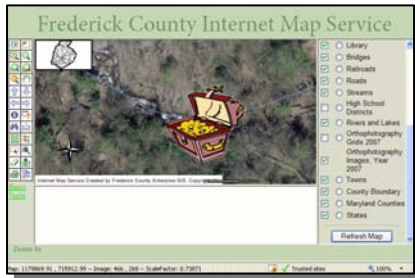
Until next time . . . **Kenny Miller**

Maryland Counties Celebrate GIS Day 2008

Frederick County

In celebration of GIS Day 2008, staff from Frederick County's Enterprise GIS team and the Department of Planning and Zoning presented at two Frederick County High Schools, demonstrating the importance of GIS in their daily activities and in their potential career choice. County GIS staff spoke to Environmental Science students at Urbana High School on November 20 and Middletown High School on November 25.

The students learned what GIS is, how it is used and real world



applications of GIS within the environmental field. Additionally, students participated in a treasure hunt activity. The treasure hunt used Frederick County's Internet Mapping Services to locate a hidden treasure, utilizing common GIS tools for navigation, identification, and searching. The students were given different clues to gather the Y coordinate of the treasure, and with the X coordinate already provided the students were able to input this data in the XY tool to find the treasure chest. The first group in each class who successfully completed this exercise received prizes provided by ESRI.

Presenters included Enterprise GIS staff Geoff Caruso (GIS Specialist), Sam Householder (GIS Manager), Mike Stranovsky (GIS Systems



Administrator), Tara Wolf (GIS Specialist) and Yeon Kim (GIS Project Manager), as well as Angela Worley, GIS Project Manager from the Department of Planning and Zoning.

For instructions on the treasure hunt, or for more information on other educational materials, please visit <http://www.co.frederick.md.us/gis/digitalProducts/education.html>.

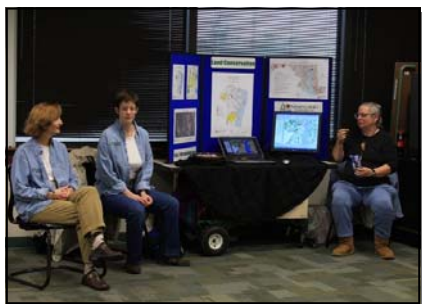
Anne Arundel County

Anne Arundel County held a GIS Day open house for the public on Friday, November 14 at the Heritage Complex on Riva Road. The event included exhibits from ten County departments, the City of Annapolis, and Maryland DNR. The Police and



To promote GIS Day, a Map Gallery kick-off was held on October 27, at the Arundel Center in downtown Annapolis with the County Executive.

The Map Gallery was also posted at several County sites including the Crofton Library and Anne Arundel Community College before its final posting at the Heritage Complex.



Emergency Management command vehicles were available for tours.

Over fifty County employees and citizens attended the event. Additionally, 80 students from the North County High School STEM program visited the exhibits and attended several special sessions and presentations during the morning. Despite intermittent rain showers during the event, the day was a great success.



MSGIC online has a new look!
Visit <http://www.msgic.state.md.us/>

Flyover Maryland: Enterprise Geographic Information System FACT SHEET

In February 2009, the Maryland Transportation Authority (MdTA) rolled out the first phase of its Enterprise Geographic Information System (GIS). The MdTA Enterprise GIS supports key Authority goals of efficiency and effectiveness, safety and security, strategic financing, and customer service. The system provides a unified view of data provided from all MdTA business units including the Engineering, Finance, Operations, Police and Administration divisions.

Technology

Research and discussion revealed that a hybrid solution of ArcGIS Server in ESRI and Google's Earth Enterprise (GEE) product combination was the best solution for MdTA's GIS needs. ESRI's ArcGIS Server serves as the data repository to create and maintain GIS data. The Google Earth Enterprise client (3D) is a fast, easy-to-use Geovisualization tool for navigating GIS data and requires low maintenance cost. The Enterprise Edition allows MdTA to host their own data (imagery, terrain and vector) with no connection to external Google services.

The MdTA GIS is capable of protecting sensitive data by allowing access to only authorized users.



Examples of successful ArcGIS and GEE combination deployments include the United States Army, Virtual Alabama (Department of Homeland Security), Southwest Florida Water Management, NASA and the DC Government.

Collaboration

Full support for commonly used GIS formats in the state ensures interoperability of the MdTA GIS with MD iMap, a Governor O'Malley directed effort for "One Maryland, One Map". The product integrates seamlessly with other state or local agency's GIS applications via KML or web services.

MdTA is currently reviewing the option of providing the Google Earth Enterprise client to other public agencies. Please contact us for more information.

Version 1.0 Features

The first phase went live on Feb. 2, 2009 with the following key features:



- 75% of the six-inch pixel imagery was loaded for the State of Maryland.
- 30 Base Map Layers.
- Right of Way Layer.
- 3D model layer: 16 buildings and one bridge.
- SAN server infrastructure with offsite backup.
- Google Enterprise Servers on Linux Virtual Machines.
- 130 users and growing.

Future Releases

- Accidents
- Asset Management Integration
- Cameras
- CHART (Coordinated Highway Action Response Team) Data
- Engineering Drawings
- Environment
- Home Land Security
- Inspection Reports
- Project Management Integration
- Parcel Property

For more information, contact:

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Maryland
Transportation
Authority

Frederick Co. Wins Technology Solutions Award

The Business Parks and Retail Centers Mapping application, developed by Frederick County's Enterprise GIS, received the Public Technology Institute's 2008-2009 Technology Solutions Award for GIS. Candidates are separated out into population categories, and then determined by an independent panel of judges. Frederick County won the GIS B category, with a population range between 100,000-349,999.

Enterprise GIS, in partnership with Frederick County's Office of Economic Development, created the Business Parks and Retail Centers Mapping application. This online application aims at helping the commercial real estate community find existing and proposed Business Parks and Retail Centers in the County, and provides detailed information on the road network, traffic counts, zoning, water and sewer, and parcels. Users can search for available commercial space and building lots within the County based on site specific criteria, i.e. size, property use type, and get detailed information on the proximity to other businesses and services within the area.



This application makes the search for available sites within the County easy and accessible and provides potential businesses and consultants with the information needed in a timely and effective manner. OED has additionally received a very positive response from the local commercial real estate community, who see this tool as a great way to positively promote their properties and all of Frederick County.

To view this and other applications provided by Enterprise GIS, please visit www.co.frederick.md.us/gis/mapServices/home.html. For more information on the 2008-2009 Technology Solutions Awards, please see the Public Technology Institute's web page at www.pti.org/index.php/ptiee1/more/481.

MARK YOUR CALENDAR

MSGIC

Quarterly Meetings

Summer

July 29
UMBC at Shady Grove

Fall

October 21
Frederick County

Executive Committee Meetings

May 13
June 10
July 8
August 12
September 9
Howard County Temporary Office
Bldg, Montgomery Room

Events

*ESRI Free Seminar
Creating Effective Webmaps*
May 19, Columbia Sheraton
<http://www.esri.com/events>

Conferences

MML Summer Conference
June 28 - July 1
Ocean City, MD

ESRI UC
July 13 - 17
San Diego, CA

MACo Summer Conference
August 12 - 15
Ocean City



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