

# WELCOME

## GIS: Do More With Le\$\$!

In an unprecedented time of budget cuts and the tightening of belts, we find ourselves looking for ways to do more with less. By utilizing the resources we have to the best of our abilities, we find ways to bridge the gaps left by cuts in the budget. For years now GIS has been working its way to the forefront of many agencies because of its ability to increase productivity and find solutions. Many agencies are using their GIS resources for navigating through shrinking budgets and reduced manpower resources.

The South Florida GIS Expo is helping to bridge that gap by providing an environment for networking with other GIS professionals and learning how they are doing more with less. These are new and challenging times we live in. We must find new and diverse ways to solve the problems of today with diminishing resources, and GIS is on the cutting edge. The SF GIS Expo is definitely a place where you can Do More with Le\$\$.

The Expo is a free conference in its 16th year, offering an opportunity for training, data sharing, and networking; along with the latest in GIS Technology. Join us at this year's SF GIS Expo and find out ways GIS can help you "***Do More With Le\$\$***".

South Florida GIS Expo Committee  
2009 South Florida GIS Expo  
October 8th - 9th, 2009  
Palm Beach County Convention Center

# SPECIAL ACTIVITIES

**Registration** - Thursday ( 7:30 a.m to 4:00 p.m. )  
Friday ( 8:00 a.m. to 3:30 p.m. )

**Continental Breakfast** - Thursday ( 7:30 a.m. to 8:15 a.m.)  
Friday ( 8:00 a.m. to 8:30 a.m. )

**Exhibit Hall\*** - Thursday ( 12:00 p.m. to 6:30 p.m.)  
Friday ( 8:00 a.m. to 3:30 p.m.)

**Thursday Evening Social** - Thursday ( 4:30 p.m. to 6:30 p.m. )

Join us in the Exhibit Hall for appetizers, vendor raffles and an opportunity to meet the 2009 South Florida GIS Expo Patrons and Exhibitors.

For one night and one night only, the South Florida GIS Expo will be hosting the musical style of James Barton & Mark Sinkhorn, aka Engineer's with Rhythm (EWR). Please join EWR and the rest of the Committee at the Thursday night social and hear what happens when engineers learn how to play guitars and other musical instruments, and then are allowed to play those instruments in public. Everyone will be talking about it at Friday's sessions, so don't miss the action!

**Job Board** - Thursday and Friday ( 9:00 a.m. to 4:00 p.m. )

Resumes and vacancies can be posted on the Job Board in the Foyer by Registration.

**Poster Exhibits** - Thursday and Friday

Categories for posters to be displayed throughout the Expo include Best Project Presentation, Best Analytical Presentation and Student Poster. Judging of posters will take place Thursday between 4:00 and 5:00 p.m. Winners will be announced at the Friday 9:30 a.m. break.

There will also be a separate Best of Show Poster voted on by Conference attendees and announced at the afternoon break on Friday.

**Lunch** - Friday ( 12:00 p.m. to 1:00 p.m. )

Light lunch available in the Exhibit Hall.

*\* Note: The Exhibit Hall will open for exhibitor set-up only on Thursday from 7:30 a.m. until 11:30 p.m.*

# Thursday Keynote and Workshops

## October 8, 2009

	7:30	8:15	8:30	12:00	2:00	3:15	4:30 - 6:00
Room 2A	<b>Registration Opens / Continental Breakfast</b>	<b>Welcome</b>		<b>Exhibit Hall Opens / Lunch on your Own</b>	<b>CDM</b>		<b>Thursday Night Social in Exhibit Hall</b>
Room 2B			<b>Geocortex / Latitude Geographics</b>				
Room 2C							
Room 2D			<b>ESRI</b>		<b>Ask the Panel of GIS Experts</b>		
Room 2E			Creating Effective Web Maps		<b>ROLTA ORION</b> The Impact of GIS in Economic Development: How Georgia Power has Harnessed another Kind of Power to Create Wealth in Georgia	<b>Sean McGinn City of Boca Raton</b>  Vertical Application Development	
Room 2F					<b>TOPCON Positioning System Inc.</b> 3D Mobile Mapping	<b>TOPCON Positioning System Inc.</b> GIS Real-Time Data Exchange	

## Friday Presentations (a.m.) - October 9, 2009

	8:00	8:30	9:30	10:00	11:00	12:00
Room 2A	<b>Registration Opens / Continental Breakfast in Exhibit Hall</b>	<p>Jim Barnes Village of Wellington</p> <p>GIS Planning and Management</p>	<b>Registration Opens / Continental Breakfast in Exhibit Hall</b>	<p>Scott Burton - BSO</p> <p>Creating the Common Operating Picture: Leveraging Enterprise GIS for Public Safety</p>	<p>Jennifer Marangos City of Boca Raton What can FLURISA do for you?</p>	<b>Lunch in Exhibit Hall</b>
Room 2B		<p>Katie Lelis Broward County Save time and water with GIS analysis</p>		<p>Randal Krejcarek City of Delray Beach As Built Retrieval on a Shoestring</p>	<p>James Barton Chen and Associates Florida Utility User Group</p>	
		<p>Katie Lelis Broward County NatureScape and GIS</p>		<p>Randal Krejcarek City of Delray Beach Sidewalk Inventory on a Shoestring</p>	<p>David Baron - City of Sunrise - Streamlining the Validation Process of Street Centerline Address Ranges</p>	
Room 2C		<p>Rosanna Rivero Everglades Foundation Lake Okeechobee: Integration of Historic Data Sources to Reconstruct Changes</p>		<p>Ahmad Salah Stanley Consultants Infrastructure Needs Assessment For Land Use Planning in Salt Lake County, Utah</p>	<p>Gordon Strassberg NOAA</p>	
		<p>Iliana Saraiva City of Miramar Miramar: Foreclosure Analysis Using GIS</p>		<p>Rachel Starner Stanley Cosultants Djibouti, Africa – Mapping for Success</p>	<p>Verification of Gridded Morning Temperatures at NWS Miami, FL</p>	
Room 2D		<p>Kelly Ratchinsky Palm Beach County myGeoNav – Make it your own!</p>		<p>Jim Barnes Village of Wellington Neogeography: What's Old is New Again</p>	<p>Steve Kasten Surdex Sufficient Orthophotography Projects</p>	
Room 2E		<p>Andrew Pickford BAE Systems</p> <p>What's New in GIS &amp; Geospatial Technologies</p>		<p>Michal Krell - NASA Regional Application Center at FIU TerraFly for Your Website</p>	<p>Nancy Lyman City of Sunrise Implementation of Web Applications using LGGeoBladeWeb</p>	
Room 2F		<p>Jason Learned FDOT District 4 2009/10 Roadway Atlas</p>		<p>Gerald Gawaldo PalmTran Palm Beach County Transit Asset Management</p>	<p>Juan Tobar - SFWMD Objective and Quantitative Horizontal Accuracy for Parcel Based Features</p>	

## Friday Presentations (p.m.) - October 9, 2009

	1:00	2:00	3:00	3:30
<i>Room 2A</i>	Nestor Navarro Engenuity Group  Augmented Reality: The Future of GIS	Ronald Drummond City of Coconut Creek Enhancing GIS for Improved Preparedness	<b>Break in Exhibit Hall</b>	Richard Pascoe PhotoScience, Inc. Implementing and Growing a Large-Scale, Web-Based GIS at a Government Agency
<i>Room 2B</i>	Trevor Feagin City of Tamarac Enterprise GIS for Tamarac Florida Stretching the Budget	Clara DiBella Palm Beach County GIS-Helping Palm Beach County Stay in the \$Green\$		Chris Tolken -Munsys, Inc. Using Flex to Do More With Less – How Technologies Deliver Solutions for Web Mapping Paradigms
<i>Room 2C</i>	Chris Ogier Woolpert  LIDAR Investment Strategies: Why Terrain Modeling Makes Sense Now More Than Ever	Ugur Dagkilog Quantitative Assessment 2 and 4 ft sea level rise on Broward County Land-Use  Kevin Mayo - FlipSideGeo -NPBCID Facilities Inspections and Reporting Using ArcGIS Server		Robin Olsen JSSInc  Using Collective Efficacy and Mapping to Understand Youth Violence in Miami-Dade
<i>Room 2D</i>	Irene DeGroot Town of Davie The Davie Story – Town Wide Enterprise GIS Implementation	Brandon Tolle Navigation Electronics Mobile GIS What are the True Benefits?		Karyn Tareen GeoCove  Using ArcGIS Mobile for Data Collection
<i>Room 2E</i>	Frank Veldhuis Northstar Geomatics  Mapping public service requests using GIS	Jose Diaz-Marin PBS&J Integrating ArcGIS Web Services with Google Earth API based 3D/4D web map portal		Cheney Shreve ITT VIS Incorporating image pro- cessing analysis into GIS workflows: Image Process- ing Analysis Case Studies
<i>Room 2F</i>	Frank Conkling Panda Consulting  The Cadastral Fabric: A Look Ahead at the Future of Parcel Mapping	Charles Roberts-FAU Nearshore Reef Mapping in Palm Beach County  Ray Miller -Dewberry Aerial Photointerpre- tation of Plant Com- munities in the Lake Apopka North Shore Restoration Area and Marsh Flow-Way		Joseph Helkowski AECOM  Spatial Analysis of the Kissimmee River Floodplain for Hydrologic Suitability of Broadleaf Marsh

# October 8, 2009 Workshops

**8:30 a.m. - 12:00 p.m.**

## **ESRI Workshop Creating Effective Web Maps**

*Adam Carnow, Account Executive - ERSI, Inc.*

### **Room 2D**

This presentation includes videos and live demonstrations. Learn how to deploy fast, modern web maps using ArcGIS version 9.3.1. See how you can use ArcGIS tools and free resources to create effective online applications that meet today's high expectations for Web mapping. By making their authoritative data available via fast, effective Web maps, GIS professionals give people throughout their organization the spatial intelligence they need to make better decisions. This workshop will show you how to:

- Deploy modern Web applications using the ArcGIS APIs for JavaScript, Flex and Silverlight
- Create dynamic maps that render quickly
- Get rapid and easy access to online content available via ArcGIS Online

**2:00 p.m. – 4:30 p.m.**

## **CDM Workshop Ten Ways to Blow your GIS Budget**

*Andrew Baranowski - GISP, South Florida & Caribbean GIS Manager - CDM*

### **Room 2A**

1. Use sub centimeter survey crews to collect location data for features readily visible in your Ortho Imagery.
2. Create robust custom interfaces to replicate out of the box solutions.
3. Hire a highly skilled applications developer to do work that can be performed by an intern.
4. Avoid participation in the local GIS community – It's much more fun to learn by your own mistakes.
5. Maintain a duplicate data set that is already being maintained by the owner of the data set.
6. Remove those pesky QC activities from your work flow.
7. Adjust survey data to fit aerial Imagery that has a lower spatial accuracy. This one is great because you can repeat the evolution every time you receive updated Imagery.
8. Use outdated software to avoid the hassle of learning how to use the newer releases.
9. Build and implement a GIS solution with no input from the stakeholders.
10. Use freeware to avoid paying those costly annual maintenance and support fees!

## October 8, 2009 Workshops 2:00 p.m. – 4:30 p.m. (cont.)

### **Geocortex / Latitude Geographics**

#### **Maximizing Your Investment with ArcGIS Server : An off-the-shelf Approach**

*Brock Kingston, Web Solutions Manager - Geocortex / Latitude Geographics*

#### **Room 2B**

How many times have you heard, ‘Oh, we can build that!’? ...Tired of paying to re-invent the wheel? Concerned about the never ending costs of maintaining custom code? Take a look at an out of the box web GIS application framework that will help you efficiently deliver productivity enhancing web GIS applications, and keep you closely aligned with ESRI’s next generation server technology. Join the debate to learn why organizations choose to make use of COTS reporting, non-spatial database linking, administration and application framework tools for ArcGIS Server.

#### **A Dashboard Approach to Gaining Insight into ArcGIS Server**

*Brock Kingston, Web Solutions Manager - Geocortex / Latitude Geographics*

#### **Room 2B**

Pressured to demonstrate return on investment (ROI) with ArcGIS Server? Curious how well your users interact with your sites? Struggling to pinpoint application bottlenecks or understand where performance-enhancing improvements are required? Learn about how other organizations like yours are doing it! Geocortex Optimizer from Latitude Geographics is a software utility that captures, organizes, analyzes and reports information about your ArcGIS Server sites and related infrastructure. With Geocortex Optimizer, you can measure and optimize the performance of your ArcGIS Server, understand and communicate how people are actually using your ArcGIS Server applications, and maximize the uptime of your applications.

#### **Fleet / Asset Tracking with ArcGIS Server API’s**

*Brock Kingston, Web Solutions Manager - Geocortex / Latitude Geographics*

#### **Room 2B**

More than a dot moving across a screen! Managing mobile assets and fleet tracking via web-GIS brings with it the challenge of unifying multiple technologies and the promise of flexible, cost-efficient information and data. Learn how organizations are leveraging the ArcGIS Server API’s combined with core Automated Vehicle Location (AVL) functionality and core out of the box web GIS functionality to deliver robust, next generation Web GIS AVL applications.

### **Ask the panel of GIS Experts**

#### **Room 2D**

Ad Hoc problem solving workshop. Bring your specific questions for the panel to discuss.

## **October 8, 2009 Workshops 2:00 p.m. – 4:30 p.m. (cont.)**

### **ROLTA ORION**

#### **The Impact of GIS in Economic Development: How Georgia Power Harnessed Another Kind of Power to Create Wealth in Georgia**

*David Kingsbury, Director of Information Systems - Rolta Orion*

#### **Room 2E**

Local Governments and utilities have discovered the importance that GIS has in their economic development organization, and their role in growing the economy of the areas they serve. As a result, Georgia Power's Economic Development group is using the power of GIS to showcase available properties and other key datasets to its users in a highly intuitive GIS web environment. They understand that having state-of-the-art GIS web application is critical in order to maintain its role as leaders in economic development in the state. With its SelectGeorgia.net GIS web application, Georgia Power has continued its long history of leveraging innovations in GIS technology to attract new business and retain existing industries.

The session will cover how Georgia Power set up their economic development GIS capabilities and how they use state-of-the-art GIS and enterprise web technology that has recently won them ESRI's Special Achievement in GIS (SAG) Award by creating an exciting user experience that has been highly successful in creating wealth in Georgia.

### **Vertical Application Development (3:00 p.m. – 4:30 p.m.)**

*Sean McGinn, GIS Coordinator - City of Boca Raton*

#### **Room 2E**

The City of Boca Raton has reengineered the application design process to include simple and intuitive targeted applications that provide the necessary functionality, with the familiarity and simplicity of Google Earth. The vertical web based applications include a parcel management application with public and departmental views, mailing label generation, Pictometry oblique imagery and automated updating, and a city services application locating services nearest an address (including zoning district, land use, school district, and flood zones). The presentation will include demonstration of the above applications and a discussion on a web based real time bus routing with mobile phone access project and a web-based traffic camera and traffic calming site scenario.

## **October 8, 2009 Workshops 2:00 p.m. – 4:30 p.m. (cont.)**

### **Topcon Positioning Systems Inc. 3D Mobile Mapping**

*Dave Henderson, National Sales Manager - Topcon Positioning Systems Inc.*

#### **Room 2F**

Recent technological advancements are fueling the capability to increase GIS database accuracy as well as the ability to acquire, update and use that data faster than ever.

Join us to explore how new GIS field data collection solutions are specifically “driving” this advancement by using a plug and play combination of sensors including LIDAR, GNSS tracking and positioning, digital imaging and Inertial Measurement Unit (IMU) technology. The flexible IP-S2 system from Topcon is mounted on a vehicle and acquires accurate 3D “point cloud” data combined with colorful digital images of the area while driving at normal speeds.

The IP-S2 maintains accurate positioning in obstructed areas such as under bridges and through tunnels.

The position data is accurately time stamped, geo-referenced and can be used to assign GIS attribute information, or make calculations from the comfort of your office. Measure distances between features or the lengths and widths of features on the screen. With the IP-S2, field re-visits are virtually eliminated and field personnel are safely off the streets and out of harms way. Data is completely compatible to your GIS database. Applications include asset management, utilities, engineering and infrastructure. Come and see what this system can do for you!

### **Topcon Positioning Systems Inc. GIS Real-Time Data Exchange**

*Dave Henderson, National Sales Manager - Topcon Positioning Systems Inc.*

#### **Room 2F**

Recent technological advancements are fueling the capability to increase GIS database accuracy as well as the ability to acquire, update and use that data faster than ever.

Join us to explore how new field data collection solutions are specifically driving this advancement. With integrated technologies such as cellular modems and the modular designs, users can easily access real-time correction data to get high accuracy measurements immediately in the field. See how field software allows users to configure simple data collection forms and to upload and download data from a GIS server directly in the field. As a result accurate data is available at your fingertips in the field and decisions can be made instantaneously.

In addition to accurate real-time position measurement data, the integration of technologies such as digital camera right into the GPS device help users improve the accuracy and usability of all parts of the GIS database.

# October 9, 2009 Presentations

**8:30 – 9:15 a.m.**

## **GIS Planning and Management**

*Jim Barnes, Director of Operations - Village of Wellington*

**Room 2A**

Implementing GIS presents a unique set of challenges. Even the most well funded project can fail due to poor planning. The ever widening availability and continual advancements in technology have made it impossible to ignore that we live in a perpetual atmosphere of change. Planning for GIS is not a one-time event but an ongoing process. More and more, organizations and public policy makers have identified GIS as important to their objectives. Reaping the benefits and full potential of GIS, however, requires coordination, collaboration, and an enterprise view of GIS management. To that end, GIS planning is equally important if all objectives are to be achieved. This presentation will review the necessary ingredients to successful GIS implementation paying particular attention to GIS planning and management strategies for success.

## **Save Time and Water with GIS Analysis**

*Katie Lelis, GISP - Broward County Natural Resources Planning and Management*

**Room 2B**

Predicting future water supply is tedious and time consuming. Ms. Lelis developed a time saving GIS methodology, and used it to determine water demands every five years through year 2035. Analyses were done for each water utility service area and when presented the results illustrated water shortages and excesses on a regional level.

## **NatureScape and GIS (9:15 a.m. – 9:30 a.m.)**

*Katie Lelis, GISP - Broward County Natural Resources Planning and Management*

**Room 2B**

See what Broward County is doing to promote water savings through NatureScape habitat certification and NatureScape Irrigation evaluations. Over 2,500 habitats have been certified, making Broward the first county to be certified as a Community Wildlife Habitat in the country. Over 500 million gallons of water annually have been saved through the NatureScape Irrigation program. Habitat data is managed using a GIS database and countywide and municipal maps are used to illustrate water savings and habitat certifications.

## **October 9, 2009 Presentations - 8:30 – 9:15 a.m. (cont.)**

### **Lake Okeechobee: Integration of Historic Data Sources to Reconstruct Physical Features from 1913 to the Present.**

*Rosanna Rivero, GIS Scientist - Everglades Foundation*

#### **Room 2C**

This presentation shows results from research focused on historic changes to the physical features of Lake Okeechobee by integrating various sources of data into a GIS analysis, including written historic accounts, engineering reports, and historic bathymetry, maps, and data from U.S. Coast and Geodetic Survey and the National Oceanic and Atmospheric Administration. Pre-drainage maps from 1913 and 1925 were geometrically corrected to match existing GIS datasets, and features such as bathymetry points, shorelines, and in-lake islands were digitized and integrated using ArcGIS. The final portion of this presentation will focus on a 3D visualization of various historic stage scenarios, and derived measurements on changes in the physical features of the Lake.

### **Miramar Foreclosure Analysis Using GIS (9:15 a.m. – 9:30 a.m.)**

*Iliana Saraiva, GIS Analyst - City of Miramar*

#### **Room 2C**

This pilot study performs a spatial analysis using Geographic Information Systems (GIS) technology for the foreclosure process. The purpose of this study is to examine the relationship between the foreclosure process and neighborhood characteristics. It then explores how GIS, combined with other spatial analytical tools, can provide the necessary research environment for processing and analyzing housing and mortgage data. The powerful GIS data mapping and visualization functionality facilitates spatial explorations of the data. Also, its strong spatial querying and overlay capabilities significantly aid with data organization and management. Results showed that although some significant relationships were supported by path analysis, not all correlations were strong enough to assure the conclusion that there was a direct effect between foreclosure rates and neighborhood demographics.

## **October 9, 2009 Presentations - 8:30 – 9:15 a.m. (cont.)**

### **myGeoNav – Make it your own!**

*Kelly Ratchinsky, Countywide GIS Coordinator - Palm Beach County*

#### **Room 2D**

Palm Beach County will soon publish a new Internet Web application, called “my-GeoNav”, that can be utilized by other organizations to quickly get GIS into the hands of decision makers. The presentation will cover some techniques you can use to customize your use of this web application to the specific needs of your organization. In addition, we’ll review all the tools and reports that can be generated on the fly. If you really want to “Do More With Le\$\$” don’t miss this one!

### **What’s New in GIS & Geospatial Technologies**

*Andrew Pickford, Regional Manager - BAE Systems*

#### **Room 2E**

This presentation will touch upon current GIS Technologies that are being implemented and used by local governments. City websites, incident preparation & management, and LiDAR data are a sample of the topics that will be discussed.

### **FDOT District 4 2009/10 Roadway Atlas**

*Jason Learned, GIS Coordinator - FDOT District 4*

#### **Room 2F**

The District 4 Roadway Atlas is an annual publication of the Transportation Statistics Office at the Florida Department of Transportation District 4. 2009 marks the 3rd multimedia edition of the Atlas. The Atlas has evolved from a paper version into a comprehensive, multimedia product, containing an expanded range of maps in both static and interactive format.

## **October 9, 2009 Presentations - 10:00 – 10:45 a.m.**

### **Creating the Common Operating Picture: Leveraging the Enterprise GIS for Public Safety.**

*Scott L. Burton - Broward Sheriff's Office*

#### **Room 2A**

The presentation provides insight to the issues, strategies, and lessons learned as a result of implementing an enterprise GIS. The enterprise system is designed to empower Police, Fire-Rescue and Emergency Operations through geospatial applications and information to protect and serve the residents of Broward County. In 2001, the Broward Sheriff's Office (BSO) developed a geospatial infrastructure that enabled a common operating picture from desktop GIS, to web-based GIS, to mobile GIS. Attendees will learn how innovative implementation of ESRI's address locator services, geodatabases, map service, map caching, web mapping, desktop mapping and mobile mapping capabilities are being used by BSO to enhance access, usability, and dissemination of public safety information. Several enterprise applications (crime analysis & crime intelligence, first responder routing & response, fire-rescue analyses, and hurricane preparedness) will be demonstrated

### **As-Built Retrieval on a Shoestring**

*Randal L. Krejcarek, P.E., LEED AP, GISP - City of Delray Beach*

#### **Room 2B**

During the last construction boom, as-built information played a major part in almost every development project in Delray Beach. The City had an existing ACCESS database which allowed a few employees to query as-built file locations. Under this old process, people requesting as-built(s) typically only knew the street name where the proposed project was to be located. This database was designed primarily to query by project number or project name. Query by area was limited to quarter sections of the City. If by chance the correct as-built(s) were located then they had to be retrieved from their file location, printed and sent to the requester. The new as-built retrieval application had to accomplish several goals; a street segment level search that provides a list of all projects adjacent to that street segment, eliminate the need for paper copies, and reduce staff time spent on as-built retrieval requests. This presentation will demonstrate how Delray Beach accomplished these goals and now provides all as-built(s) electronically.

## **October 9, 2009 Presentations - 10:00 – 10:45 a.m. (cont.)**

### **Sidewalk Inventory on a Shoestring (10:15 a.m. – 10:30 a.m.)**

*Randal L. Krejcarek, P.E., LEED AP, GISP - City of Delray Beach*

#### **Room 2B**

Your agency was notified that you will be receiving a Community Development Block Grant (CDBG) from the American Recovery and Reinvestment Act (ARRA). The funds will be utilized for constructing sidewalks in the target area identified in the CDBG. One minor issue must be overcome prior to spending any funding; namely, you need to know where to construct these sidewalks. You start by referencing aerial photos but quickly discover that there are limitations to their use. Another solution is needed and needed quickly, at very low to no cost. This presentation will demonstrate how Delray Beach overcame the issue of a needed sidewalk inventory in a timely and inexpensive manner.

### **Infrastructure Needs Assessment For Land Use Planning In Salt Lake County, Utah**

*Ahmad M Salah, GIS Specialist - Stanley Consultants*

#### **Room 2C**

This document summarizes an application developed to provide land use planners and decision makers an estimate of infrastructure capacity requirements using current and accepted industry and regulatory standards. The application was developed using ArcObjects and Visual Basic for Application (VBA) for use within ESRI ArcGIS (desktop). The application is designed to allow planners to load a county-wide land use background layer along with a list of county standard land uses. Planners select a “polygon of interest” to estimate infrastructure capacity requirements for a proposed land use within the polygon. Infrastructure analyzed in the application includes storm water, potable water, solid waste, sanitary sewer, electrical power, natural gas and traffic. The application then updates the land use attributes (e.g. polygon and served areas), selects neighboring polygons and generates a new polygon feature class. The available resources, whether county or city, are automatically loaded and the tool re-classifies the newly generated feature class to indicate if each neighboring polygon has enough infrastructure capacity (based on the available resources) to satisfy the needs calculated by the application. At the same time, the background land use map is dimmed for cartographic purposes. To facilitate the analysis process, the application loads the default internet browser and opens both regular and street views on Google Map©. A report summarizing the analysis is generated and exported to Microsoft Word. The application saves time and is designed to be interactive to let planners change the designated land use and quickly estimate the infrastructure needs associated with that change.

## **October 9, 2009 Presentations - 10:00 – 10:45 a.m. (cont.)**

### **Djibouti, Africa – Mapping for Success (10:15 a.m. – 10:30 a.m.)**

*Rachel Starner, GIS Analyst - Stanley Consultants*

#### **Room 2C**

Stanley Consultants is currently providing on-site Engineering Support Services to Camp Lemonier Naval Base in Djibouti, Africa - a base dedicated to humanitarian and security efforts in the region. As a part of these services, Stanley is building a GIS database that utilizes information from as-built drawings, survey field verification, local knowledge and Stanley engineer-expertise. This mapping service will ultimately provide an up-to-date inventory of base assets as well as survey-grade locations of buildings and utilities. With these efforts, the Navy will be able to implement better planning for future developments, provide other contractors with survey-accurate GIS data and Autocad drawings and, above all, create a reliable resource for coordinating construction on the base, which will save valuable time and money. Some of the unique situations confronted in this environment will be highlighted during the presentation.

### **Neogeography: What's Old is New Again**

*Jim Barnes, Director of Operations - Village of Wellington*

#### **Room 2D**

The term neogeography has been in use since 1922. Recently, its use has been associated with the geospatial web as a result of the increased appeal of mapping and geospatial technologies that occurred with the release of such tools, as Google Maps and Google Earth, and also the decreased cost of geospatial devices. Historically, traditional Geographic Information Systems (GIS) have developed tools and techniques targeted towards formal applications that require precision and accuracy. By contrast, neogeography tends to apply to the areas of approachable, colloquial applications. This presentation hopes to demonstrate the two realms can have overlap as the same problems are presented to different sets of users: experts and non-experts.

## **October 9, 2009 Presentations - 10:00 – 10:45 a.m. (cont.)**

### **TerraFly for Your Website**

*Michal Krell, Member of Technical Staff - NASA Regional Application Center at FIU*  
**Room 2E**

The NASA Regional Applications Center at Florida International University has developed TerraFly Maps, an innovative tool for the public and the private sectors' websites. TerraFly Maps provides aerial imagery accompanied by extensive local information. TerraFly allows users to navigate over cities, searching for geographical information and associated data including demographics, locations, services, restaurants, parcels, MLS real estate listings, environmental and more.

Recently, our Time Series application became available; it shows archive imagery of the location you choose. It lets you see the changes that occurred over time, the development of roads, and construction of buildings and landscaping.

Auto-Pilot is our creative tool to generate “guided aerial tours” over the locations of your preference. Audio files can be added to the application which enables users to create tAuto – Pilot in different languages.

The presentation will include demonstrations of TerraFly applications, instructions on how to embed TerraFly application in websites, and reveal the code itself to forum participants. There will be no charge GIS forum guests for the use of TerraFly or for on-line technical support.

## October 9, 2009 Presentations - 10:00 – 10:45 a.m. (cont.)

### Transit Asset Management

*Gerald B Gawaldo, Senior Transit Planner - Palm Tran/Palm Beach County*

#### Room 2F

Like most transit systems, Palm Tran began collecting route and general location data using the traditional clipboard, pencil and paper. These time consuming, inaccurate data sheets were eventually transcribed onto a spreadsheet. Upon moving from G-Sched to Trapeze in 2003, data options and the ability to query collected data began to expand. Almost simultaneously, with our implementation of ArcGIS and FDOT's initiation of Automated Transit Stop Inventory Management (ATSIM), all the needed mobile-desktop components were in place.

As part of ATSIM, Florida DOT purchased HP iPAQ 6945s which provided a fairly accurate Global Positioning System (GPS) and a 1.3 megapixel built-in digital camera. This greatly improved our on-going field data collection in a Windows Mobile environment. Beyond general stop location information (Latitude and Longitude, Municipal Jurisdictions), we expanded our now timely data compilation by identifying the type and conditions of amenities, determining how well areas of interest were served by transit service, assessing the accessibility for disabled persons and ADA compliance and upgrading the right-of-way appearance, etc. Updating digital images and data collection are an essential requirement for daily field work and maintenance activities.

Statistical bus stop information is collected, updated, and managed on a more timely basis in Trapeze. These data are then converted to ArcGIS and subsequently resides on the County-Wide GIS Enterprise system. Data standardization allows many agencies to use this data for query research. Bus Stop photographs are also stored in both individual Trapeze and Server bus stop files. Access to County-Wide GIS network data and Census data provide a more timely basis for analysis.

Palm Tran is currently implementing several Advanced Public Transportation Systems in anticipation of the GIS in Transit Conference: Automatic Passenger Counters (APC) in 50% of the bus fleet, Automated Vehicle Locators (AVL) in 100% of the fleet, new Automatic Voice Annunciation Systems, and computerized trip planners (Google Transit). Additionally, our new Intermodal Transit Center, which became operational in May 2009, will have 3 electronic wayside signs. A total of 19 will be initially installed system wide.

To successfully accomplish all of these goals, an accurate transit stop inventory is essential. My presentation will be on the implementation of and benefits derived from our experience.

## **October 9, 2009 Presentations - 11:00 – 11:45 a.m.**

### **What can FLURISA do for you?**

*Jennifer Marangos, GIS Analyst - City of Boca Raton*

#### **Room 2A**

Working with less is a reality of today's government experience. External organizations are essential to helping keep your technical skills sharp as well as your networking rolodex flush with contacts. The Florida chapter of the Urban and Regional Information Systems Association can be a valuable and cost effective resource for you. Please join me as I discuss what FLURISA is, what membership brings you, and what FLURISA can do for you!

### **Florida Utility User Group (11:15 a.m. – 11:30 a.m.)**

*James Barton, Senior Engineer - Chen and Associates*

#### **Room 2A**

The Florida Utility User Group was set up to focus discussions on the use of GIS in Engineering, Utilities and Public Works. The group discusses issues regarding utility database design, CAD / GIS integration, asset management, field applications, etc. It is open to anyone, beginner to advanced, with an interest in learning or sharing experiences about GIS in this work environment.

### **GIS Interns: A Lot of Bang for Your Buck**

*Jim Kirkpatrick, GISP, GIS Manager - City of Vero Beach*

#### **Room 2B**

Reduction in budgets and staff can have significant impacts on the production of a GIS department.

A low cost solution to maintaining production levels is to hire temporary, part-time GIS Interns. This presentation will review the history of the GIS Internship Program at the City of Vero Beach, our recruitment process, and the production benefits realized. Suggestions for implementing a GIS Internship Program, including budget, recruitment, and training concerns will be discussed.

### **Streamlining the Validation Process of Street Centerline Address Ranges (11:15 a.m. – 11:30 a.m.)**

*David Baron, GIS Intern - City of Sunrise*

#### **Room 2B**

Ensuring the accuracy of the address ranges of street centerlines by reading across fields directly in an attribute table can be not only cumbersome, but may lead to errors, especially after a major geometry "make over". But exporting this data to a commercially available spread sheet makes this task much easier as ranges can be manipulated and validated one street at a time.

## **October 9, 2009 Presentations - 11:00 – 11:45 a.m. (cont.)**

### **Verification of Gridded Morning Temperatures at NWS Miami, FL**

*Gordon Strassberg, Meteorologist - NOAA/National Weather Service Miami, FL*

#### **Room 2C**

Grid-based comparisons of official NWS forecasts and numerical model guidance along with objective analyses of observed weather can enable forecasters to assess, in real time, the accuracy of their forecasts. This paper describes a technique developed to compare 1200 UTC (morning) temperature forecasts from the NWS' National Digital Forecast Database with guidance from the National Digital Guidance Database and analyses from the Real Time Mesoscale Analysis. All calculations, such as creating difference grids, were made using a Geographic Information System. Gridded departures from the climatological normal 1200 UTC temperature were also generated to investigate potential correlations of forecast error with anomalous conditions.

Example graphics will be shown at both regional (NWS Southern Region) and state scales (Florida), together with results of additional detailed statistical comparisons based on tabular data created from the grids. The method allows forecasters to identify forecast or model errors and, through the use of an archive of the difference grids, see trends in forecast or model errors over the past week, month, and/or season. With this information readily available in a graphical and tabular format, forecasters and researchers can more easily recognize model or forecast biases, with the ultimate goal being more accurate forecasts.

### **Sufficient Orthophotography Projects**

*Steve Kasten, CP, PLS, PSM - VP Surveying and Photogrammetric Engineering, Surdex Corporation*

#### **Room 2D**

In these challenging economic times, many communities find themselves operating with reduced budgets. GIS Department digital orthophotography projects many times become the items that are removed from the budget to make ends meet. This presentation will focus on some novel methods that can be utilized to allow for the collection of current imagery at a reduced cost. The methodologies presented may enable you to complete your project in a sufficient manner with a reduced budget.

## **October 9, 2009 Presentations - 11:00 – 11:45 a.m. (cont.)**

### **Implementation of Web Applications using LGGeoBladeWeb**

*Nancy Lyman, GIS Coordinator - City of Sunrise*

*Curt Hinton, David Holdstock - GTG*

#### **Room 2E**

The presentation describes the implementation of Web applications using LG-GeoBladeWeb and ArcGIS server in Sunrise. Using the cutting-edge technology of LGGeoBladeWeb / ArcGIS server 9.3, the City of Sunrise is able to implement “easy-to-use” Web applications that provide near real-time access to existing corporate databases and GIS data. The Web enabled applications become a true testimony of the City’s ability to use GIS as an advanced tool to increase productivity and improve efficiency, especially in an economic downturn. This joint presentation will discuss:

- Sunrise Enterprise GIS overview

- GeoBladeWeb applications designed and developed by GTG to meet City’s needs

- GIS database integration

- Enhanced functionalities: water consumption search/address label printing/

- Building permit search

- Technical challenges, solutions and keys to success

- Application demonstration

### **An Objective and Quantitative Horizontal Accuracy Measure for Parcel Based Features**

*Juan Tobar, Supervisor Geographers - South Florida Water Management District*

#### **Room 2F**

The South Florida Water Management District (SFWMD) regulates water supply, water quality, groundwater withdrawals, and surface water withdrawals through the issuance of permits for these activities on specific land parcels. The District’s Regulatory GIS consists of 70,000 permit applications received between the mid-1970s to the present, spread over a 16 county jurisdictional area. In the late 1980s, when the GIS system was being developed, a lack of high accuracy base data and processing power resulted in a subjective accuracy assessment descriptor being recorded for each application. Today, with additional processing power and cadastre base data it is possible to generate an objective and quantitative horizontal accuracy measure for parcel based features.

# Notes

## October 9, 2009 Presentations - 1:00 – 1:45 p.m.

### **Augmented Reality; The Future of GIS.**

*Nestor Navarro, GISP, MCSA, Director of GIS / IT - Engenuity Group, Inc.*

#### **Room 2A**

Here we are again. On the doorstep of what we call, cutting edge.

We have been here many times, even as recent as last year, when we were looking at tools like Google Earth and Virtual Earth. Tools that allowed the average user to view data that was once limited to only large public or private agencies. We have seen hardware evolve into smaller and faster information devices that we can carry in our pockets. We have seen applications developed to take advantage of the new hardware as soon as it's introduced.

So that brings us to this year's topic, Augmented Reality; The Future of GIS. Some of you are now scratching your heads asking, "What is Augmented Reality, and is it contagious?" Wikipedia explains it as computer graphics objects (in our case, GIS features) blended into real footage in real time. At present, most AR research is concerned with the use of live video imagery which is digitally processed and "augmented" by the addition of computer-generated graphics. Think of it as "Terminator Vision" on steroids. We have all seen it at one time or another in movies or video games. But now is the time to see it as a way to advance the capabilities of GIS.

Even though we are looking at AR as a new GIS tool, it has been around for years with extensive research by the military. I think we've heard that before if you go back to the early days of your current GIS software package. Eventually, the technology works its way down to us so, better late than never.

This presentation will cover the realities of AR coupled with GIS. We will look at existing AR applications and hardware. We will examine how AR and current GIS data can be used for Utilities, Public Safety, Real Estate, Transportation and others. We will explore future GIS applications and tools that will take us one step closer the doorstep of the next cutting edge technology. We will then let the audience view a live demonstration of the technology at work.

Come with me if you want to see ...

## **October 9, 2009 Presentations - 1:00 – 1:45 p.m. (cont.)**

### **Enterprise GIS for Tamarac Florida Stretching the Budget**

*Trevor W. Feagin, GIS Manager - City of Tamarac*

#### **Room 2B**

The City of Tamarac, after several failures began to develop and enterprise GIS in 1995. Currently the City has and shares planimetric, parcel and utility maps throughout the City. Tamarac appears to be ahead of the majority of cities that are working on GIS development. The GIS effort used a cooperative approach within the City's departments and funding sources. Presently the City is finishing a major 5-year update that includes a new internet application for employees and the public, new color digital orthophotos and over 56 planimetric features. The GIS is used to provide support to Community Development, Public Works and the Utilities departments on a daily basis. The GIS provides as needed support to specific programs like disaster planning and recovery, and flood plain management. The City estimates a net annual financial benefit of between 319 and 489 thousand dollars. Mr. Feagin will discuss the steps, including costs and benefits, to developing a similar GIS and how the City uses a blend of in-house and consultant resources to stretch the project budget and get a better return on the money spent for GIS.

### **LIDAR Investment Strategies: Why Terrain Modeling Makes Sense Now More Than Ever**

*Chris Ogier, Group Manager - Photogrammetry & Remote Sensing, Woolpert*

#### **Room 2C**

In today's economy, state and local governments are being pressured to cut budgets across the board. Pressure to eliminate or delay much-needed terrain and inundation/flood mapping projects is an undeniable reality for today's mapping and environmental professionals. This presentation will focus on policy issues, return-on-investment strategies and creative strategies to fund LiDAR and flood-mapping projects. Additional topics covered will focus on merging marine bathymetry and terrestrial topographic data, and will include a general discussion of the broad-level implications of contracting at the federal and state levels as they apply to the mapping industry.

## **October 9, 2009 Presentations - 1:00 – 1:45 p.m. (cont.)**

### **The Davie Story – Town Wide Enterprise GIS Implementation**

*Irene DeGroot, GISP, GIS Manager - Town of Davie and Geographic Technologies Group*

#### **Room 2D**

This presentation will center around the strategic implementation of an Enterprise GIS at the Town of Davie. Discussion and examples will illustrate the use of GIS to eliminate redundancy, as well as, to improve interdepartmental cooperation and the efficient delivery of public services.

### **Mapping public service requests using GIS**

*Frank Veldhuis, Vice President - NorthStar Geomatics Inc.*

#### **Room 2E**

The Martin County Request for Service (RFS) is a resource that allows the public to request service from the County. Martin County leveraged the power of GIS to automate the mapping of RFS house flooding service requests after Tropical Storm Fay by using a combination of Oracle business tables, the parcel feature class, and event mapping. This automation is used today as a situation awareness system for the Field Operations Division of Martin County Engineering. Requests are routed to the proper County department and, if desired, the public can receive status updates or track the progress of their request.

### **The Cadastral Fabric: A Look Ahead at the Future of Parcel Mapping**

*Frank Conkling, Owner - Panda Consulting*

#### **Room 2F**

This presentation will explore the ESRI Cadastral Editor's new data structure, its concepts and physical characteristics. The presentation shall review conversion issues, the currently recommended editing and maintenance workflows, and share insights obtained through its experience of the benefits and limitations of the new structure and software.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m.**

### **Enhancing GIS for Improved Preparedness**

*Ronald Drummond, GIS Analyst - City of Coconut Creek*

#### **Room 2A**

The paper seeks to demonstrate how GIS can be enhanced to provide valuable information to help communities prepare for and respond to hazards. A study region, aggregated to census tract level, is created using HAZUS-MH MR3. Two scenarios are employed; one scenario looks at the damage estimates derived from default data in HAZUS-MH, the other utilizes updated building default data from some communities in the northern regions of the City of Coconut Creek. Data collection was done using a customized ArcPad application. To further enhance damage estimation as it pertains to flash flooding, an attempt is made at demonstrating how radar echoes are tracked and rainfall estimated using the Z-R relationship.

### **Streetscape / GIS – Helping Palm Beach County Stay in the \$Green\$**

*Clara DiBella, GIS/CAD Technician II - Palm Beach County*

#### **Room 2B**

Palm Beach County – Streetscape / GIS has been cultivating a ‘Green Shoot’. Come see how Streetscape uses GIS to assist in managing inventory, contract maintenance, permits, damage assessment and special projects.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m. (cont.)**

### **Quantitative Assessment of 2 and 4 feet Sea Level rise on the Broward County Land-Use using GIS**

*Ugur Dagkalic, Student - Florida Atlantic University*

#### **Room 2C**

Environmental pollution and global warming are perhaps the most important contemporary environmental issues. Due to global warming, melting of the glaciers and relevant sea level rises constitute another significant outcome of the environmental degradation. Nations have been looking for ways to mitigate pollution, associate with warming and take necessary precautions. According to National Oceanic and Atmospheric Administration (NOAA), sea level has been raising 1-5 mm each year around the continental US ([www.noaa.gov](http://www.noaa.gov)). However, each updated estimate addresses a faster deterioration therefore estimated time frames would be much shorter than expected.

Due to the rising sea level, low elevation coastal settlements face the danger of completely lying under the water within couple of centuries. In this respect, some coastal towns have revised their building codes accordingly. For instance, in Seattle, new building code proposals suggest new construction to be built above a certain elevation ([www.seattle.gov](http://www.seattle.gov)).

A part of the precaution measure has been estimation of the extent of sea level rise. In the up-coming decades, the impact of the sea level rise will be an important tool for Federal and local governments. For instance, projecting the impact on specific land areas will enable urban planning agencies to make long-term policy and decisions for those areas. In this manner, Geographic Information Systems (GIS) can be utilized for the estimation and impact of water rise and inform the local authorities and the public.

The State of Florida is an example of a low elevation settlement. Most of its urban areas are only a couple of feet above sea level and most of its shores are expected to lie under water within centuries. In this paper, a quantitative and visual analysis of the two and four feet sea level rise effects on Broward County is experimented along with quantitative impact on land-use categorized urban parts using ArcGIS 9.3 and its Spatial Analyst extension.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m. (cont.)**

### **NPBCID Facilities Inspections and Reporting Using ArcGIS Server (2:15 a.m. – 2:30 a.m.)**

*Kevin Mayo, Owner/Lead Developer - FLIPSIDEGEO*

#### **Room 2C**

Northern Palm Beach County Improvement District (Northern) is a Special District located in Palm Beach Gardens, Florida. Northern is responsible for infrastructure projects related to storm water control, waterway maintenance, utilities construction, roadway construction and environmental management within its unit boundaries. Northern performs field inspections of the facilities they maintain on an annual basis. A Facilities Maintenance Report is generated from the data collected in the field inspections. In the past, Microsoft Access was used to perform inspections and to create the annual reports. In 2009, Northern developed and implemented a custom ArcGIS Server/ArcGIS Server Mobile solution to integrate the Facilities Inspection and Reporting workflows into the Enterprise GIS. An ArcGIS Server Mobile application was written to perform the inspections in the field and an ArcGIS Server Web ADF Reporting Module was written to create dynamic reports in the office. The presentation will include an overview of the process and highlight the two custom ArcGIS Server applications.

### **Mobile GIS- What are the true benefits?**

*Brandon Tolle, MGI Sales - Navigation Eletronics*

#### **Room 2D**

Many of us have heard and used the term “Mobile GIS” but few truly understand what the term fully encompasses. Is this simply having some parcel data as a background map? A few aerials referenced with a street layer? Today Mobile GIS has the power to bring your entire GIS system into the field with the ability to edit, update and even add new features. Together with GPS integration, this now allows every GIS professional the ability to add valuable in-field attribution to the system while at the same time verifying and updating existing data. Through the use of mobile devices and tablet PC’s, we can now fully unlock the power of Mobile GIS. This presentation is geared toward educating the end user and front office personnel on the time savings and data management power that is available with Mobile GIS.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m. (cont.)**

### **Integrating ArcGIS Web Services with Google Earth API based 3D/4D web map portal**

*Jose Diaz-Marin, Sr. GIS Developer II - PBS&J*

#### **Room 2E**

Belvoir New Vision Planners (BNVP) is providing master planning, conceptual design and program integration, management, and oversight services under the directive of a Department of Defense Base Realignment and Closure (DoD BRAC) decision. This decision involves the relocation of an estimated 22,000 personnel (approximately 6,000 military personnel and 16,000 civilian employees and contract personnel) to the Fort Belvoir Army installation. The project includes development of the plans and vision to construct a seven (7) million square foot space, transportation systems, and supporting infrastructure to accommodate this transformation.

In order to assist in the management of such a complex program, a 3D/4D Web Mapping Portal was developed. This portal is a cross-platform, cross-browser web application used to visualize spatial data from multiple sources in a web-based easy-to-navigate 3D environment. The portal overlays multiple datasets and visualizes temporal spatial data, as well as providing the user with tools to create map markups, export workspace to Google Earth desktop, perform geocoding, object and area selections, and conduct geospatial analysis with ESRI's ArcGIS Server as the back-end GIS engine. The portal may be dynamically configured to include data layers from ArcGIS Server map services, as well as from a variety of KML-enabled public and custom web services. The front-end (UI) component of the portal is based on Ext JS AJAX framework and provides users with a smooth, desktop-like 3D navigation experience in a web browser. Google Earth plug-in API is used to host the 3D environment displayed within the web browser. Server-side custom data processing is implemented via geospatial web services that provide a gateway to ArcGIS Server geoprocessing capabilities, enabling a large number of users to perform complex analysis without acquiring per-user desktop GIS software.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m. (cont.)**

### **Nearshore Reef Mapping in Palm Beach County**

*Dr. Charles Roberts, Associate Professor of Geography - Dept. of Geoscience,  
Florida Atlantic University*

#### **Room 2F**

The Geoscience Research Center, in conjunction with the Department of Environmental Resources Management, has undertaken a multi-year reef mapping project of the hard rock reefs along the coast of Palm Beach County. While hand digitizing of reefs was the practice in the past, this project emphasizes a hybrid digital image analysis procedure that consists of performing unsupervised classifications in ERDAS Imagine, then bringing the raw and classified scenes into Adobe Photoshop and using three methods for correcting the resultant maps. The final raster imagery are converted into shapefiles, and viewed against the original images. A systematic survey of 24 portions of the resulting maps have produced an overall accuracy ranging from 95 to 100%.

## **October 9, 2009 Presentations - 2:00 – 2:45 p.m. (cont.)**

### **Aerial Photointerpretation of Plant Communities in the Lake Apopka North Shore Restoration Area and Marsh Flow-Way (2:15 a.m. – 2:30 a.m.)**

*Ray Miller, MA, GIS and Remote Sensing Analyst - Dewberry*

#### **Room 2F**

Lake Apopka has a history of more than 100 years of human alteration, beginning with the construction of the Apopka-Beauclair Canal in the late 1800s. In 1941, a levee was built along the north shore to effectively drain 20,000 acres of shallow marsh for farming. The discharge of water, rich in nutrients from agricultural and other sources, produced conditions that created a chronic algal bloom and resulted in loss of the lake's recreational value and gamefish populations.

Legislation passed in 1985 and 1987 mandated that the St. Johns River Water Management District (SJRWMD) develop and implement plans to restore Lake Apopka to Class III water quality. As a result, the SJRWMD has implemented a management and restoration plan aimed at making the lake's water quality fit for recreation and fishing. An important component of the plan includes restoration of wetland habitat in the previously farmed fields.

Ecological change in a restoration area can be effectively and economically monitored over time with the use of vegetation maps created from aerial photography. By comparing the maps from one period to another, detectable changes in vegetation communities can be identified. Quantifying plant community changes using this process can provide a measure of the success of restoration efforts in altered wetland habitats.

To track ecological change, SJRWMD contracted Dewberry to document and map vegetation communities within the North Shore Restoration Area and the Marsh Flow-Way of Lake Apopka. Using a combination of field reconnaissance, photogrammetry, stereoscopic photointerpretation and GIS, maps have been created over time showing vegetation communities within the project area. This time-series of maps can be used to analyze and identify changes in vegetation communities and their distribution.

This presentation will describe the methods used for mapping vegetation communities and will discuss the results achieved for the 2008 Lake Apopka vegetation mapping project.

## **October 9, 2009 Presentations - 3:30 – 4:15 p.m.**

### **Implementing and Growing a Large-Scale, Web-Based GIS at a Government Agency**

*Richard Pascoe, GIS Database Developer - Photo Science, Inc.*

#### **Room 2A**

Most government agencies are comprised of many business areas that involve different disciplines and staff that can benefit from access to spatial data. Serving GIS data across a department can be achieved through carefully assessing the needs of the users and creating a database that can be easily accessed using web-based GIS technologies. This presentation will show how GIS data is shared with users of all levels at the Florida Department of Transportation District 7 through the implementation of a web-based GIS solution involving GIS server infrastructure, comprehensive spatial database modeling, and a versatile GIS web application; all developed with the combined effort of FDOT District 7 and the consultant through a comprehensive user needs assessment. With this solution in place, the various business areas are able to view spatial data through a web interface that is easy to access and operate.

## October 9, 2009 Presentations - 3:30 – 4:15 p.m. (cont.)

### Using Flex to Do More With Less – How Modern Technologies can Deliver Solutions that Fit Current Web Mapping Paradigms.

*Chris Tolken - Munsys, Inc.*

#### **Room 2B**

Change is here to stay – especially in GIS! This presentation examines current changes in user expectations for web mapping and considers an example of how modern technologies can be used to provide maps over the web in new and more cost effective ways. User expectations are changing from a “one-map-fits-all” delivery to “appropriate maps where you need them”. Whether searching for hotels or homes on the web, users have come to expect any number of simple maps to be available depending on the context. As this change in user expectations ripples through organizations with their own spatial data, it presents a challenge for GIS specialists. No longer is a single, detailed map in a browser sufficient, we now need to be able to rapidly create any number of “need specific” web maps, all the while delivering them dynamically with ease and at a lower cost.

Munsys Flexmaps will be used as an illustrative example of a technology that supports the new user paradigm. Utilizing Adobe Flex technology, Munsys has changed the way maps are delivered on the Intranet or via the web. Configuring and deploying maps that deliver what they need, where they need, it in a familiar interface, is quick and easy. Users will no longer be forced to understand complex functionality and navigate through a myriad of legend layers. Flexmaps bring maps to the users without expecting users to become GIS experts.

This illustrative demonstration will show:

- How to rapidly configure any number of high impact maps
- Simply deploy them into existing web pages or applications
- Utilize base layers such as those provided by Google, Yahoo and Microsoft
- Serve data directly from the database into the browser
- Configure Tooltips, Callouts and Attribute display

## October 9, 2009 Presentations - 3:30 – 4:15 p.m. (cont.)

### Using Collective Efficacy and Mapping to Understand Youth Violence in Miami-Dade

*Robin Olsen, Research Associate - Justice & Security Strategies, Inc.*

#### Room 2C

The Mapping Research Project is a multi-year effort funded by The Children's Trust of Miami-Dade to shed new light on youth violence occurring in neighborhoods in Miami-Dade County. Justice & Security Strategies (JSS), the grantee for the Mapping Research Project, is applying neighborhood crime theories as a foundation to dissect and examine youth violence, and child exposure to violence. Data included in the project are:

neighborhood demographics	911 calls	health indicators
foreclosure information	ME homicides	service providers
land use	schools	community assets

Reports and informational maps from the project are designed to inform policy makers, foster and support cross-disciplinary collaborations and direct prevention and intervention efforts.

During this presentation, JSS will show how we have used multi-level mapping analyses to help communities arm themselves to better address violence in their neighborhoods. The presentation will:

- Identifying violence hotspots throughout Miami-Dade County.
- Use these hotspots to identify particular neighborhoods to study further.
- Use spatial data to develop a profile of these neighborhoods.
- Use Trimble devices in conjunction with social observation techniques to gather on the ground information about community characteristics.

## **October 9, 2009 Presentations - 3:30 – 4:15 p.m. (cont.)**

### **Using ArcGIS Mobile for Data Collection**

*Karyn Tareen, President - GeoCove*

#### **Room 2D**

Field data collection is critical for city and county management of assets. To modernize their workflow, some are utilizing custom mobile applications built using the ArcGIS mobile framework. Mission critical data such as code enforcement inspection or damage assessment data is uploaded to a central server using the live synchronization capabilities available through ArcGIS Mobile. Don't have ArcGIS Server Advanced? No worries, come hear how we've partnered to offer these applications inside a hosted environment!

Three custom applications will be highlighted:

- Code Enforcement - inspect, report and print code violations

- DASI - damage assessments for signalized intersections

- I2C - damage assessments for buildings, public facilities, and human services data collection. It also has a new feature to track pandemics.

### **Incorporating image processing and image analysis into your GIS workflows: Case studies demonstrating image processing and analysis capabilities utilizing the most recent software developments from ENVI (ITT VIS, Boulder, CO) and ESRI**

*Dr. Cheney Shreve, Technical Applications Engineer, ITT VIS*

#### **Room 2E**

As the availability and specificity of remotely acquired data continues to grow with technological advances, high quality imagery is more accessible and less expensive than it was in previous decades. Likewise, the demand for incorporating remotely sensed imagery into GIS-based analysis continues to increase. Professionals in both the remote sensing and GIS face the challenge of integrating these two fields. This work demonstrates the ease of use of common image processing techniques, advanced image analysis algorithms, such as feature extraction, integration, and mapping in the latest GIS-focused software package, ENVI EX, from ITT VIS, and ArcMap GIS software from ESRI. Case studies from land use and land cover analyses and extraction of man-made features performed jointly in ENVI EX and ArcMap are shown. Results show that the workflow approach in ENVI EX saves time compared to more traditional remote sensing approaches, and demonstrate both the ease of use and expansion of analytical capabilities accomplished by harnessing the utility of ArcMap. High and moderate resolution optical datasets are used for the case studies.

## October 9, 2009 Presentations - 3:30 – 4:15 p.m. (cont.)

### **Spatial Analysis of the Kissimmee River Floodplain for Hydrologic Suitability of Broadleaf Marsh**

*Joe Helkowski, Senior GIS Analyst - AECOM*

#### **Room 2F**

The South Florida Water Management District (SFWMD) has embarked on the Kissimmee Basin Modeling Operations Study (KB MOS) to identify alternative water control structure operating criteria to meet the flood control, water supply, aquatic plant management, and natural resource operations objectives of the Central and Southern Florida Project in the Kissimmee Basin. As part of this study, the SFWMD is developing new and modified operating criteria for the water control structures to achieve a more acceptable balance among the operating objectives. The Kissimmee Basin covers approximately 2,279 square miles and is the largest watershed draining into Lake Okeechobee, located in south-central Florida. The major waterbodies that comprise the basin include the Kissimmee Chain of Lakes to the north and the Kissimmee River and its floodplain to the south. As part of KB MOS, a spatial analysis was performed to define the location and targets for a set of Hydrologic Performance Measures for evaluating operating criteria to meet proper vegetation hydrologic conditions for the fully restored Kissimmee River floodplain. The objective of the tool (The Floodplain Spatial Analysis Tool) is to evaluate floodplain inundation depths and durations for purposes of determining hydrologic suitability for vegetation communities.

The Floodplain Spatial Analysis Tool (FSAT) generates, from a hydraulic model output, daily stage raster datasets; converts those to water depths, then classifies water depths on a grid cell by grid cells, into water depth and/or duration classes. The criteria applied in classification represent hydrologic suitability for key vegetation communities. The analysis is performed in two steps. The first step in the FSAT is the generation of daily stage raster datasets from the Kissimmee River Floodplain Hydraulic Model output. A batch process was written in Python and run in the ArcGIS 9.2 platform to process the 10,277 daily tables. The second step in the spatial analysis is the classification of daily stage data into vegetation community hydrologic suitability classes. Due to the complexity of this evaluation and the need for flexibility in the coding, as well as fast processing of results, this portion of the tool was written in FORTRAN 90. A total of seven different hydrologic suitability evaluations were performed using the criteria provided by the SFWMD. The final results were maps of the floodplain defining the spatial distribution of the vegetative community classifications for three climatic conditions as defined by rainfall (Wet, Normal, and Dry). As a measure of quality control and validation, a 1954 vegetation map and survey cross-sections of the Kissimmee River basin were used to validate the generated maps. Results suggest that the amount of Broadleaf Marsh present in the pre-channelization floodplain is roughly comparable to the amount of Broadleaf Marsh predicted from modeled hydrology within the restored floodplain. From this information new targets and two locations were then defined by the SFWMD scientist for the Hydrologic Performance Measures.

# THE 2009 SOUTH FLORIDA GIS EXPO

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