2010 New York State Geographic Information Systems (GIS) Conference
Sunday-Tuesday, October 24-26, 2010

The Saratoga Hilton in **Saratoga Springs**, NY

Expect the best—Quality Presentations, Outstanding Posters, and real solutions from our exhibitors!

The NYS GIS conference has a long standing tradition of providing attendees with an opportunity to meet fellow New Yorkers active in the GIS field, exchange information and real experience, and seek solutions to your geographic data management needs.

GIS Ablaze
For the first time ever, Platinum and Gold Sponsors were given the opportunity to stand center stage and impart their wisdom in a power-packed presentation of GIS knowledge, and tidbits of "*Who knew you could do that with geospatial information?"* in our newly launched **"GIS Ablaze" Ignite Sessions**. These 5-minute sessions were held during lunch on Monday and attendees had the opportunity to vote on a favorite. The winning Sponsor earned an exclusive highlight of their session on the NYS GIS Conference website.

The goal was to provide entertaining presentations that imparted new knowledge to conference attendees. Each presenter gave a 5 minute visually oriented presentation in which each slide advanced automatically every 15 seconds. The presenter had to know their material or missed the opportunity to comment on the slide as they rapidly advanced. The session was a lot of fun and provided a high impact message for the attendees.

For more information on **Ignite Sessions**, go to: **http://igniteshow.com/**.

2010 Sponsors - New this year - IGNITE session

Platinum Sponsors - "GIS ablaze" ignite session
- Esri

Platinum Co-Sponsors - Monday Lunch
- Cityworks
- Transmap

Gold Sponsors - "GIS ablaze" ignite session
- Pictometry International

Silver Sponsors
- Hewlett-Packard

Bronze Sponsors
- MRB Group
- Bowne Management Systems, Inc.

Monday Poster Session/Reception Sponsor:
- CNY ASPRS
- Map It Out

In-Kind Sponsors
- GITA
- MapSpeller

Invited Speakers for 2010 26th Annual New York State GIS Conference

Kass Green will deliver the keynote address on Monday, October 25 at 9:00 am

Presentation Title: "The Geospatial Revolution. What, next, now?"

Whether you are a member or just an observer of the geospatial community, you know something has changed. Innovations over the last 5 years have finally brought geospatial technologies and solutions to the consumer – the legendary "end user". The keynote presentation will explore why we are in a geospatial revolution now, what changes are likely to occur in the near future, and how you can make a difference – in your profession, and in the world.

About Kass Green

Green is president of Kass Green & Associates and consults on geospatial strategy, technology, and policy issues to private, educational, and public organizations. An author of numerous book chapters and articles, Green's 20 years of research and application development focuses on the integration of GIS and remote sensing for environmental and policy analysis.

If anyone can provide a perspective on the "consumerization" of satellite imaging and its impact on the profession of remote sensing science it's Kass Green. Editor in Chief Joe Francica recently sat down with this true **remote sensing rock star** in Scottsdale, Arizona to discuss the impact of Google Earth on the remote sensing, privacy issues, and how change detection applications of remotely sensed data might well become just another feature provided by Google. *Reprinted with Permission, Copyright 2010, Directions Magazine.*

Directions Magazine

Video Link of interest: **The Geospatial Revolution Project**

Monday Evening Banquet Speaker: Jack Knowlton, Owner of Funny Cide race horse

Sackatoga Stable LLC was founded by Jack Knowlton and Ed Mitzen in July 2006. Jack has had an integral role, serving as a Managing Partner since 1995 and as the racing manager for 15 racehorses, including 2003 Kentucky Derby and Preakness winner Funny Cide.

Funny Cide - Click to **watch Funny Cide WIN!**
- **Color:** Chestnut
- **Gender:** Gelding
- **Birthdate:** April 20, 2000

Top Funny Cide Question - this horse has his own website
> **Question:** How did Funny Cide get his name?
> **Answer:** Funny Cide's name was derived from the names of his sire (father) and dam (mother) who were Distorted Humor and Belle's Good Cide.

Statistics
- **Lifetime Record:** 12 Starts; 6 Wins; 2 Seconds; and 2 Thirds.
- **Lifetime earnings:** $3,204,485
- Highest earnings of any New York Bred in history.

Funny Cide
photo (c) Barbara Livingston

Monday's State of the State Address by Bill Johnson

Bill Johnson is Assistant Deputy Director for the New York State Office of Cyber Security, where he functions as Operations Manager and oversees the GIS program. He also Chairs the 19-member NYS GIS Coordinating Body which provides stakeholder steering to the Statewide GIS Coordination Program. Previously, Bill was Manager of Geographic Information at the agency.

Agenda
26th Annual New York State GIS Conference

Sunday, October 24, 2010

Sunday Pre-conference Training:

12:00 - 4:00 PM *Educator's Workshop*, Amy Work, Carol Burch, Tom O'Neil, & Bob Jones at Skidmore College

12:00 - 4:00 PM *LiDAR Workshop*, Ben Houston & Karen Kwasnowski at Skidmore College

1:00 - 4:00 PM *OpenSource GIS Workshop*, Bryan McBride at Skidmore College

1:00 - 4:00 PM *Positional Accuracy Assessment Seminar*, Kass Green in Room Broadway 4 at the Saratoga Hilton

2:00-4:00 PM On-site registration and check in

5:00 - 7:30 PM Kick-off Reception at **National Museum of Racing and Hall of Fame**
- 5:30 - 6:30 - Tour the museum exhibits
- 5:00 - 7:30 - Refreshments in the sculpture galler with live music and networking

Monday, October 25, 2010

7:30 - 8:30 am Registration check in and breakfast in the Gallery

8:30 - 10:00 am in Saratoga Ballroom
- Welcome and opening remarks by conference co-chair Eddie Bevilacqua, SUNY College of Environmental Science and Forestry
- The Annual State of the State by **Bill Johnson**, Assistant Deputy Director, New York State Office of Cyber Security
- "The Geospatial Revolution. What, next, now?" Kass Green, president of Kass Green & Associates

10:00 - 10:30 am Visit our exhibitors and Coffee Break in City Center

10:30 am - 12:00 pm Session 1

Time	Session A in Broadway 1 Moderator: Lee Herrington Topic: Water	Session B in Broadway 2 Moderator: Cathy Keenan Topic: Data Development	Session C in Broadway 3 Moderator: Alex Chaucer Topic: Education	Session D in Broadway 4 Moderator: Paul Szemkow Topic: LiDAR
10:30 am	**Pieper**: A GIS-based System for Tracking Inspections of Onsite Wastewater Treatment Systems in the Canandaigua Lake Watershed	**Benjamin**: Advancing the NYS GIS Strategic Plan One Step at a Time – Next Up… A Statewide Parcel Data Layer	**Meierdiercks**: Problem-Based Service Learning Projects in an Introductory GIS Course	**Lopez-Torrijos**: Airborne LiDAR and Mapping: Development of Common Guidelines and Practices for Hydrography
11:00 am	**DeSantis**: An Innovative Tool for Sediment Analysis During the Phase 1 Hudson River Dredging Program	**Gehrer**: Mapping New York State's Broadband Availability	**Jones**: Professionals Using Spatial Technology and Making Connections With Education	**Petterson**: Big Loads & Busy Tracks - How does it all fit together?

11:30 am	**Timmins**: Critical Infrastructure Protection and Interagency Coordination Using Emerging Technologies	**Aichele**: The National Map 2.0	**Ghaly**: Taxing Flesh: A Potential Therapeutic Recipe for Obesity	**LaClair**: Developing Elevation Datasets from LiDAR: A "How To Guide"

12:00 - 1:00 pm Luncheon in the Saratoga Ballroom - ***IGNITE sessions***begin at 12:15 pm

1:00 - 1:30 pm Meet our exhibitors in the City Center

1:30 - 3:30 pm Session 2

Time	Session A in Broadway 1 Moderator: Sue Nixson Topic: Web GIS	Session B in Broadway 2 Moderator:Jeff Herter Topic: Data Development	Session C in Broadway 3 Moderator:Bill Johnson Topic: Demographics	Session D in Broadway 4 Moderator: Bruce Oswald Topic: NYC
1:30 pm	**Hall** Doing More with Web-based GIS	**Ross** How FEMA Flood Maps Are Made, and What's in the DFIRM Database	**Scardamalia**: 2010 Census – Where did all the data go?	**MacFaden**: High-resolution land-cover mapping for urban tree canopy in New York City as part of a childhood asthma study
2:00 pm	**Bidoshi**: Integration of Google Maps, other Spatial Data from the Web and Open-Source Spatial Databases in Municipal Mapping Solutions	**Herter** Make Your Own Damn Map!: Collecting and using stakeholder information through Participatory GIS (pGIS)	**Jones**: The Geography of NY Economic Expansions and Contractions	**Nash**: MetroNYC Area Geospatial Organization(s) Update
2:30 pm	**Clohessy**: Scaling a Mass Notification GIS Application for Public Use	**Grady**: National Agricultural Imagery Program	**Francis** Two Decades of Population Change in New York: A Spatial Analysis	**Kenniff**: Green Infrastructure Opportunities

3:00 - 3:30 pm PM Break in the Exhibitor Area - Take the Exhibitor Challenge and win this year's prized artwork.

3:30 - 5:00 pm [NYS GIS Association](#) Meeting in Alabama / Travers rooms combined

5:00 - 6:30 pm Poster Session and Reception at the Saratoga City Center

6:30 pm Banquet dinner in the Saratoga Ballroom with special presentation by **Jack Knowlton**, Owner of [Funny Cide](#) race horse followed by the **Partnership award ceremony**.

Tuesday, October 26, 2010

7:30 - 9:00 am Registration sign in and Breakfast in the Gallery

Time	Meeting Room: Whitney	Meeting Room: Travers	Meeting Room: Alabama
8:00 - 8:45 am	Local Government Advisory Group	Private Sector Advisory Group	State Agency Advisory Group

9:00 - 10:30 am Session 3

Time	Session A in Broadway 1 Moderator: Mickey Dietrich Topic: Web GIS	Session B in Broadway 2 Moderator: John Barge Topic: Emergency Response	Session C in Broadway 3 Moderator: Eddie Bevilaqua Topic: Web GIS	Session D in Broadway 4 Moderator: Verne LaClair Topic: GIS and CAD
9:00 am	**Rockwood:** Interactive web mapping: designing	**Annitto**: GIS and Public Safety – More Than a Pin Map	**Fisher:** Design and Implementation of a GIS-Based Site Selection Tool	**Garrigan**: 3D Visualization of CAD Models in ArcGIS: 2 Case Studies on a Budget

			for the Long Island Sound Stewardship Initiative	
9:30 am	**Healy**: Putting Food Scraps to Work: Development of Vermont's Compost/Biogas Data Viewer and Information System	**Sharpe**: GIS Applications for Public Safety in Genesee County	**Volpe**: Creating a Web-Based GIS Data Sharing Network for the Southern Tier Central Region	**Pietra:** Best of Both Worlds, AutoCAD Civil 3D and ArcGIS

10:00 - 10:45 am Visit our exhibitors with refreshments in City Center

10:45 - 12:15 pm Session 4

Time	Session A in Broadway 1 Moderator: Clark Burdick Topic: OpenSource	Session B in Broadway 2 Moderator: Sue Nixson Topic: Maximizing ArcGIS	Session C in Broadway 3 Moderator: Lindi Quackenbush Topic: Local Government	Session D in Broadway 4 Moderator: Bill Johnson Topic: Map Critique
10:45 am	**Strode**: The GIS Behind iMapInvasives: the "Open-Source Sandwich"	**Pieper**: Automating ArcGIS ModelBuilder for Analyzing Nonpoint Pollution Impacts in the Carmans River Watershed	**Slutzah**: Implementing Shared Municipal Services to Improve Local Government Efficiency	Have your maps critiqued. Learn all of the techniques to increase the effectiveness and value of your map.
11:15 am	**Signell**: Sharing geodata in real time: an open source solution	**Breier**: Maximizing the Off-the-Shelf Potential of ArcGIS for ROW Vegetation and Real Estate Management	**Wear**: Building Multi-Government Geospatial Programs: The Future of Public Sector GIS in New York State	
11:45 am	**Pierro**: Web GIS – A clear case for open source	**Buss**: Understanding ESRI Geodatabase Replication: A Technical Software Demonstration	**Schorling**: Multi-Jurisdictional infrastructure Inventory (New York State JIMI Project)	

12:15 - 1:30 pm Lunch in Saratoga Ballroom with *exhibitor quiz winner* announced and other raffled prizes.

1:30 - 3:00 pm Session 5

Time	Session A in Broadway 1 Moderator: Eric Herman Topic: Rich Internet Applications	Session B in Broadway 2 Moderator:Jeff Volpe Topic: Vendor	Session C in Broadway 3 Moderator: Alex Chaucer Topic: Field Data Collection
1:30 pm	**Spraker**: Demystifying Rich Internet Application (RIA) Development with ArcGIS Server	**Timmons**: Critical Infrastructure Protection and Interagency Coordination Using Emerging Technologies	**Knauss**: Bringing GIS based Asset Management to NYSDOT
2:00 pm	**Cook:** FLEX Outside the Box: Balancing Functionality & Fluff	**Kinn/McGreevy**: What's New in ArcGIS 10: Where Imagery is Core to GIS	**Kovacs:** Emergency Assessment Field Tool – NYS DOT's Road Status and Damage Assessment Tool
2:30 pm	**Rozanova**: Moving Ahead with Flex Internet Applications: Saratoga County Web Map		**Michalowski**: Innovations in GIS for Travel Surveys

3:00 pm Conference concludes

Sunday, Oct. 24, 2010

	Exhibitor Schedule	Times	Seminar Saratoga Hilton Hotel	Hands-on Workshops Skidmore College, 815 N. Broadway		
Registration: 2:00 - 4:00 PM	NO exhibitor setup in City Center this day!	12:00-			LiDAR Workshop Ben Houston Harder Hall, Rm 108	Educator's Workshop, Amy Work Dana Science Center Rm 181
		1:00- 4:00	Positional Accuracy Assessment Seminar Kass Green Broadway 4 Room	OpenSource GIS Workshop Bryan McBride Harder Hall, Rm 101		
5:00- 7:30 PM			Reception: National Museum of Racing and Hall of Fame 191 Union Avenue, Saratoga Springs, NY 12866-3566 (corner of Union Ave and Ludlow St)			

Monday, Oct. 25, 2010

Registration: 7:30 AM - Noon and 1:00 - 5:00 PM in Hilton Lower Lobby	*Exhibitor set up 6:30 - 9:00 AM*	7:30-8:30	**Continental Breakfast in Gallery**			
		8:30-10:00	**State of the State Address delivered by Bill Johnson**, NYS Office of Cyber Security part of the new Division of Homeland Security and Emergency Services and Keynote address, "The Geospatial Revolution. What, next, now?" **Kass Green**, Kass Green and Associates in Saratoga Ballroom			
10:00 - 10:30 AM	*Exhibits open*		*AM break in Exhibitor area - City Center D*			
			Broadway 1	***Broadway 2***	***Broadway 3***	***Broadway 4***
10:30 AM	*Exhibits open 10 AM - 6:30 PM*	**Session 1**	**Session 1A** Moderator: Herrington **Tools for Tracking and Monitoring**	**Session 1B** Moderator: Keenan **Data Development**	**Session 1C** Moderator: Chaucer **Education**	**Session 1D** Moderator: Szemkow **LiDAR**
		10:30-11:00	**Pieper**: A GIS-based System for Tracking Inspections of Onsite Wastewater Treatment Systems in the Canandaigua Lake Watershed	**Benjamin**: Advancing the NYS GIS Strategic Plan One Step at a Time – Next Up… A Statewide Parcel Data Layer	**Meirdiercks**: Problem-Based Service Learning Projects in an Introductory GIS Course	**Lopez-Torrijos**: Airborne LiDAR and Mapping: Development of Common Guidelines and Practices for Hydrography
		11:00-11:30	**DeSantis**: An Innovative Tool for Sediment Analysis During the Phase 1 Hudson River Dredging Program	**Gehrer**: Mapping New York State's Broadband Availability	**Jones**: Professionals Using Spatial Technology and Making Connections With Education	**Pettersen**: Big Loads & Busy Tracks - How does it all fit together?
		11:30-12:00	**Timmins**: Critical Infrastructure Protection and Interagency Coordination Using Emerging Technologies	**Aichele**: The National Map 2.0	**Ghaly**: Taxing Flesh: A Potential Therapeutic Recipe for Obesity	**LaClair**: Developing Elevation Datasets from LiDAR: A "How To Guide"
Noon - 1:30 PM			**Buffet Lunch in Saratoga Ballroom with IGNITE Sessions 12:15**			
1:30 PM		**Session 2**	**Session 2A** Moderator: Nixson **Web GIS**	**Session 2B** Moderator: Herter **Data Development**	**Session 2C** Moderator: Johnson **Demographics**	**Session 2D** Moderator: Oswald **NYC**
		1:30 - 2:00	**Hall**: Doing More with Web-based GIS	**Ross**: How FEMA Flood Maps Are Made, and What's in the DFIRM Database	**Scardamalia**: 2010 Census – Where did all the data go?	**MacFaden**: High-resolution land-cover mapping for urban tree canopy in New York City as part of a childhood asthma study
		2:00 - 2:30	**Bidoshi**: Integration of Google Maps, other Spatial Data from the Web and Open-Source Spatial Databases in Municipal Mapping Solutions	**Herter**: Make Your Own Damn Map!: Collecting and using stakeholder information through Participatory GIS (pGIS)	**Jones**: The Geography of NY Economic Expansions and Contractions	**Nash**: MetroNYC Area Geospatial Organization(s) Update
		2:30 - 3:00	**Clohessy**: Scaling a Mass Notification GIS Application for Public Use	**Grady**: National Agricultural Imagery Program	**Francis**: Two Decades of Population Change in New York: A Spatial Analysis	**Kenniff**: Green Infrastructure Opportunities
3:00 PM			**PM Break in Exhibitor area in City Center**			
3:30 PM		3:30-5:00	**NYSGIS Association Meeting in Alabama/Travers**			
5:00 PM			**Reception / Poster Session in City Center**			
6:30 PM			**Banquet with Jack Knowlton, Owner of race horse, Funny Cide; Partnership award in Saratoga Ballroom**			

Tuesday, Oct. 26, 2010

		7:30 - 9:00 *Continental Breakfast in Gallery*	8:00 – 8:45 Advisory Group Meetings			
Registration: 8:00 AM - Noon in Hilton Lower Lobby	**8:00 AM Exhibits open**		*Local Government* in Whitney Room	*Private Sector* in Travers Room	*State Agency* in Alabama Room	
9:00 AM		Session 3	*Broadway 1*	*Broadway 2*	*Broadway 3*	*Broadway 4*
			Session 3A Moderator: Dietrich **Web GIS**	**Session 3B** Moderator: Barge **Emerg Response**	**Session 3C** Moderator: Bevilacqua **Web GIS**	**Session 3D** Moderator: LaClair **GIS and CAD**
		9:00-9:30	**Rockwood**: Interactive web mapping: designing for the technology challenged end user	**Annitto**: GIS and Public Safety – More Than a Pin Map	**Fisher**: Design and Implementation of a GIS-Based Site Selection Tool for the Long Island Sound Stewardship Initiative	**Garrigan**: 3D Visualization of CAD Models in ArcGIS: 2 Case Studies on a Budget
		9:30-10:00	**Healy**: Putting Food Scraps to Work: Development of Vermont's Compost/Biogas Data Viewer and Information System	**Sharpe**: GIS Applications for Public Safety in Genesee County	**Volpe**: Creating a Web-Based GIS Data Sharing Network for the Southern Tier Central Region	**Pietra**: Best of Both Worlds, AutoCAD Civil 3D and ArcGIS
10:00 - 10:45 AM	AM Break in Exhibitor area - City Center					
10:45 AM		Session 4	**Session 4A** Moderator: Burdick **OpenSource**	**Session 4B** Moderator: Nixson **Maximizing ArcGIS**	**Session 4C** Moderator: Quackenbush **Local Government**	**Session 4D** Moderator: Johnson **Map Critique**
		10:45-11:15	**Strode**: The GIS Behind iMapInvasives: the "Open-Source Sandwich"	**Pieper**: Automating ArcGIS ModelBuilder for Analyzing Nonpoint Pollution Impacts in the Carmans River Watershed	**Slutzah**: Implementing Shared Municipal Services to Improve Local Government Efficiency	Have your maps critiqued. Learn all of the techniques to increase the effectiveness and value of your map.
		11:15-11:45	**Signell**: Sharing geodata in real time: an open source solution	**Breier**: Maximizing the Off-the-Shelf Potential of ArcGIS for ROW Vegetation and Real Estate Management	**Wear**: Building Multi-Government Geospatial Programs: The Future of Public Sector GIS in NYS	
		11:45-12:15	**Pierro**: Web GIS – A clear case for open source	**Buss**: Understanding ESRI Geodatabase Replication: A Technical Software Demonstration	**Schorling**: Multi-Jurisdictional infrastructure Inventory (New York State JIMI Project)	
12:15 - 1:30 PM	Buffet Lunch in Saratoga Ballroom					
1:30 PM		Session 5	**Session 5A** Moderator: Herman **Rich Internet Applications**	**Session 5B** Moderator: Volpe **GIS Tools and Imagery**	**Session 5C** Moderator: Chaucer **Field Data Collection**	
		1:30-2:00	**Spraker**: Demystifying Rich Internet Application (RIA) Development with ArcGIS Server	**Kinn/McGreevy**: What's New in ArcGIS 10: Where Imagery is Core to GIS	**Knauss**: Bringing GIS based Asset Management to NYSDOT	
		2:00-2:30	**Cook**: FLEX Outside the Box: Balancing Functionality & Fluff		**Kovacs**: Emergency Assessment Field Tool – NYS DOT's Road Status and Damage Assessment Tool	
		2:30-3:00	**Rozanova**: Moving Ahead with Flex Internet Applications: Saratoga County Web Map		**Michalowski**: Innovations in GIS for Travel Surveys	
3:00 PM	**Conference Concludes**					

26th Annual New York State
Geographic Information Systems Conference
Saratoga Springs, NY

Sunday, October 24, 2010
Time: 12:00 pm – 4:00 pm
Room: Alabama

Pre-Conference Educator's Workshop: Using GIS in the Classroom
Hands-on Learning

Instructor: Amy Work, GIS Analyst and Education Coordinator, Institute for the Application of
Geospatial Technology (IAGT)

Aim: To provide K-12 educators with an introduction to the use of geospatial technologies in
traditional and non-traditional classroom settings. Provide you with hands-on experience with
lessons currently being used in classroom environments.

Learning objectives:
By the end of the workshop, you will:
  • Gain an basic understanding of GIS for educational purposes;
  • See GIS lessons as a valuable supplement to existing content;
  • Understand how other educators in NY are using GIS in their classrooms; and
  • Know where to locate additional GIS in Education resources and training opportunities;

Course outline:
  • The Basics of GIS and Using GIS in Education;
  • 1st hand teacher experiences with GIS in the classroom;
  • Hands-on activities using GIS lessons; and
  • Resources for GIS in Education opportunities;

Who the course is intended for:
If you are a K-12 educator who is interested in integrating GIS into your classroom, you should
register for this workshop. No previous experience with GIS is necessary.

Software and Equipment: ESRI ArcGIS 9.3, ArcGIS Explorer. We recommend using the
computers provided for use during this workshop. You may bring your own laptop, but you
should have administrative rights on the machine. Bring a USB to take digital materials with you.

Teaching time: 4 hours consisting of a combination of computer based **hands-on exercises** and
discussion.

26th Annual New York State
Geographic Information Systems Conference
Saratoga Springs, NY

Sunday, October 24, 2010
Time: 12:00- 4:00pm

Pre-Conference LiDAR Seminar: Now that I have it, what can I do with it?

Instructors: Benjamin H. Houston, P.E., PMP, GISP
                    Karen Kwasnowski, GISP

Aim: To provide both GIS practitioners and managers a detailed understanding of the challenges and the potential for integrating LiDAR data into GIS projects. This seminar will focus on three specific types of GIS analysis: drainage analysis, impervious surface analysis, and tree canopy analysis.

Learning objectives: By the end of the workshop, you will:
    know the steps necessary to process a LiDAR point cloud for drainage analysis
    know the key derivative datasets necessary to support successful drainage analysis
    anticipate the key challenges in using LiDAR for drainage analysis at varying scales
    articulate the role of LiDAR in impervious surface and tree canopy analysis
    articulate the return on investment for using LIDAR in impervious surface and tree canopy analysis
    understand what software tools are needed to process and analyze LiDAR data

Who the course is intended for:
If you are interested in LiDAR data, you should register for this seminar. The content is designed for an audience of all skill levels, and no previous experience using LiDAR data is necessary. Highly technical and skilled analysts will be able to better assess their needs in order to accomplish the types of analysis presented, and managers or casual/novice GIS users will better understand how advanced analysis using LiDAR can support their project goals.

Software and Equipment:
This seminar will give case study examples using a number of different software packages, both commercial and open source. This is NOT designed to teach specific skills in any one software package but to help you make sound decisions about tool and training investments. Handouts, along with a DVD of sample software and data will be provided.

Teaching time:
Approximately 4 hours consisting of lecture, discussion and computer based demonstration.

Course outline: The course will cover:

Review of LiDAR
  Brief review of airborne LiDAR systems
    Collection and Sensor parameter
    Standard processing and deliverables
  Data Quality - issues that affect the point cloud and the bare earth surface
Processing LiDAR points into a drainage surface
  Hydro-enforcement vs. hydro-conditioning
  FEMA Standards review
  USGS Standards review
  Point classification
  Breaklines and breakline development techniques
  Drainage enforcement techniques- the "New England" method
  Quiz
Drainage analysis
  Survey of commands and functions using ESRI Spatial Analyst and TauDEM
  Catchment level mapping and NHDPlus
  Impact of roads and culverts
  Applications Discussion and Examples
    Stormwater program management requirements
      (i.e., sewershed Mapping, IDDE, BMP siting and design, etc.)
    Screening level water quality modeling and analysis
      (i.e., RBDE, VSA, ECM, etc.)
    Environmental emergency response
      (i.e., spills, floods, etc.)
  Quiz
Impervious Surface Analysis
  Review of pixel based classification
  Impact of scale and resolution on data integration
  Object Based Image Analysis (OBIA) with LiDAR and Color InfraRed (CIR) imagery
  Impervious surface mapping example
  Quiz
Tree Canopy Analysis
  Comparison of three different approaches:
    LiDAR only
    Pixel based integration of LiDAR and CIR
    OBIA based analysis
  Tree Canopy Mapping example(s)
  Quiz

26th Annual New York State
Geographic Information Systems Conference
Saratoga Springs, NY

Sunday, October 24th, 2010
Time: 1:00 pm – 4:00 pm

Pre-Conference Workshop: Intro to Open Source GIS

Instructor:

Bryan R. McBride, GISP
CHA, Inc.
bmcbride@chacompanies.com

Instructor Bio:

Bryan McBride is a GIS Programmer/Analyst with CHA, Inc. in Albany, NY. He holds a degree in Environmental Planning and Resource Management from Plattsburgh State's Center for Earth and Environmental Science and is a Certified GIS Professional. Bryan has instructed numerous GIS training courses, including Intro to Open Source GIS at Adirondack Community College. His experience in the GIS industry includes work on projects for the private sector, municipal government, and academia.

Workshop Aim:

Incorporating a combination of lecture, hands-on exercises, and open discussion, this workshop aims to provide a comprehensive introduction and technical demonstration on how to implement a complete Geographic Information System (GIS) based entirely on freely available, Open-Source products.

Course Outline:

- The open source software development model- advantages, disadvantages

- Current open source products and resources available to the GIS Community

- Review of basic geography principals for GIS

- Overview of freely available GIS data sources

- Introduction to Quantum GIS

- Working with QGIS (hands-on installation and practice exercises)

- Workshop review, Q&A, open discussion

26th Annual New York State
Geographic Information Systems Conference

Sunday, October 24, 2010
Time: 1:00 pm – 4:00 pm

Positional Accuracy Assessment

Instructor: Kass Green, President Kass Green & Associates

Aim: Provide attendees with the knowledge necessary to conduct or review a positional accuracy assessment of map or imagery data.

Learning objectives: at end of the workshop, participants will:
- have knowledge of the most commonly used standards in positional accuracy, assessment and appreciate the differences between them,
- understand the assumptions behind NSSDA and other positional accuracy standards,
- understand how to design a positional accuracy assessment,
- be able to calculate positional accuracy statistics, and
- recognize the theoretical errors in NSSDA and be able to compensate for them.

Course outline: The course will cover:
- Definition of positional accuracy
- Summary of common positional accuracy standards
- Sample design and selection
- Positional accuracy assessment analysis
- Summary
- Attendees will be provided with pdfs of the common positional accuracy assessment standards as well as an excel workbook with a horizontal accuracy example.

Who the course is intended for: This is an introductory workshop for map users and producers.

Hardware: none

Software: none

Teaching time: 3 hours consisting of a lecture and discussion

Monday, October 25, 2010

State of the State and Keynote Address 8:30 am – 10:00 am in the Saratoga Ballroom

State of the State Address delivered by **Bill Johnson**, NYS Office of Cyber Security part of the new Division of Homeland Security and Emergency Services

Keynote address, "Geospatial Revolution, What, next, now?" **Kass Green**, President of Kass Green and Associates

Session 1   10:30 am – 12:00 pm

Session 1 A in Broadway 1
Water

A GIS-based System for Tracking Inspections of Onsite Wastewater Treatment Systems in the Canandaigua Lake Watershed

Fred Pieper
Director, Application Development
Institute for the Application of Geospatial Technology
fpieper@iagt.org

Kevin Olvany
Watershed Manager
Canandaigua Lake Watershed Council
klo@canandaiguanewyork.gov

The Canandaigua Lake Watershed Council (CLWC) is concerned with maintaining and enhancing the high water quality of Canandaigua Lake. One important aspect of this involves the pro-active management of the significant number of onsite wastewater treatment (septic) systems in operation within the watershed. To enable the watershed manager and watershed inspector to more efficiently and effectively inventory and analyze these treatment systems, the CLWC authorized the development of a GIS-based inspection tracking system with partial funding from a NYS Department of State grant. The Onsite Wastewater Treatment System Inspection Tracking (OWTSIT) system was designed and developed by IAGT in collaboration with CLWC and Ontario County (providing geospatial data management and technical support for application deployment).

Implemented within the ArcGIS desktop environment, the primary purpose of OWTSIT is to provide a means for managing information about the type and condition of individual privately-owned treatment systems. The watershed inspector gathers this information during routine field inspections of treatment systems required whenever property ownership is transferred.

The following topics will be covered: the programmatic basis for OWTSIT; the corresponding system requirements that were defined; the system design and architecture that was selected; the data migration effort from the previous system; the current system functionality; and potential future enhancements and adaptability for use in other areas.

An Innovative Tool for Sediment Analysis during the Phase 1 Hudson River Dredging Program

Liane DeSantis
Level 3 Scientist
Anchor QEA
ldesantis@anchorqea.com

In 2009, the General Electric Company (GE) implemented Phase 1 of the Hudson River Remediation Project, consisting of environmental dredging to remove PCB contaminated sediment contaminated in the Hudson River, near Fort Edward, NY. The EPA established Residuals Standards that provided "rules" to evaluate whether the PCB concentrations within a remediated area were compliant with pre-defined cleanup standards or whether the levels exceeded those standards such that re-dredging was needed. The rate of dredging required that decisions and designs for re-dredging, backfill, or capping be turned around in a matter of hours. Consequently, there was a need for a tool that would efficiently analyze sediment sampling

results, process them through the complicated rules and effectively communicate the results. To meet these needs, the Residual Analysis System (RAS) was developed, which was a set of tools in ArcGIS and Interactive Data Language (IDL). Sediment samples were collected and analyzed for PCBs after each dredge pass. The interpretation of PCB concentrations was automated and these tools were used to delineate the extent of any remaining contamination, as well as the extent of cap or backfill placement. Maps were automatically created after each dredge pass, displaying PCB concentrations in the sediment and outlining the next action triggered by the concentrations. These tools streamlined the interpretation of the data needed to make intelligent decisions during dredging and allowed visualization of the results on an almost real-time basis. Challenges encountered related to the adaptability of the tool during the dredging will also be discussed.

Critical Infrastructure Protection and Interagency Coordination Using Emerging Technologies

Bill Timmins
Director
GIS Solutions
GIS Services
Director@GISServices.net

Brad Tatham
Application Specialist and Trainer
Solutions
GIS Services
Brad@GISServices.net

The opportunity to use GPS and mobile data collection technology by emergency and disaster responders, operational managers, and support personnel can offer easy to use technology solutions that can be combined with GIS data. Allowing for interagency coordination provides a better understanding of the events, roles and responsibilities from pre event planning to on the ground response. With an ongoing dialogue using spatial data collected in the field those involved in event response are better prepared to assist and achieve maximum efficiency in times of disaster and emergency events to save lives, protect infrastructure and property.

GIS professionals can publish, distribute and collaborate with geospatial data in a standard, secure and manageable format to leverage agencies investment in geospatial data. By eliminating technology boundaries between agencies the comments, feature additions and symbols can easily be shared. The objectives of agencies working together can now be interwoven allowing for the interactive technology solutions that fit for those in the field and allow for the evaluation by those who determine the solutions to events that could happen, events developing, and for post event response.

Presentation will include demonstrations of integration of GIS/GPS cameras, digital pen solutions and hand held phone technology that allows for direct integration into GIS systems.

Session 1 B in Broadway 2
Data Development

Advancing the NYS GIS Strategic Plan One Step at a Time – Next Up… A Statewide Parcel Data Layer

Cheryl Benjamin
GIS Project Manager
GIS Program
NYS Office of Cyber Security
cheryl.benjamin@cscic.state.ny.us

Frank Winters
GIS Program Manager
GIS Program
NYS Office of Cyber Security
frank.winters@cscic.state.ny.us

In 2008 the NYS Office of Cyber Security and Critical Infrastructure Coordination (CSCIC) completed a comprehensive Strategic Plan that set a vision and priorities to advance New York State's geospatial development for the next five years. The highest priority recommendation from the Strategic Plan was to "formally pursue a program to develop a statewide parcel data layer".

Earlier this year, CSCIC was awarded an FGDC CAP grant to help fund the development of a business plan for Centralized Access to Consistent Cadastral GIS Data for New York State. The business plan will identify and provide strategies to successfully overcome the technical, legal, and social barriers when developing a statewide cadastral framework data layer.

CSCIC has secured the services of a Contractor to help develop the Business Plan. A major part of the business plan research has focused on communication with the county and local government Real Property Tax Directors and Assessors to identify their policy issues, concerns, and their ideas and potential solutions for achieving our goal of centralized access to consistent cadastral GIS data. With NYS ORPS' assistance, we have also developed a current snapshot of the status of digital parcel data in NYS.

This presentation will summarize the policy issues, technical barriers, and other concerns compiled to date as well as a wide range of suggested potential solutions. Some interesting statistics regarding the status of digital parcel data in NYS will also be shared.

Mapping New York State's Broadband Availability

Robert Gehrer
frank.winters@cscic.state.ny.us

Since 2008, the Office of Cyber Security (formerly CSCIC) has taken the lead on mapping broadband availability in New York State. At last year's conference we detailed a predictive broadband mapping methodology using publicly accessible data. In October 2009, under a grant from the National Telecommunications and Information Administration, we began a new method of mapping availability using records from more than 70 providers of broadband to NYS residents and businesses. This presentation will cover data collection challenges, data aggregation steps, validation routines, and the NYS Interactive Broadband Mapping application. We will also discuss a broadband speed test website which allows NYS residents to determine their computer's connection speed, while also contributing to the quality of New York's broadband map and the data that will drive broadband policy decisions.

The National Map 2.0

Dr. Stephen S. Aichele
Geographer, USGS Geospatial Liaison
New York, Michigan and the Great Lakes
saichele@usgs.gov

For 125 years, the U.S. Geological Survey labored to produce almost 70,000 topographic maps for the continental United States, including over 54,000 at 1:24,000 scale. This year, a new, digital successor, the US Topo, is being produced across New York. The US Topo is a layered GeoPDF, containing traditional elements of a topographic map, plus orthoimagery. The US Topo, along with the improved NationalMap Viewer, represents two important data-delivery vehicles leveraging the National Spatial Data Infrastructure.

The US Topo is produced with automated methods by drawing data from the NSDI databases – the National Elevation Dataset, the National Hydrography Dataset, the Geographic Names Information System, etc. Although the maps are still reviewed by humans, leveraging both the data and information infrastructure investment of the past decade has drastically reduced the time required to produce a 7.5-minute map.

While it used to take an average of 8 years from start to finish, to complete a conventional 1:24K topographic map, the USGS is producing, on average, one US Topo every 8 minutes, with work plans to produce between 15,000 and 20,000 every year, mapping the contiguous U.S. on a 3 year rotation.

The new *National Map* viewer replaces the dated and relatively slow interface of the old viewer with a modern, tiled, easily layered interface capable of ingesting KML, WMS, IMS, and AGS services. The new viewer also provides simple GIS functionality, including spatial and attribute queries, measuring, geocoding, annotation, and spot elevations.

The basic infrastructure of TNM, the US Topo, and the TNM Viewer is still data – services and applications without data are like cars without roads. Creating and maintaining current, accurate, authoritative datasets in the public domain enables TNM, Google Maps, Bing Maps, as well as State, county, and local applications, to focus on analysis and content delivery, saving resources by reducing independent, duplicative, or conflicting base-data creation.

Session 1 C in Broadway 3

Education

Problem-Based Service Learning Projects in an Introductory GIS Course

Katherine Meierdiercks
Faculty
Environmental Studies
Siena College
kmeierdiercks@siena.edu

While students in a course in GIS may learn a breadth of GIS skills and theory through tutorials and exercises, an in depth knowledge of GIS is, arguably, best gained through real-world, hands-on, applied projects. At the same time, many members of a college or university community may have questions they need answered or problems they need solved using GIS, but may not have a complete understanding of the capabilities of GIS or the skills necessary to use GIS. Furthermore, for small government agencies or not-for-profit organizations, funding may not be available to purchase expensive GIS software or hire experienced GIS personnel. Problem-Based Service Learning (PBSL) is a pedagogical tool that addresses both of these issues. In PBSL, students use skills they have learned in class to solve a problem or answer a question for a "community partner". Here, the PBSL learning model is applied to an introductory course in GIS. Example course projects include mapping frog tracks for the National Park Service, creating site maps for the Pittstown Historical Society, and mapping bike and walking paths to historical sites in Albany, NY. Benefits for the students include the acquisition and retention of GIS skills and enhanced problem solving and critical thinking skills. The projects also led to internship opportunities and a portfolio of maps and GIS analyses that demonstrate each student's ability to use GIS to solve real-world problems. Additionally, the projects provide opportunities to build and enhance relationships within and beyond the campus.

Professionals Using Spatial Technology and Making Connections with Education

Robert Jones
rajones1012@gmail.com

The Hannibal School District has been making connections with professionals and organizations within the community that use spatial technology for the last four years. This session will share example of ongoing partnerships, GIS Day activities, community projects and an overview the GeoMentor Program created by National Geographic and ESRI to help make connections with K-12 education, college and youth groups.

Taxing Flesh: A Potential Therapeutic Recipe for Obesity

Ashraf Ghaly
ghalya@union.edu

Obesity is a serious epidemic in the United States. Three quarters of all deaths in this country are due to illnesses related to obesity. Being overweight is not only a health hazard but it impacts self-worth and productivity. There have been many approaches proposed to deal with this problem both at national and state levels. In the national debate of the recently passed health care bill, proposals were made to give incentive to people that maintain a healthy weight. One of these proposals suggested higher insurance premiums for overweight individuals. Premiums would be increasing in proportion with the extra weight above what is considered to be a normal level. At the state level, New York has been debating a proposal to impose tax on what is deemed to be unhealthy food, especially sugary beverages. The problem of obesity is a complex one and cannot be studied in absence of many factors such as level of income, attained education, coverage with health insurance, social environment, ethnicity, and personal habits (like smoking, for example). Moreover, there have also been some developments in recent years that resulted in less physical activities for a large segment of the population. This is manifested by the significant increase in computer use where net surfers and social networkers spend hours glued to their computers. The purpose of this presentation is to show GIS maps illustrating the relationship between obesity and each of the above factors. It is argued that many obese people wish to shed the extra weight but due to many factors, some of which are beyond their control, they find it difficult to achieve this goal. The paper will argue that addressing the problem of obesity can be less costly than dealing with widespread illnesses associated with obesity such as high blood pressure and diabetes.

Session 1 D in Broadway 4
LiDAR

Airborne Lidar and Mapping: Development of Common Guidelines and Practices for Hydrography

Ricardo Lopez-Torrijos
RLTorrijos@aol.com

Airborne lidar is established as the standard remote sensing technique for development of accurate representation of the landscape in ecosystems such as the Eastern Seaboard. At the same time there is a paucity of protocols and guidelines to establish the relationship between the lidar source data and derived products. The National Hydrography Dataset Stewardship, under the leadership of USGS, is carrying out a process to develop such best practice guidelines and protocols for the development of vertically integrated hydrography and hydro-enforced landscape elevation models. This best practice seeks to tackle, issues such as:
 Concurrent temporal, horizontal and vertical accuracy specifications for lidar and imagery
 (X,Y,t) registration conflict resolution
 Point density as a function of ground cover
 'Dirty' areas and vegetation removal assessment
 Breaklines and 'Water' point classification
 Capture Conditions
 Elevation, hydrography and derivatives update sequence and coordination.

Big Loads & Busy Tracks - How does it all fit together?

David Petterson
Sales Manager - Transportation
Utilities Vertical
Pictometry International
david.petterson@pictometry.com

Moving large over-dimensional loads through a railway can be a challenging affair. Large loads which do not conform to a standard profile can have a profound impact (literally!) on track infrastructure and other rail vehicles. Having access to a range of track based information is critical to ensure safe passage of these loads through a network.

While in the process of delivering the agreed upon data to the customer, the railroad had several large loads such as Wind Turbine bases / blades and Reactors components, which were waiting to be transported. The different loads had different sizes and dynamic characteristics which had to be simulated through the network, prior to getting the green light to move forward.

This presentation describes how the use of Track based imagery and terrestrial lidar was collected along 100 miles of rail track to generate clearance information through an Outer city Chicago railroad. It will also describe the methodology by which the data was processed and delivered to the client per the initial request, and then for the additional requests. It will also highlight the use of web-based visualization tools which helped the client reference problem areas which were discovered during the processing stages.

Developing Elevation Datasets from LiDAR: A "How to Guide"

Verne LaClair
verne_laclair@partech.com

As large LiDAR datasets become more common in New York State, the question of how to best view the data and in what format to use comes to the forefront. This presentation will describe considerations in the development, relative performance benefits, and technical aspects of creating terrains from high density topographic data. ASCII point cloud data and LAS tile manipulation will be discussed such that session participants will become familiar with the process to create multi-resolution TIN-based surfaces from LiDAR datasets where scalability is achieved using the ESRI terrain pyramid structure with the multipoint feature type.   Suggested workstation specifications and best practice recommendations for creating digital elevation models, contours, and breaklines using derived terrain surfaces will be presented using sample data from Oneida and Tompkins Counties.

Monday, October 25, 2010
Session 2   1:30 pm – 3:00 pm

Session 2 A in Broadway 1
Web GIS

Doing More with Web GIS

Jim Hall
jhall@bownegroup.com

Girk Cakmak
gcakmak@bownegroup.com

The world of custom GIS web application development is constantly advancing and this presentation will demonstrate how some compelling cutting edge tools and resources have been used to develop applications that allow GIS web applications to extend traditional technological boundaries. The presenter will begin with a review of the practical use of the Google Map and Earth APIs which enable use of GIS cloud computing and 3D visualization in a browser-based application. He will then demonstrate use of advanced data query, editing and dashboarding functionality that provide a powerful set of tools to end users in an ArcGIS Server–based application. The sites that will be demonstrated are all real-world sites developed for customers by Bowne Management Systems within the last year.

Integration of Google Maps, other Spatial Data from the Web and Open-Source Spatial Databases in Municipal Mapping Solutions

Kosta Bidoshi
Project Manager/Software Developer
Fountains Spatial
kosta.bidoshi@fountainsamerica.com

The ability to tap into the vast amount of information on the web and especially the information that contains location data is a great asset available to us nowadays. However, the integration of such information is challenging because of the different structure and rules as set out by the data provider. Adding the ability to include custom data to an existing web map makes this task even more challenging. At Fountains Spatial, we are continuing to work on enterprise web GIS solutions such as using ESRI's ArcGIS Server. However, the emergence of freely available Mapping APIs such as Google, Bing and Yahoo Maps can often offer small organizations such as small towns an affordable solution. This presentation gives an update of our achievements in creating affordable web mapping applications for small municipalities and describes some of the technical limitations and challenges in doing this. We are using Google Maps, Bing Maps, custom KML overlays as well as an Open-Source Spatial Database for server processing to create low-cost Municipal Mappers for the web. Fountains Spatial is also working closely with Systems Development Group (SDG) to include Image Mate Online capabilities to such Municipal Mappers. This presentation will also take a look at other mashup techniques that allow bringing together spatial data from different sources.

Scaling a Mass Notification GIS Application for Public Use

James Clohessy
Lead GIS Analyst
GIS Solutions Division
Buffalo Computer Graphics, Inc.
jclohessy@buffalocomputergraphics.com

Buffalo Computer Graphics, Inc. (BCG) has recently implemented a large-scale GIS architecture built to serve the public of New York State. A mass notification solution was developed by BCG for the State and is managed by them. We addressed the unique challenges of developing an application that serves private and governmental organizations along with the civilian population of New York State. Additionally, the public audience is of unknown dimension and continually changing in size, further complicating the solution provided. The mass notification system allows residents to log-on to a web-portal and request that pertinent notifications be sent to them in a multitude of ways. Additionally, authorized administrators creating and sending notifications can use map-based tools to define the precise areas or individuals that should receive specific emergency notifications.

We will explain how the architecture was built to scale-up easily when demand increases and grow as the system supports more people throughout the region. Additional issues addressed in our presentation will include: licensing considerations; how the application was built and deployed; the need for maximum uptime; and the need to segregate services so public-facing functions do not overtax the essential private services. Technologies employed include ESRI ArcGIS Server 9.3.1, ESRI ArcSDE 9.3.1, Adobe Flex, F5 Networking Systems, and Microsoft Server 2008.

Session 2B in Broadway 2
Data Development

How FEMA Flood Maps Are Made, and What's in the DFIRM Database

Shaun Gannon
Senior Water Resource Engineer
Bergmann Associates
sgannon@bergmannpc.com

Michael Ross
Senior GIS Analyst
Bergmann Associates
mross@bergmannpc.com

Almost all GIS professionals use the FEMA Flood Mapping layer at some point, but how many of us really understand how it is created? This presentation will present an overview of the entire process, from determining which communities will be studied, through the study itself, to the release of the flood maps and database. This is an interesting type of project from a GIS perspective, because it is an entirely GIS-based engineering project with multiple GIS data deliverables. Each of the tasks - topographic data development, survey integration, hydrologic modeling, hydraulic modeling, floodplain mapping, and map panel production - uses advanced GIS. We will discuss the GIS methods in each task, as well as toolboxes and workflows which speed up and standardize the process.

Make Your Own Damn Map!: Collecting and using stakeholder information through Participatory GIS (pGIS)

Jeff Herter
Jeff.Herter@dos.state.ny.us

New York State Department of State (DOS) collected information on where, how and when, the waters offshore New York are being used. Using participatory GIS (pGIS) techniques, DOS was able to map ocean uses by acquiring valuable information from offshoreusers. This offshore use information will be used in a larger initiative to develop an ocean amendment to New York's Coastal Management Program, aimed at appropriately siting offshore wind energy facilities and providing greater protection to ocean habitats.

PGIS is a great way to collect local knowledge not currently captured in GIS format. Flexibility in pGIS collection techniques lends itself to working with folks with a wide range of technical skills, from participants drawing on a map to entering data straight into GIS.

DOS used three distinct steps in carrying out pGIS: 1) offshore use constituent champions were invited to a series of workshops, at which they learned about the ocean amendment process, the role of human use information in that process and how to collect offshore use information from the user group they represent; 2) champions met with their membership to identify, locate, and characterize offshore use areas. Information collected, either on printed maps or in shape files, was sent to DOS where it was aggregated, and; 3) offshore use constituent champions were reconvened to review compiled offshore use information.

National Agricultural Imagery Program

Heather Grady
Agricultural Program Technology Specialist
USDA - Farm Service Agency
heather.grady@ny.usda.gov

The National Agricultural Imagery Program has provided the USDA Farm Service Agency (FSA) and cost

share partners a cost effective means of acquiring digital ortho imagery that is delivered within 30 – 60 days of acquisition. Initially focused on coverage of agricultural areas within the continental United States, NAIP has become a platform for acquiring full state coverage on a regular cycle. This presentation will focus on the status of NAIP including planned 2011 acquisition, product specifications, cost share opportunities, and delivery/access methods and timelines.

Session 2 C in Broadway 3
Demographics

2010 Census – Where did all the data go?

Robert Scardamalia
Director
Center for Research and Information Analysis
NYS Dept. of Economic Development
rscardamalia@empire.state.ny.us

One of the most significant changes in the 2010 Census actually started in the mid-1990's. The American Community Survey which is now more than a decade old – but relatively unknown – is replacing the traditional long-form sample data collected in the Decennial Census. This year's Census enumeration was simplified by including only the basic demographic and housing characteristics required by the Constitution and law. Rather than having detailed socio-economic characteristics to drive our programs only once every 10 years, the American Community Survey will report detailed characteristics every year.

This session will describe the changes coming with the American Community Survey, particularly as they relate to small area geography like Census tracts and annual release of data. The American Community Survey data is derived from a sample that is smaller than the traditional Census sample. The variability in these data will greatly impact our use of the measures and complicate year-to-year trend analysis.

The Geography of NY Economic Expansions and Contractions

Robert Jones
Associate Professor and Chair
Department of Economics
Skidmore College
rjones@skidmore.edu

The United States is not a geographically homogeneous economy. Far from it. Often some states are in a recession or expansion phase of their economic cycles while other states are in opposite phases. The first part of this presentation uses Geographic Information Systems (GIS) analysis to examine the behavior of New York State, relative to the rest of the nation, during recessions and expansions using various economic indicators.

New York State, as well, is not a geographically homogenous economy. The second part of this presentation examines the employment changes by county and regions within New York State over the past few recessions and expansions.

The goal of this presentation is to see what lessons can be learned by taking economic geography into consideration when examining economic cycles.

Two Decades of Population Change in New York: A Spatial Analysis

Joe D. Francis
Associate Professor and Director of Program on Applied Demographics
Development Sociology
Cornell University
jdf2@cornell.edu

This paper discusses the changing nature of population size and composition in New York counties from 1990-2009. The emphasis is on spatial patterns and changes in spatial patterns of growth, stability and decline across the last two decades. The primary media used to show these changes are choropleth maps, cluster maps and selected county charts. In addition to presenting the traditional decadal changes (e.g. 1990-2000), this paper presents maps for sub-decade changes (e.g. 2000-2003, 2003-2006, 2006-2009) as

well. By looking at the six three-year map on finds interesting variation population dynamics from early to mid to late decade. Yet other maps show the changes in population components of births, deaths, and especially migration.

In addition to maps that show the change in size and spatial patterns, companion maps are presented that highlight clusters of counties that are have significant local autocorrelation and are of different types. Moran's I and Anslen's LISA measures are used to measure spatial autocorrelation. As the maps show, county clusters which are significantly high or low change in composition across the decades.

Taken together these maps portray an increased understanding of local population changes.

Session 2 D in Broadway 4
NYC

High-resolution land-cover mapping for urban tree canopy in New York City as part of a childhood asthma study

Sean MacFaden
Geospatial Analyst
Spatial Analysis Laboratory
University of Vermont
Sean.MacFaden@uvm.edu

Jarlath O'Neil-Dunne
Geospatial Analyst
Spatial Analysis Laboratory
University of Vermont
Jarlath.ONeil-Dunne@uvm.edu

Morgan Grove
Research Scientist
Northern Research Station
USDA Forest Service
mgrove@fs.fed.us

Keith Pelletier
Geospatial Analyst
Spatial Analysis Laboratory
University of Vermont
kpelleti@uvm.edu

Tree canopy provides many environmental and social benefits to urban communities, including runoff retention, shade, wildlife habitat, enhanced property values, and desirable aesthetics. It is also believed to improve air quality by sequestering nitrogen dioxide, ozone, particulates, and other pollutants. Until recently, however, it has been difficult to analyze the relationship between trees, air quality, and respiratory disease over an extensive area because available tree-canopy maps were usually derived from moderate-resolution remote-sensing data and pixel-based classification methods (e.g., 30-meter National Land Cover Dataset). The advent and refinement of object-based image analysis (OBIA) techniques and the growing availability of high-resolution imagery and LiDAR have changed this dynamic, permitting development of maps that accurately depict tree canopy at the scale of individual trees. Using OBIA in conjunction with recent color-infrared satellite imagery and LiDAR datasets, we mapped tree canopy for sections of the New York City boroughs of Manhattan and the Bronx that coincide with a longitudinal study of childhood asthma. Other land-cover classes were buildings, roads, other paved features, grass/shrubs, bare soil, and water. To ensure the highest possible degree of accuracy and visual quality, we also manually reviewed and edited, where necessary, the draft land-cover map, focusing on the placement and morphology of individual trees. The final land-cover map will be used by epidemiologists at Columbia University and the New York City Department of Health and Mental Hygiene to examine the effect of urban tree canopy on the incidence and distribution of childhood asthma.

MetroNYC Area Geospatial Organization(s) Update

Dorothy Nash
dnash@oem.nyc.gov

I plan to discuss key user groups/mapping entities in the five boroughs and beyond, focus on two:

*GISMO: looking back & forward, a twenty-year perspective
*GreenMap NYC: 7 minute video + internet demo of website & mapping resources

Opportunities with Other Professional Groups
*NYS GIS Association
*LI GIS
*NY/NJ Chapter – Geospatial Information Technologies Assn

Relating to MeetUp Groups Relatively New on the Scene
*NYC OpenStreet Map Enthusiasts
**NY Location-Based Apps Meetup

Leveraging Activities/Organization Resources – Collaboration Past/Present/Future
*retrospective: three geospatial seminars with NYC Metro InfraGard Chapter
                        <<Queens Museum; Cooper Union; Foley Post Office sessions>>
*prospective: January 2012 with local GITA chapter & NYU Polytechnic

Green Infrastructure Opportunities

Vlada Kenniff
NYC Environmental Protection
vladas@dep.nyc.gov

PlaNYC, New York City's blueprint for a greener, greater city over the next 20 years, anticipates additional recreational areas on our waterways from water quality improvements. To help New York City meet these goals DEP has developed an Adaptive Management Strategy which integrates "green infrastructure" such as swales and wetlands, with measures to optimize the existing sewer system and targeted, smaller-scale "grey infrastructure" such as bending weirs and high-level storm sewers. DEP performed an extensive GIS analysis identifying existing and future green infrastructure opportunities building on the existing pilots, known imperviousness, upcoming street construction, development trends and land use analysis.

Tuesday, October 26, 2010
Session 3   9:00 am – 10:00 am

Session 3A in Broadway 1
Web GIS

Interactive web mapping: designing for the technology challenged end user

Linda Rockwood
owner/consultant
Mohawk Valley GIS
lrockwoo@twcny.rr.com

This presentation will focus on interactive web maps developed for recreation and tourism promotion, used by a broad range of users. How can the developer show a wealth of information and provide numerous options yet make the map experience intuitive for the end user? What about the issues of data currency and scaling? Do you allow end users to submit data? How do you let them zoom in as much as they want to see all the shops and restaurants on Main St. when the nearby trail data should only be used at 1:7920 scale? How do you provide a successful end user experience when the user does not know what a zoom box does within the map? How does the developer get around technology limitations that are less than intuitive to the user? Come and enjoy the trials and tribulations of developing interactive web maps as presented by a GIS professional who "just can't relate"!

Putting Food Scraps to Work: Development of Vermont's Compost / Biogas Data Viewer and Information System

David Healy
Vice President
Applied Information Management
Stone Environmental Inc.
dhealy@stone-env.com

Barbara Patterson
Project Database Specialist
Applied Information Management
Stone Environmental Inc.
bpatterson@stone-env.com

Stone Environmental has developed the GIS-web-based, "Vermont Compost / Biogas Data Viewer". This is the first statewide GIS-based system to provide multiple users with information that helps in efforts to divert food waste from landfills into renewable energy and soil restoration. This presentation will describe the development and creation of the application and provide insights from the lessons learned and next steps and a demonstration on how the Data Viewer works.

[http://organics.stone-env.com/VTCompostBiogas/bin-release/index.html]

The Data Viewer was developed to serve a multiple user communities. The application allows users to view Compost and Biogas related information spatially and to access details of each dataset. Compost data includes potential food scrap generators, existing compost facilities, compost facility service areas, and suitable land for new composting facilities. Biogas data includes existing farm anaerobic digesters, farm locations, and distance from farms to 3-phase power.

GIS and Public Safety – More Than a Pin Map

Richard Annitto
Executive Vice-President
Bowne Management Systems
RANNITTO@BOWNEGROUP.COM

GIS has long been a tool used by public safety agencies to produce meaningful products for emergency response planning and for first responders. This success has provided the GIS community with the opportunity to continue to evolve and to create solutions. One of the success factors in the development of these solutions is the emergence of Enterprise GIS and foundation datasets.
Enterprise GIS supports the development of comprehensive and accurate data (e.g. street centerline, common place, 3-D, and address points) that is essential for Emergency Management, Police, Emergency Medical, Fire, and Public Health agencies. Equally important is the ability to maintain the data in an integrated, consolidated manner, using workflow and data versioning capabilities available in modern commercial off the shelf (COTS) GIS software.

Public Safety applications have successfully leveraged Enterprise GIS data, using heterogeneous solutions including web services, spatial extraction/transformation/load (ETL) routines, mobile GIS, integration of commercial data APIs, and sensor technology. Applications such as situational awareness, computer aided dispatch and nearest call routing, crime analysis and reporting systems, automatic vehicle location (AVL) systems, and incident planning and management have successfully integrated Enterprise GIS data and emerging technologies.

The presentation will provide a high level overview of how local governments in NYS have used Enterprise GIS and technology to improve public safety planning and response activities.

GIS Applications for Public Safety in Genesee County

Steven Sharpe
foltremari@co.genesee.ny.us
Steven Sharpe
Director of Emergency Communications
Sheriff's Office
Genesee County
ssharpe@co.genesee.ny.us

Over the past four years, Genesee County, NY has undergone a transformation in respects to the way emergency 9-1-1 dispatch is conducted. A new dispatch center provided an opportunity for the communications center to upgrade to a new GIS based Computer Aided Dispatch (CAD) System. The presentation will provide an overview of the transformation for this award-winning project, including the layers created, map enhancements and future plans.

Session 3C in the Broadway 3
Web GIS

Design and Implementation of a GIS-Based Site Selection Tool for the Long Island Sound Stewardship Initiative

Austin Fisher
austin.fisher@fountainsamerica.com

This presentation will highlight key aspects of a project to develop a web-based GIS site selection tool for use by the Long Island Sound Stewardship Initiative. The main objective of the project was to develop a GIS tool that can be used to identify sites (e.g., tax parcels) in the Long Island Sound watershed study area, which should be prioritized for protection, enhancement, and/or restoration.

This application was developed using ArcGIS Server with the Flex API. It is fundamentally a site suitability model-building tool, designed to evaluate geographic criteria relevant to the identification of sites for stewardship. It employs a very flexible design, supporting the inclusion of a wide range of input data and a virtually unlimited number of user-defined models. These models are based on a set of one or more geographically significant criteria. Each criterion is based on a geographic relationship established between a GIS layer and the candidate sites being evaluated. The geographic relationship is defined by selecting from a set of spatial analysis operations. Numeric scores are then assigned to the potential outcomes of each criterion. Each candidate site is analyzed and scored based on the criteria comprising the model, and cumulative final score will are calculated by totaling the values for each of the criteria. The application includes functionality for building new models, and editing and running existing models.

Creating a Web-Based GIS Data Sharing Network for the Southern Tier Central Region

Jeffrey Volpe, GISP
GIS BUSINESS SEGMENT LEADER
Bergmann Associates
jvolpe@BERGMANNPC.com

Dave Bubniak
Southern Tier Central Regional Planning
GIS Specialist

The Southern Tier Central Regional Planning and Development Board have initiated the design and implementation of a centralized GIS data warehouse for the Southern Tier Central Region. This region covers the Counties of Chemung, Schuyler and Steuben. This initial project was completed to implement the foundation (ArcSDE, ArcGIS Server, SQL Server) of the web-based GIS data sharing network to allow efficient and centralized data storage, management and access for the region's base GIS data (orthophotos, parcels, road centerlines, hydrography, boundaries). This presentation will provide an overview of the steps taken to implement this regional vision as well as outline the future vision and plans for expanding this network to meet the needs of other business processes.

Session 3D in Broadway 4
GIS and CAD

3D Visualization of CAD Models in ArcGIS: 2 Case Studies on a Budget

Edward F. Garrigan, P.L.S.
Vice President, Land Services Division
e.garrigan@ctmale.com

Caroline Westort
c.westort@ctmale.com

The desire to visualize before and after design scenarios in GIS is now new. The 3D worlds of CAD and GIS have been interfacing with each other for years. The reasons for ongoing hurdles may be proprietary, different origins and evolution of the technologies, and budget. Several initiatives like the GeoDesign

initiative at UC Santa Barbara (URL here) aim to address the issue and develop strategy to create more seamless exchange between the two platforms. Meanwhile, thousands of GIS and CAD professionals try to wrest out cost-effective solutions with off-the-shelf software. We describe two examples here:

1) Global Foundries Fab 8, site design and Mod Building, Malta, NY
2) Lake Placid Hilton Hotel, site design and proposed hotel

The hope is to advance our collection of tools, methods, resources and capabilities with the feedback generated from documenting our process here. First, some definitions:

Visualization = The display of existing and proposed conditions of a project to be built, i.e. "before" and "after". Realism is the goal, with abstraction liberties taken to enhance efficiency and show the project in context.
3D = Three-dimensions. A computer model possessing z-coordinate for every x,y pair.
GIS = Geographic Information Systems.Aplatform for display and analysis of geospatial information.
CAD = Computer Aided Design/Drafting. Also a platform for parametrically defining, building and displaying subcomponents of an object; optimized for editing in an iterative fashion.

Tools,including hardware and software, will be discussed, together with methods and results.

Best of Both Worlds, AutoCAD Civil 3D and ArcGIS

Chuck Pietra
Sr. Technical Applications Manager
O'Brien & Gere

This lecture is centered around project execution where both Autodesk Civil 3D Map 3D and ESRI's ArcGIS are centric tools in the project. Many times in Geotechnical, Civil Environmental projects, it is necessary to have both products working in concert with one another. Project Managers with projects that involve different groups with different project roles and responsibilities are many times confronted with trying to bring the two worlds together elegantly.

This lecture uses a real geotechnical project to show more than how ESRI data can be used in Civil 3D Map 3D through import/export/FDO, but what needs to be done to bring groups and work processes together, as well as data back and forth seamlessly.

The participant will be introduced to a real geotechnical site remediation project and relate to the challenges of data overload as well as project participants that have software preference that are different design and geospatial analysis tools. The discussion covers the challenges of keeping the project on track even though primary toolsets are dramatically different. The strengths, weaknesses, complimentary features, do's and don'ts of Civil 3D Map 3D and ArcGIS as it applies to the project at hand are presented, demonstrated and discussed.

Project description, scope, and overview discussed in detail
Overview of project tools i.e.: Civil 3D Map3D and ArcGIS
Demonstration showing available data for the project
Demonstration and discussion of the different methods that data can move back and forth between the two platforms
A discussion of different workflow scenarios between users to achieve the maximum efficiency and minimize data redundancy
An in depth demonstration of how design requirements are achieved with Civil 3D
An in depth demonstration of analogies requirements for the project and what tool is best for what
The two worlds are compared in respect to presentation and client viewing/query of the data via the web with MapGuide and ArcExplorer/Publisher

The class is intended for Civil Environmental and Geotechnical Designers, Scientists, and Project Managers.

Tuesday, October 26, 2010
Session 4   10:45 am – 12:15 pm

Session 4A in Broadway 1
OpenSource GIS

The GIS Behind iMapInvasives: the "Open-Source Sandwich"

Georgianna Strode
gstrode@admin.fsu.edu

Invasive species are widely considered to be one the greatest threats to biodiversity (Wilson, 2001). This is a global problem encompassing many different non-native plants, animals, and even microbial pathogens. Many individuals, agencies, and organizations are tracking invasive species, but sometimes the multiple approaches result in fragmented and disparate data sources that do not encourage information sharing. For land managers and regional planners to make informed decisions on invasive species management, it is important to have the "big picture" for their area.

iMapInvasives is designed to facilitate data sharing between groups and to provide a more accurate picture of invasive species distribution. iMapInvasives provides functionality for the general public, citizen scientists, land managers, and regional planners including viewing invasive species data, entering data, providing email alerts, and generating early detection reports. The technology tools for achieving these goals are challenging. iMapInvasives uses a customized combination of propriety and open-source tools -- sometimes called "the open-source sandwich." This presentation provides a general overview of the sandwich and how the individual parts work together utilizing OpenLayers, MooTools, Python, Django, ESRI's ArcGIS Server, and PostGRES databases.

The iMapInvasives Project Partners are the New York Natural Heritage Program (NYNHP), the Florida Natural Areas Inventory (FNAI), The Nature Conservancy (TNC), and NatureServe. The Florida Resource and Environmental Analysis Center (FREAC) at Florida State University does the programming for the iMapInvasives web site. The NYNHP administers the iMapInvasives database for New York with support from NYS Department of Environmental Conservation and the Environmental Protection Fund.

Sharing geodata in real time: an open source solution

Steve Signell
GIS Analyst
Adirondack Ecological Center
SUNY-ESF
ssignell@esf.edu

Stacy McNulty
Research Associate
Adirondack Ecological Center
SUNY-ESF
smcnulty@esf.edu

Colin Beier
Research Associate
Adirondack Ecological Center
SUNY-ESF
cbeier@esf.edu

The Adirondack Park Regional GIS (APRGIS) consortium has developed a web application that works toward the goal of giving data consumers real-time access to the most current data available.   Built on an open source stack including PostGIS, Geoserver, OpenLayers and ExtJS, the site provides one-stop access to data provided by the NY Department of Conservation, the Adirondack Park Agency, Natural Heritage Program Invasive Plants program, and the Adirondack Lakes Survey Corporation, among others. We will demonstrate the site and show how dynamic database links give data producers the ability to securely share their data in real time.

Web GIS – A clear case for open source

Josh Pierro
Web GIS Portal Manager
Bureau of Environmental Surveillance and Policy
NYC Department of Health and Mental Hygiene
jpierro@health.nyc.gov

With the confluence of rapid developments in web and mobile technologies, and the swell of new open source GIS software, the field of internet GIS is undergoing a paradigm shift. Open source software is tearing down the barriers of entry (cost) for developing internet mapping applications, and the availability of web based mapping APIs (Google, Open StreetMap, MapQuest) makes developing internet mapping applications easier than ever.

The argument will be made that comparable, if not superior, web GIS applications can be developed, deployed and hosted for a fraction of the cost of solutions built with commercial software. This position will be supported by case studies (Cycling the Erie Canal, NYC CityMap) where commercial software was abandoned for open source. Additionally, some emerging trends in the geographic space will be touched upon (the explosion of mapping apis, foursquare and mobile based apps, location based gaming).

Session 4 B in Broadway 2
Maximizing ArcGIS

Automating ArcGIS ModelBuilder for Analyzing Nonpoint Pollution Impacts in the Carmans River Watershed

Fred Pieper
Director, Application Development
Institute for the Application of Geospatial Technology
fpieper@iagt.org

Lee Herrington
Professor Emeritus of Resources Information Management
Department of Forest and Natural Resources Management
State University of New York College of Environmental Science and Forestry
lpherrin@esf.edu

As part of a prior research project, ArcGIS ModelBuilder was used to create a model of the potential impact of land use change on nonpoint pollution runoff into the Carmans River located on Long Island, NY. The fundamental research, data compilation and processing, and initial model development work was the subject of a previous NYSGIS conference presentation. The current presentation provides a project update focused on recent efforts to translate the research models into an automated application for planners and other non-technical end-users so that they could easily conduct their own analyses within the ArcGIS desktop environment. This work was sponsored by SUNY-ESF and partially funded by a grant from the NYS Department of State. In collaboration with SUNY-ESF and the original model developer, IAGT adapted the original models and designed and developed the interactive application.

The presentation will cover the key technical aspects involved in the development effort as well as a demonstration of the application's functionality. The structure of the original manually-run ModelBuilder research models will be described, followed by an explanation of what aspects required modification to support an automated interface. Additional topics to be covered include the overall system requirements and design considerations, the system architecture, significant issues addressed during development, application scenarios, system limitations/future development opportunities, and use of the application outside of the Carmans River pilot project area.

Maximizing the Off-the-Shelf Potential of ArcGIS for ROW Vegetation and Real Estate Management

Paul Breier
GIS Analyst/Programmer
GIS
Gomez and Sullivan Engineers, P.C.
pbreier@gomezandsullivan.com

Lana Khitrik
GIS Program Manager
GIS
Gomez and Sullivan Engineers, P.C.
lkhitrik@gomezandsullivan.com

When utility companies wish to build a GIS to help them manage Rights-of-Way (ROW) real estate and vegetation data, they often pursue a custom GIS application. These applications are attractive, as they offer features tailored to ROW workflows and procedures. They also have the benefit of allowing end users who have little GIS experience to complete data entry and querying tasks in a few clicks of a button. These benefits of custom applications, however, come at a price. Custom GIS applications typically take a significant amount of time and money to implement. This is not only because of the initial man hours required to develop them, but also those to maintain them once they have been deployed. What is more, custom applications tend be rigid in the sense that they cannot be easily changed to reflect new ROW workflows or procedures. Every workflow or procedure change, no matter how slight, usually requires a corresponding reprogramming and redeployment of the application.

Because of the disadvantages associated with custom GIS applications, we rely on a non-customized strategy when building GIS solutions for ROW real estate and vegetation management. This strategy consists of maximizing the off-the-shelf potential of standard ArcGIS geodatabase technology. We have found that this strategy, especially when it involves a well-designed geodatabase schema, delivers the same functionalities and user-friendliness aspects as custom ROW GIS applications, but at a much reduced level of overhead.

Understanding ESRI Geodatabase Replication: A Technical Software Demonstration

Kate Buss
Senior GIS Analyst
Geospatial Division
Bergmann Associates
kbuss@bergmannpc.com

The intent of this presentation is to provide a concise introduction and software demonstration on ESRI's geodatabase replication mechanisms. This technical presentation will explain how and why geodatabase replication can be used with an ArcSDE geodatabase to distribute data to other ArcSDE or file geodatabases. Through this presentation and live ArcGIS Desktop software demonstration, the following topics may be discussed:

- Why you might want to implement replication
- The benefits of geodatabase replication
- What is required to perform replication
- The different types of ESRI replication (Check out/Check in Replication, One Way Replication & Two Way Replication)
- The various ArcGIS tools available to assist with replication
- How to automate the replication process

At the conclusion of this presentation, audience members will have learned the fundamentals of ESRI geodatabase replication and how it can be implemented within their organization.

Session 4C in Broadway 3
Local Government

Implementing Shared Municipal Services to Improve Local Government Efficiency

Richard Slutzah

Senior Vice President
Bowne Management Systems, Inc.
rslutzah@bownegroup.com

Trends over the last few years have been to increase the use of shared services to improve the delivery of information to local governments. The goals of this approach are to provide local governments with improved access to current data, reduce redundancies and costs and improve efficiencies of operation. These are consistent with the State's Local Government Efficiency Grants program. This presentation will examine some of the approaches being used to accomplish these goals including:

•	Web based systems hosted by a central (County) government but accessed by many smaller local governments;

•	Web Services to enable local governments to perform common functions and queries against central GIS databases. Commonly used web services can be used to query addresses, parcels and streets but more sophisticated services can be used for functions such as emergency dispatch where alarm location maps can be generated and sent directly to fire houses;

•	Cooperative data management arrangements. New York State continues to encourage the creation of consortiums and there are many examples of such arrangements throughout the State;

•	New technologies – Vendors such as ESRI, Google, Bing and others are constantly introducing new concepts in data sharing, access, etc., which can make it possible for even the smallest of governments to use GIS technology to improve their operations and constituent services.

This presentation will describe some of the successful implementations of these approaches throughout the State.

Building Multi-Government Geospatial Programs: The Future of Public Sector GIS in New York State

Sam Wear
Assistant CIO (GIS)
Westchester County GIS
White Plains, New York
stw1@westchestergov.com

Decades of GIS technology development now clearly point to a set of evolving trends which support, and justify, the expansion of multi-government and regional GIS programs. Increased availability of geospatial data, particularly from within the business sector, increased bandwidth and internet connectivity, broadened acceptance of Open Geospatial Consortium (OGC) standards, powerful web mapping services, "open-access", and a wide range of new easy-to-use geospatial viewers, now offer many new options to associations of governments, not-for-profits, or similar consortiums of public sector programs.

This presentation will provide an overview of current efforts by Westchester County GIS which is providing a framework to provide GIS capacity to local governments. Focusing on governments and organizations with limited personnel and declining financial resources, the Westchester effort leverages existing county GIS infrastructure to provide cost-effective internet-based GIS data viewers, map services for open source compliant viewers and AutoCAD users, data development support, and access to the County's GIS Data Warehouse. The author suggests similar county-led programs are possible throughout New York State.

Multi-Jurisdictional Infrastructure inventory (New York State JIMI Project)

Craig Schorling
Business Development Manager
Transmap Corporation
cschorling@transmap.com

In 2008, Transmap was selected to be part of the Lewis County Joint Infrastructure Management initiative (JIMI) project. Aging infrastructure is a challenge to communities attempting to accommodate growth as well as to those hoping for growth. Small rural communities are challenged to find the fiscal resources to adequately maintain their infrastructure. Maintenance tends to be reactive. Two Counties (Jefferson and Lewis) and 13 municipalities are part of the over 1,300 miles of roadway infrastructure collection and implementation into a work order management system.

The JIMI project received a Local Government Efficiency Grant that will cover 90 percent of the project cost.

Transmap will digitally map the more than 1,300 miles of roads in two counties collecting pavement distress, signs, bridges, culverts, fire hydrants, meter boxes, valve boxes and storm water infrastructure. Transmap will implement all features into the ArcGIS environment as well as two work order management systems (CarteGraph and PubWorks).

Session 4D in Broadway 4

Map Critique

Tuesday, October 26, 2010
Session 5   1:30 pm – 3:00 pm

Session 5A in Broadway 1
Rich Internet Applications

Demystifying Rich Internet Application (RIA) Development with ArcGIS Server

Larry Spraker
President
Fountains Spatial
larry.spraker@fountainsamerica.com

Web-based GIS application development has undergone a dramatic change in the last eighteen months. While the focus for many years has been on server-side development in technologies such as ASP, ASP.NET, Java and ColdFusion, the recent Flex and Silverlight APIs for ArcGIS Server has quickly shifted the focus to building rich internet applications (RIA) using these client-side APIs. This presentation will demystify the concept of rich internet applications, discuss the Flex and Silverlight APIs for ArcGISServer, explain the advantages and disadvantages over server-side development, and will present the significance of RIAs and why it should clearly be the focus of any future application development within your organization. Several Rich Internet Applications will be demonstrated to illustrate the concepts discussed.

FLEX Outside the Box: Balancing Functionality & Fluff

Dave Cook
GIS Analyst
Engineering
Development Authority of the North Country
dcook@danc.org

Peter McAlenney
Senior Developer
Fountains Spatial
peter.mcalenney@fountainsamerica.com

Web-based GIS has long been a bridge between GIS professionals and non-technical end users. Deployed by organizations wanting to disseminate spatial data for decision making, these systems are champions for demonstrating ROI. However, end user demands are changing. No longer satisfactory are canned web apps brimming with functionality, but deprived of design.

How are GIS professionals to balance web app functionality with end user demands for geographic eye candy? Many organizations are turning to Rich Internet Applications (RIAs), transitioning their anonymous web apps from dowdy ADFs to sexy Flex viewers. The ESRI- supplied Sample Flex Viewer (SFV) offers a stepping stone for organizations to climb aboard the flash web-app bandwagon. But what is possible outside the SFV development box?

This presentation takes a practical look at the development of a completely out-of-the box FLEX-based web app for a unique NYS public authority, the Development Authority of the North Country (DANC). DANCis a

multi-faceted organization owning and operating regional water & wastewater, telecommunications, and solid waste management facilities in the north country area of Jefferson, Lewis, and St. Lawrence Counties. This presentation is co-presented by DANCand Fountains Spatial and is rated-G for general audience. It will combine familiar GIS terminology, technical aspects of data preparation, and FLEX code development for the GIS professional as well as administrative, ROI, and end user design considerations for those relatively new to GIS technology.

Moving Ahead with Flex Internet Applications: Saratoga County Web Map

Anya Rozanova
anya.rozanova@fountainsamerica.com

The latest development in the Web GIS technology - the Rich Internet Applications such as Flex and Silverlight – is causing a lot of excitement among GIS practitioners but also making them wonder whether it is the right time to make a switch. With the web presence being a must and some of the old technologies such as ArcIMS slowly phasing out, the Rich Internet Applications offer a great advancement by providing enhanced functionality and a superior web experience. The question remains, however, whether the advantages offered by the new technology outweigh the necessary investment of resources (namely time and money). Do the new web applications offer enough to the end user to justify the switch?

This presentation focuses on a successful example of one such transition and discusses challenges and advantages that come along with it. We are going to demonstrate the Saratoga County Web Viewer application that was migrated from ArcIMS to ArcGIS Server 9.3.1. using Flex (aka Flash) API in spring, 2010.

The transition to a Flex Internet Application is discussed from the end user, the County and the developer perspective. We are going to demonstrate many design improvements that were introduced in the new application and helped improve user experience and efficiency. We are also going to discuss the important issue of project funding and how enhanced capabilities of the application may help justify the initial investment. Other topics include lessons learned, possible further enhancements as well as general thoughts on using the new technology to help solve problems and create a better user experience.

Session 5B in Broadway 2
Imagery

What's New in ArcGIS 10: Where Imagery is Core to GIS

Gerald Kinn
Senior Imagery Specialist
ESRI
gkinn@esri.com

Lindsay McGreevy
Market Research Analyst
Esri
lmcgreevy@esri.com

What role does imagery play in your day-to-day work? How could you better leverage the imagery your organization has collected over time? Knowing that almost all ArcGIS users interact with imagery to complete their daily tasks, Esri has added many new capabilities in ArcGIS 10, the latest release of ArcGIS, that can help you better leverage the investment your organization has made in imagery. Join us for this demonstration, which will showcase a two-terabyte collection of New York State imagery featured in the plenary session of the 2010 Esri International User Conference. Using this New York imagery catalog, we will demonstrate how ArcGIS 10 improves access, management, analysis, and visualization of your organization's imagery. We will explore how the complete ArcGIS 10 system can leverage your imagery across applications for the desktop, web, mobile devices, and the cloud. We will also show how ArcGIS 10 makes your daily work easier by making imagery more accessible for creating beautiful and fast basemaps, enhancing high-quality cartographic products, performing powerful spatial analysis, as well as managing historical and current imagery collections of all sizes.

Session 5C in Broadway 3
Field Data Collection

Bringing GIS based Asset Management to NYSDOT

Susan Knauss
Region 8 GIS Coordinator
NYSDOT
mknauss@dot.state.ny.us

Over the past year the NYSDOT Regional Asset Managers and GIS coordinators have been collaborating on creating life cycle management processes for several assets; guide rail, sidewalks and corners, retaining walls and signs.

This talk will cover instituting the collaboration to create the asset data schemas, the challenges of creating an initial inventories and update processes and the benefits of successful implementation which include improved data flow from Planning to Design, ability to assess and report on regulatory compliance and shared use across departments and contractors.

The implementation for guide rail will be highlighted. The demonstration will show how the same geodatabase and ArcPad Check Out/In procedure & forms are being used to support internal staff & external contractors for both field data collection and desktop editing.

The emphasis is be on "how to" , sharing problems to avoid and solutions that may help others

Emergency Assessment Field Tool -- NYSDOT's Road Status and Damage Assessment Tool

Henry Kovacs
Mapping Technologist
Information Technology
New York State Department of Transportation
hkovacs@dot.state.ny.us

The Road Status and Damage Assessment (RSDA) Tool is a GIS-based field application developed for emergency assessment teams to rapidly collect and report field conditions during incidents in New York State. The data collected is used to prioritize the deployment of limited Department resources, as well as report on the progress of DOT response activities. This session will cover the development and implementation of the Road Status and Damage Assessment Tool as well as its contribution to NYSDOT's incident management competency.

Innovations in GIS for Travel Surveys

Timothy Michalowski
t.michalowski@srbi.com

Mr. Timothy Michalowski is the GIS Manager at Abt SRBI in the New York City headquarters office. Mr. Michalowski will lead an interactive presentation demonstrating the use of recent GIS innovations for the field of travel surveys and data collection.

Abt SRBI is currently completing the first large scale Global Positioning Satellite (GPS) based travel survey in the United States. The survey is being conducted with over 3,000 households in Ohio utilizing personal GPS tracking of their travel behavior, resulting in over 2 million GPS points collected. This innovative data collection technique offers new potential for travel surveys without traditional paper based diaries. GPS data collection, personal GPS devices, sample data collected, and the role of GIS for processing and analysis will be presented.

In addition, Mr. Michalowski will discuss how Abt SRBI GIS is utilizing ESRI ArcGIS Server 9.3.1 technology for advanced data processing in travel survey data. With this technology GIS models arebuilt for automated GIS geocoding, data processing, and spatial analysis.

Mr. Michalowski's credentials include a Master of Urban Planning and Policy from the University of Illinois at Chicago (UIC) specializing in GIS for Urban Planning. Mr. Michalowski joins Abt SRBI from the New York City Department of Transportation (NYC DOT), where he was responsible for GIS technology in the IT department.

"Redefining The Concept Of Food Deserts: A Case Study From Rutland, Vermont: A Study of Rural Food Deserts Rutland County, Vermont"
by Brandy Bunkley & Cody Currier,
Green Mountain College

Poster

Cody Currier
currierc@greenmtn.edu

Cody Currier
Student
Green Mountain College
currierc@greenmtn.edu

Brandy Bunkley
Student
Green Mountiain College
bunkleyb@greenmtn.edu

Food deserts are generally regarded as areas with limited access to healthy, affordable food sources. The term was initially used in reference to a housing project and has since been applied to various urban areas, examining factors such as household income, and ethnicity with regards to food security.   However, the concept of food deserts has not been examined thoroughly with regards to rural areas and distance traveled for access to healthy food.   We explore the concept of food deserts within a single county of rural Vermont to evaluate the differences between access to food versus what we define as healthy food.

Rutland County has a well-developed food system based heavily on regional consumption and small, locally owned businesses. It is possible however, based on the fact the most of the county is comprised of sparsely populated towns rather than urban centers, that there are areas without sufficient food availability with respect to both quantity and quality.   In order to evaluate food quality and availability, we identified the location of all convenience stores, grocery stores, supermarkets, village stores, farmers' markets, farm stands and CSAs in Rutland County. Each food source was ranked based on the quantity and quality of food they provided. This information was used to characterize the spatial relationship between the distance from individual residences in the county to sources of high, medium, and low, quality food sources.

The maps produced on the subject indicate that although all residences are within a reasonable distance of a food source, access to high quality food sources is inconsistent and unevenly distributed within the county.

An Updated Digital Geological Map and GIS Database For Clinton County, New York: Engaging Undergraduate Students in Geologic and GIS Based Mapping

Poster

Carol Cady
ccady@stlawu.edu

Cody Lavack
Master Candidate
Geo-Information Science Program
Salem State University
celava06@stlawu.edu

J. Ball
SUNY Plattsburgh
jball001@plattsburgh.edu

David Franzi
Professor
Earth & Environmental Science
SUNY Plattsburgh
fanzid@plattsburgh.edu

Eileen Allen
Coordinator GIS Laboratories
Earth & Environmental Sciences
SUNY Plattsburgh
alleneb@plattsburgh.edu

Jeff Chiarenzelli
Professor
Geology
St. Lawrence University
jchiarenzelli@stlawu.edu

SUNY Plattsburgh and St. Lawrence University have initiated a project to produce a digital geological map and GIS database for Clinton County, New York that will be useful for regional-scale natural resource evaluation and management, engineering projects and long-term planning. The 1:250,000-scale Geologic Map of New York (Adirondack Sheet), published in 1970, and the Surficial Geologic Map of New York (Adirondack Sheet), published in 1991, currently provide the only countywide geologic coverages but ata scale that is not useful for many purposes.

Original sources of geological information for Clinton County include state and federal maps and reports, published literature and unpublished maps and reports in state and federal geological survey open-files. Much of this information predates the statewide compilations and thus the statewide maps do not include results from recent mapping, stratigraphic revisions or discoveries since their publication. First-year efforts focused on 7.5-minute quadrangles in the northern tier of the county. Geologic data from original sources and new field mapping to resolve conflicting interpretations form the basis for the new geologic compilation. Database tables cross-reference each map unit to its source. Original and derived geospatial data accompany the new maps as separate raster and vector files. The project simultaneously addresses the need for an updated regional geologic map and provides opportunities for undergraduate students to engage in field and GIS-based mapping. Components of the larger mapping effort can be tailored to fit the interests and academic backgrounds of individual students and thus is well suited for undergraduate research.

Be Fit Westchester County

Poster

Cynthia Marx
xxc1@westchestergov.com

Be Fit Westchester is Westchester County's countywide fitness initiative which encourages residents to live a healthy lifestyle by being active and eating healthy.   The initiative highlights local activities such as hiking, biking and swimming locations available in Westchester.   In addition, a food store survey has been conducted by the County's Department of Health to evaluate the availability of healthy food in the county.

"Be Fit Westchester" has been integrated into the Westchester County primary mapping application, Mapping Westchester County.   Users can now easily locate fitness locations in the county.

Experiments in visualizing historical census records: NYC 1790-1840

Poster

Paula Kay Lazrus
lazrusp@stjohns.edu

Creating GIS maps that aid in the visualization of early census data can be challenging. While there might be numerous categories of data collected in these early years, the city was seen as a whole and thus it is difficult to identify changes by neighborhood or similarly restricted areas. In an attempt to address this problem, I have been creating digitized maps of early wards, and neighborhoods off of maps from the 1700s and later, and then attempting to link them to the census data in question where possible. This has permitted me to begin to chart changes in occupation and ethnic make-up during this important period that begins with the first census of 1790.

Geographically Weighted Regression and Visualization of Environmental Impacts of Brown Fields on Lung and Colon Cancer Incidents

Poster

Tao Tang
tangt@buffalostate.edu

Casey Anderson
Student
Geography and Planning
Buffalo State College
andercr19@mail.buffalostate.edu

While cancer is one of the major causes of mortality, the environmental and health factors that impact the development of cancer remains unclear. Researches indicated that the impact of environmental toxins may cause mental diseases of newborn babies.(Shuang et al. 2010), lung and liver diseases (Kajekar 2007, Stanca et al. 2008), and breast cancer (Jun-Sheng et al. 2008, Kietz et al. 2009). Previously, GIS analysis was applied for health care demand and hospital services (Murad 2007, Faruque et al. 2003), and human exposure to urban air pollutions (Clougherty et al. 2009, Tang et al. 2010). The objective of current research is to analyze the environmental pollution impacts of brown fields (BF) on lung and colon cancer incidents in New York State. Kernel density of BF was analyzed. Geographically Weighted Regression (GWR) model was applied to compute the degrees of impacts of BF on the cancer incidents. GWR generates a localized regression for each of the observations across the study area in predicting the relations. Modeling results show that the high incidents of colon cancer per 1000 persons occur sporadically in the west side of Hudson River Valley, Adirondack region, and the east part of the Long Island; and those of lung cancer occur sporadically in the west side of Hudson River Valley and Adirondack region. BF density based GWR shows high local R2 in New York City and Rochester areas for colon cancer incidents, and that of New York City area only for lung cancer incidents.

Identification of Land Parcels with High Natural Resource Value in Clifton Park, NY

Poster
Sean Hickey
sc04hick@siena.edu

Sean Hickey
Student
Environmental Studies
Siena College
sc04hick@siena.edu

The Friends of Clifton Park Open Space is a not-for-profit organization in Clifton Park, NY that aims to promote the development of a contiguous belt of open space in the western portion of the Town for recreational, agricultural, and ecological purposes.This project supports this aim by identifying land parcels in Clifton Park with high natural resource value. Priority parcels are identified through (1) the collection of natural resource data through GIS clearinghouses and field visits, (2) developing a workable rating criteria based on the natural resource data, by which each land parcel is evaluated, and (3) the presentation of the results through a user-friendly series of maps and spreadsheets. The project uses natural resource data from the New York State Department of Environmental Conservation, the National Hydrography DataSet, the U.S. Geological Survey, and the New York State Orthoimagery repository among other sources as well as data collected in the field and through literature review.   Each parcel is evaluated based on is value in an individual natural resource category such as habitat potential or water resource value as well as its cumulative value for all categories.   The hope is that parcels of high natural resource value could be added to the Town's already existing open space "anchor" points.

Indexing State Failure as Function of Social, Economical, and Political Indicators

Poster

Ashraf Ghaly
ghalya@union.edu

A failed state is a product of societal pressures that build up overtime resulting ultimately in chaos. A careful, or even casual, observer of international affairs can easily develop a sense of discomfort with certain countries where instability is the norm rather than the exception. The sources of instability and unrest are numerous and vary in different societies. The organization of Fund for Peace collects and compiles data to quantify what is referred to as Failed States Index (FSI). This index is based on social, economical, and political indicators assessed from thousands of articles and reports processed from electronically available sources. The social indicators include: 1) mounting demographic pressures, 2) massive movement of refugees or internally displaced persons creating complex humanitarian emergencies, 3) legacy of vengeance-seeking group grievance or group paranoia, and 4) chronic and sustained human flight. The economic indicators include 5) uneven economic development along group lines, and 6) sharp and/or severe economic decline. The political indicators include 7) criminalization and/or delegitimization of the state, 8) progressive deterioration of public services, 9) suspension or arbitrary application of the rule of law and widespread violation of human rights, 10) security apparatus operates as a "state within a state", 11) rise of factionalized elites, and 12) intervention of other states or external political actors. Although the stated goal of the FSI was to develop ideas forpromoting greater stability worldwide, this paper will thoroughly examine the given indicators to look for symptoms leading to early identification of alarming signs pointing to a potential failed state. This early detection can help mobilize the international community into providing preventive measures to promote stability.

Leveraging Annotated and GeoReferenced Aerial Photographs
For Infrastructure Management

Poster

Connor Lynch
xxc1@westchestergov.com

Westchester County GIS benefitted from a project undertaken by Westchester County Department of Environmental Facilities (DEF) to scan and georeference over 1100 annotated aerial photos depicting the Westchester County Sanitary Sewer Trunk lines.

The scanned images are classified by sewer district, contract number, and title, in a searchable database. In addition to the county trunk lines and manholes, municipal sanitary sewer connections are also shown. Annotations include the size of the sewer main, the manhole number, and the direction of flow.   The image set (and the County sanitary sewer system itself) covers a majority of the county, including the Blind Brook, Mamaroneck, New Rochelle, Ossining, Peekskill, Port Chester and Yonkers districts. Nearly half of the scanned images cover the Yonkers district (the largest), which extends into 20 municipalities.

Madison County GIS Conversion Project

Poster
Jennifer Barber
jennifer.barber@co.madison.ny.us

Madison County, NY is undertaking an ambitious Geographic Information System (GIS) upgrade of the tax mapping database. This project includes data conversion from PC ARC/INFO 3.5.2 ©1998 to ArcGIS 10, edge matching of the tax map sections and datum conversion from NAD27 to NAD83. New tax map templates and various macros supporting map maintenance are being developed. Special districts (school, fire, sewer, etc.) review and corrections are being performed on the approximately 37,000 active parcels. Survey maps filed with the County Clerk's office are being cross referenced to the tax parcels and digital copied are hyperlinked to the data. The hard copy property information will be scanned and linked to the parcels. At the conclusion of this project the tax mapping maintenance process will be more efficient, more accurate and better able to serve the needs of our clients.

Mapping Soil Potassium Supplying Power in New York State Using Soil Geographic Databases

Poster

Michael Roberts
sdd4@cornell.edu

Michael Roberts
Student
Natural Resources
Cornell University
mr586@cornell.edu

Quirine Ketterings
Professor
Department of Animal Science
Cornell University
qmk2@cornell.edu

Sheryl Swink
Extension Associate
Department of Animal Science
Cornell University
sns7@cornell.edu

Stephen DeGloria
Professor
Department of Crop and Soil Sciences
Cornell University
sdd4@cornell.edu

Potassium (K) is an important soil nutrient for production of high quality crops in New York State (NYS). Knowing the status and spatial distribution of soil K supply potential of NYS mineral soils is important to determine fertility needs prior to crop establishment. Soil K supplying power is primarily a function of clay content, soil depth, rooting depth, organic matter, coarse fragments, and mineralogy. Generally, soil K supplying power is ranked from highest to lowest: well-drained clayey soils, well-drained silt loam surface soils with a silt loam to silty clay loam subsoil, coarser textured silt loams that have less clay in the subsoil, sandy loam soils, and low-organic matter, sandy soils. Based on existing soil K supplying power rankings associated with soil series occurring in NYS, area-weighted estimates were derived and mapped using SSURGO for selected counties and using the U.S. General Soil Map (aka STATSGO2) for a statewide assessment. Field trials are ongoing to estimate soil K supplying power under various cropping systems and to validate spatial estimates using the above-referenced soil geographic databases. Additional spatial analysis is anticipated where selected soil properties are estimated from these soil geographic databases and combined to predict the spatial distribution of soil K supplying power independent of soil series designation.

Mapping Westchester County Application

Poster

Xiaobo Cui
xxc1@westchestergov.com

Westchester County GIS, in collaboration with Bowne Management Systems, Inc. has migrated it's legacy public facing ArcIMS Mapping Westchester County application to ArcGIS Server.

The updated application includes a variety of new user functions including the ability to type in an address or to select a place of interest to find the nearby facilities and get the driving directions using Google Maps. The application also includes nine sub-applications   including Solar Power Property Finder, Indian Point Evacuation Zone, Hurricane Evacuation Zone, County Sewer Districts, Livable Community, Green Facilities/Services, and Community Facilities.   The new ArcGIS Server version also includes the ability to access traffic camera feeds, the new Be Fit Westchester component and a series of historical aerial photos into the new application.

The application is developed using ESRI's ArcGIS Server 9.3.1 JavaScript API.   The map catches for the aerial photos are also built to increase the performance.   The Google Maps and Bing Maps technologies are integrated into the application.

NYSDEC Fishing Access and Artificial Reefs: No reason to say, "The one that got away…"

Poster

Philip LoCicero
pvlocice@gw.dec.state.ny.us

Philip LoCicero
Department of Environmental Conservation
Bureau of Fish, Wildlife and Marine Resources
pvlocice@gw.dec.state.ny.us

Recreational fishing and diving in NY are not only leisure activities but support local economies with the purchases of fuel, bait, lunches, tackle and dive gear. A portion of these sales support the federal Sport Fish Restoration program which is responsible for creating ramps and recreational fishing opportunities. The NYSDEC Fishing Access and Artificial Reefs unit is tasked with acquiring property for ramps and building reefs that all NY residents may use.

Finding an access ramp to launch a boat on Long Island is not always easy. There are many jurisdictions, including state, county, township, village and private, and knowing which ramps are open to the public can be confusing. We created maps which focus on the township level and show locations of boat ramps in Nassau and Suffolk counties. Along with the maps are descriptive tables which boaters can refer to in order to learn which entity has jurisdiction, applicable fees, available amenities and a brief description of each ramp.

By mimicking natural habitat and taking advantage of life strategies of desirable fish, reefs are created to enhance fishing opportunities. Divers enjoy artificial reefs as well, especially those constructed of derelict fishing vessels or military vehicles. The NYSDECcontracted georeferenced side scan SONAR images of the state managed reefs. From these images we verified individual patch reefs by comparison with known coordinates from when each structure was deployed. Once we located and identified all of the patch reefs we made graticule based maps and constructed accompanying information tables for distribution.

Parcel-based Land Use

Poster

Paul Gisondo
xxc1@westchestergov.com

This map is a composite of 234,170 unique tax parcels, comprising all the municipal tax parcels of Westchester County. It was created from a land use data layer in which every tax parcel is coded for its specific land use.   For the purposes of this map, land use codes were condensed into 18 "generalized" categories.   Parcel land uses were originally derived from municipal assessment data containing ORPS (Office of Real Property Services) codes which define specific land use as assigned by local assessors. The data was reviewed in-house and selectively edited for completeness, consistency and currency.   Proof maps were provided to each municipality for review.

Produced by the Westchester County Department of Planning,   February 2010.

Producing Local Community Health Indicators

Poster
Thomas Talbot
tot01@health.state.ny.us

Background: Environmental Health Indicators have been produced at the county level for the Centers for Disease Control and Prevention (CDC) Environmental Public Health Tracking Program.   However, counties are large and have environmental health indicatorswhich vary widely between local areas within the county.

Developing indicators at the local community level is challenging.   Sub-county data are available at disparate geographic scales such census tract, ZIP code, water district or grid cell. Sincethese scales differ, it is difficult to compare indicators.   In addition, when data are presented for small areas, problems arise, including fluctuations in rates due to small numbers and increased risk of disclosing confidential health information.

Objective: Develop methods to provide local community health indicators at the same geographic scale while providing stable health outcome rates and protecting patient confidentiality.

Methods: We developed a Geographic Aggregation Tool (GAT) to stabilize rates of disease due to small numbers by merging small areas into larger areas until an appropriate population is reached. GIS overlay methods were employed to move data from one scale to another.   Finally, we used ranking procedures to avoid the disclosure of confidential data and to facilitate the comparisons across indicators.

Results: We present examples using health data to show how these methods can be used to produce indicators at the census tract level. Although there is no ideal solution to developing community health indicators on a consistent geographic scale, the GIS methods developed are useful in providing indicators relevant to local communities.

St. Lawrence County GIS On-Line -- Comparing and Contrasting how County Data is Served Up on the Web

Poster
Jason Pfotenhauer
jpfotenhauer@stlawco.org

Jason Pfotenhauer
Deputy Director
County Planning Office
St. Lawrence County, New York
jpfotenhauer@stlawco.org

St. Lawrence County, located on New York's northern border, is the State's largest county in land area, covering 2,822 square miles.   Mapping such a large county has always been a challenge, but providing spatial information in such a rural area is as critical as anywhere else.

Two organizations, the County's Planning Office and the Libraries GIS Program at nearby St. Lawrence University (SLU), have separately created online map viewers of the County.   SLU has been publishing maps on the Web for six years, while recently a partnership was formed between the County and Bryan R. McBride, GISP, of Geoserving.net.   Bryan developed the County's Open Geo Portal using open source GIS software, as a cost saving alternative for the County.

This poster compares and contrasts on-line spatial data served on a proprietary platform with an open source platform for the same geographical area.   Information presented will include types of data sets available, maintenance, life span, and intended audiences.
SLU has developed its web map server using ARCIMS software.   The WMS (http://stlawu.edu/gis/mapserver.html) offers maps for disciplines taught at the university, specifically geology and biology; provides a campus map with numerous geographical, social and recreational layers; and offers historical maps of the area.   The County's Open Geo Portal (http://www.opengeohost.com/maps/stlawrence/) uses open source technologies including GeoServer, OpenLayers and ExtJS.   Users can query individual parcels and overlay a variety of political boundaries and natural features with base map layers from Google, Bing, Yahoo, OSM, ESRI, MyTopo, and NYSDOP.

Westchester County GIS Georeferencing Historic Aerial Images from 1976

Poster

Deborah Parker
xxc1@westchestergov.com

Through the regular acquisition of aerial photography, Westchester County has documented its land use, history and physical development. Captured in a series of 12 campaigns flown between 1925 and 1995, the Planning Department's twentieth-century program produced nearly 6,300 original single-frame black-and-white contact prints.

Until recently, these images were only available for the public to view or order copies, on a walk-in basis in the White Plains County office building. Then through a New York State Archives (SARA) grant, the Westchester County Archives and Records Center scanned the original prints to digital format (TIF, 300 dpi), and through a contract, developed an ArcIMS application to allow users to search images by year, browse image center points on a map, and print.

But until the scanned images were geo-referenced, they couldn't be viewed side-by-side, in context of other GIS datasets, or easily compared with imagery from other eras.   GIS staff undertook a pilot to do this, selecting the high-quality, spatially complete 1976 series.

Using ESRI's ArcGIS v9.3 georeferencing toolbar, control points in each 1976 image were assigned to their corresponding point in the County's 2004 orthophotos.   With LizardTech GeoExpress v7 software, a Fishnet grid was used to crop all 485 images, to edge-match them. After reviewing for spatial consistency, the cropped images were color-balanced and output to a new mosaic.

The new 1976 image, along with 1947 and 1960 (to be completed next), will be a valuable addition to the GIS warehouse of aerial photography.

Westchester County GIS Municipal Tax Parcel Viewer

Poster

Zhenglu Zhang
xxc1@westchestergov.com

Westchester County GIS developed a "Municipal Tax Parcel Viewer", which was designed and developed entirely in-house. This application was deployed over the internet and made available to local governments. The application utilizes ArcGIS Server JavaScript API and cached map services for both tax parcel layers and aerial photos that increase the performance significantly and give users much better experience with the application. Leveraging the County's existing web mapping environment (ArcGIS Server REST services) the application requires no specialized GIS mapping software for end users.

This application will enable citizens to identify a parcel by simply clicking on any parcel, or search a parcel by owner's name, property's address or print key. Citizens and assessor's office are able to query surrounding parcels by entering a buffer distance and create mailing labels, which will be a PDF file in Avery standard format, directly from the program, or export the result to an Excel file for further editing. Users can switch to aerial photos to see the property's photograph or see the parcel layers overlay on top of the aerial photos in a transparent manner. Users are also able to view the property on Google Maps or Bing Maps by simply clicking on the links that generated programmatically when the parcel is indentified.

City of Ithaca New York, Sign Inventory

Poster

Matt Tiegel
mtiegel@cityofithaca.org

The City of Ithaca Sign Inventory Project successfully mapped 7,386 signs and 4663 posts in the City of Ithaca. The project required a team of two data collectors, two mobile GPS units, and 48 days of field work. Project planning began April 12, 2010, and a pilot study was completed in the beginning of May. Field work began May 5, 2010 and concluded August 10, 2010; a total of 14 weeks of data collection. Sign data was collected over 80 miles of City of streets and parks. The data was collected primarily on foot or bicycle which allowed this project to be very environmentally friendly. Vehicles were used only when necessary, less than two gallons of gas were used to complete this project.

Watertown, New York Pavement Condition Index Analysis

Poster

Howard Luxhoj, PE
President and CEO
hluxhoj@transmap.com

Craig Schorling, GISP
Business Development Manager
cschorling@transmap.com

In 2006, Gene Hayes (City of Watertown Superintendent of Public Works) wanted to start tracking pavement and assets digitally by using GIS. The City of Watertown had Transmap collect 100 miles of asset and pavement distress data. The data was integrated into Cartegraph Asset Management Software (PaveView, Work Orders, FlexView, etc.). Sidewalk, curbing, and PMS distresses were also integrated into an ArcGIS environment.

In 2010, Watertown wanted to keep up with pavement management by a 4-year re-inspection process. Transmap re-inspected the 100 miles of pavement distress data, and the data was again integrated into Cartegraph. This was done to help Watertown understand how their pavement is deteriorating over time.

"Transmap was able to provide the data in such a format that allows us to use this information when compiling our paving and street maintenance budgets. If you are considering the implementation of GPS/GIS based roadway asset inventory and management systems that can be quickly implemented... I would strongly recommend Transmap. The folks at Transmap have always been helpful whenever we call and are on a first name bases with our people in IT and Public Works," said Hayes.

This map represents Pavement Condition Index (PCI) data that the City of Watertown is using to determine pavement funding criteria. Pavement maintenance and rehabilitation dollars are best spent before pavement drops below a fair condition rating. Pavement Management is all about extending the life cycle of your pavement.

A Comparison of Spatial and Non-Spatial Methods for Determining Exposure Point Concentration

Poster

Bill Stiteler
ARCADIS US, Inc.
william.stiteler@arcadis-us.com

Philip Goodrum
ARCADIS US, Inc.
philip.goodrum@arcadis-us.com

Timothy Negley
ARCADIS US, Inc.
timothy.negley@arcadis-us.com

Gina Houck
ARCADIS US, Inc.
gina.houck@arcadis-us.com

The exposure point concentration (EPC) is an estimate of the arithmetic mean concentration of a constituent that may be potentially contacted by a receptor over a period of time that can be associated with an adverse health effect.   Typically, an EPC is calculated from a set of samples from an area that represent the potential habitat or home range of a receptor population.   To reduce the chance of underestimating the true mean, a 95 percent upper confidence limit for the mean (95UCL) is used for the EPC.   The assumption when calculating EPCs is that an unbiased sampling design is used and each observation is independent and identically distributed.   In practice, these assumptions are often violated due to targeted sampling efforts, and because many environmental contaminants exhibit positive spatial autocorrelation.   Therefore, simply pooling data without accounting for spatial information can lead to an estimate of the mean that is biased towards subareas that are oversampled or disproportionately represented.   Spatial weighting of a sample can yield estimates of an EPC with more favorable statistical properties.   While the risk assessment literature provides many examples of the application of spatial weighting methods, their performance has not been systematically studied for a range of conditions.   In this poster, we present the results of a simulation study comparing statistics with and without spatial weighting.   Results suggest that relatively simple declustering with Thiessen polygons can be expected to yield more reliable EPCs under a wide range of contamination scenarios and sampling designs.

Presentation of the Annual Partnership Award 26th Annual New York State GIS Conference

The New York State GIS Coordination Program's Standards and Data Coordination Work Group promotes formation of GIS partnerships in New York State. Through their efforts, a Partnership Summaries page is posted on the GIS Clearinghouse: http://www.nysgis.state.ny.us/coordinationprogram/reports/partnerships/index.html and an Annual GIS Partnership Award is presented at the NYS GIS Conference Banquet.

The Annual GIS Partnership Award recognizes a GIS partnership involving government agencies, academia, private business, and/or not-for-profit organizations. The Award is presented in hope that by recognizing these partnerships, existing GIS partnerships will grow, additional resource sharing will occur, duplication of efforts will decrease, and perhaps others will see the benefits provided and initiate similar unique partnerships.

Who is eligible ?

Any partnership that does not have an existing summary on the GIS Partnership Summary page AND partnerships that are on the Summary page but have expanded or significantly modified their original partnership (you will need to update your summary by resubmitting a Partnership Summary Form). Previous winners of the last two partnership awards include: the West Carthage Volunteer Fire Department Partnership, 2007 and last year's winners Jessie Braden and Jarlath O'Neil-Dunne of New York City's Urban Forest Program, are not eligible.

Partnerships considered for the award will be judged on the following criteria:

"Entries will be judged on their originality, innovation, and the scope of the partnership, such as number and diversity of participants or dollar savings of the partnership."

Partnerships may be submitted using the Partnership Summary Form by going to http://www.nysgis.state.ny.us/coordinationprogram/reports/partnerships/index.html which takes you to the GIS Partnership Summary page (scroll down and review some of the previously submitted partnership summaries). From this page click on "downloadable document in rich text format (rtf)" to take you to the actual form. It's a very easy one page form to fill out. Once filled out, just attach it to an e-mail and send to nysgis@cscic.state.ny.us

Deadline for new and updated award applications/summary pages is **September 30th**.

Advisory Council 26th Annual New York State GIS Conference

John W. Barge, Adirondack Park Agency mapping technologist, NYS Adirondack Park Agency

Eddie Bevilacqua, Associate Professor, SUNY College of Environmental Science and Forestry

Clark Burdick, GIS Consultant

Alex Chaucer, Skidmore College

Mickey Dietrich, GIS Specialist, Tug Hill Commission

Lee Herrington, Distinguished Teaching Professor, SUNY College of Environmental Science and Forestry

Eric A. Herman, GIS Program Manager*,* NYS Thruway Authority

Jeffrey L. Herter, GIS Unit Manager, NYS Department of State, Division of Coastal Resources

William Johnson, Assistant Deputy Director, NYS Office of Cyber Security

Cathy Keenan, GIS Coordinator, USDA Natural Resources Conservation Service

Verne LaClair, GIS Services Manager, PAR Government Systems Corp.

Susan Nixson, GIS Specialist, City of Ithaca

Lindi Quackenbush, Assistant Professor, SUNY College of Environmental Science and Forestry

Paul Szemkow, Instructional Support Specialist, SUNY College of Environmental Science and Forestry

Jeff Volpe, GIS Business Segment Leader, Bergmann Associates, Inc.