19th Annual New York State
Geographic Information Systems Conference

GIS -- Essential for the Modern World

October 1-2, 2003
Holiday Inn - Turf, Albany, New York

Conference Abstracts

Conference Program and Registration Flyer .pdf file

Sponsors

Central NY Region of the American Society for Photogrammetry and Remote Sensing
State University of New York College of Environmental Science and Forestry
New York State Office of Cyber Security and Critical Infrastructure Coordination

GIS can help agencies, companies, and NGO's meet the challenges facing society in a time of increased demands but diminished resources.

Starting eighteen years ago with a small gathering of early GIS users, the New York State GIS Conference has become a major GIS professional development opportunity for hundreds of GIS users in the state. Technical presentations feature working professionals who share their GIS experiences and solutions in dealing with real world problems like yours..

Meet fellow New Yorkers active in the GIS field, exchange information and experiences, and seek solutions to your geographic data management needs. Professional networking opportunities help you develop a network of fellow GIS users which can continue through the years. In the exhibit area, GIS vendors and consultants display the latest in GIS hardware, software, analytical techniques, and services.

Keynote Speaker: This year's keynote speaker will be *Mark Monmonier*, Distinguished Professor of Geography at Syracuse University's Maxwell School of Citizenship and Public Affairs, speaking on **Cartographies of Surveillance**.

The emergence of geospatial technology as a highly effective and potentially invasive means of surveillance raises technical, ethical, and policy issues related to overhead imagery, integrated terrestrial surveillance, data integration, and locational privacy. Policy issues arising from aerial surveillance include "shutter control," restrictions on the sale of imagery to enemies of American allies, law-enforcement applications, industrial spying, and recent troubling challenges to our "reasonable expectation of privacy." In addition, terrestrial surveillance with video cameras, red-light cameras, automatic toll-collection systems, and gunshot-detection systems raise diverse questions about retention period, the out-sourcing of law enforcement, "market pricing" of public roads, and the nature of "public space." Geographic information systems pose additional concerns related to "dataveillance" and geomarketing, online cadastres, crime mapping, and community notification of sex offenders. Questions include the public nature of "public data," the possible use of crime mapping as a form of red lining, and the role of maps to aid—or limit—the shaming of pedophiles. Global positioning systems (GPS) and location-based services (LBS) raise a host of related issues focusing on locational privacy, including the need for an "opt-in" standard of locational privacy,

location tracking as a substitute for incarceration, and the redefining of deviancy. Ethical issues focus on the relevance of technological determinism, the relative proportions of public and private control, and the need to provide means of redress of something when goes wrong. Not a jeremiad, this presentation is intended to promote informed skepticism among mapmakers and the public.

Banquet: **Dinner cruise on the Hudson River $28.00 includes transportation to Captain JP Cruise. Link to Captain JP boat** captainjp

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General Information

Call for Papers: The deadline for submission of presentation proposals has passed.

Exhibits: Exhibit booths are available to GIS software and hardware vendors, consulting firms, agencies, and nonprofit organizations. Please indicate your interest in exhibiting on the response form to receive full information. Or, for more information, contact Maureen Wakefield at (315) 470-6891 or mwakefield@esf.edu. Exhibitor information will also be updated on the website.

Job Exchange: Bring resumes and position descriptions to the conference to be posted.

GIS Partnerships Award: The New York State Coordination Program is happy to announce the Fourth Annual GIS Partnerships Award. Details will be added to the website.

Conference Workshops: This year's conference will feature workshops throughout the conference. Several workshops are scheduled, including GIS Datums, Projections and Distortions, GPS for GIS: Is This Surveying?, Cartography, AVL, SARA Grants, and GIS for GASB 34.

The New York State GIS Coordination Program also will hold work group meetings, to include Local Government; Standards and Data Coordination; and the Clearinghouse.

Tours

(space limited and advance sign-up required):

Wednesday, October 1 10:00 a.m. – 12 Noon

SEMO Emergency Operations Center with NYS Cyber Security and Critical Infrastructure Coordination presentation: Using GIS to Assist with Emergency Preparedness, Robert Hehrer, NYS CSCIC.

MapInfo: The MapInfo GIS Software Development Process.

Ask the Expert informal discussion sessions

Last Year's Conference

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Ask the Expert informal discussion sessions

Last Year's Conference

NYS GIS Conference

Conference Schedule

WEDNESDAY, OCTOBER 1

8:00 AM REGISTRATION OPENS

9:00 AM CONCURRENT SESSIONS 1

1A. Imagery and Remote Sensing: Applications and Resources Moderator: Steve Smith, Cornell University

Status and Future of the New York Statewide Digital Orthoimagery Program. Tim Ruhren, NYS CSCIC.

Tidal Wetland Analysis Project Long Islansd, New York. Jeffrey Herter, Nikifor Nikiforov and Jeffrey Zappieri, New York State Department of State.

Build-Out Modeling through Land Transformation. Dave Nouza and Verne La Clair, PAR Government.

1B. Organizational Initiatives for NYS GIS and Beyond

 Moderator: Lee Herrington, SUNY-ESF

Development of the NYS GIS/LIS Association. Sam Wear, Westchester County GIS.

Formation and Development of a New York State Land Use \ Land Cover Working Group. John Mickelson, Columbia University.

The Geospatial One-Stop. Rachel Arulraj, Parsons Brinckerhoff.

1C. Workshop: Automated Vehicle Locator (AVL) Technology

Austin Fisher, Applied GIS, Inc. and personnel from Waypoint Technology.

1D. Standards and Data Coordination Workgroup

Ask the Expert Sessions:

Transitioning to Arc8. Larry Spraker, Applied GIS

ESRI Tips & Tricks. Frank Winters, NYS DOT, and Don Welsh, NYS CSCIC

9:30 AM GEOCACHING ACTIVITY

(limited to 15 people—advance sign-up required)

Tim Hallock, Fulton Montgomery Community College

Wednesday Morning, October 1, 10:00 a.m. – 12 Noon

Geocaching orientation and activity at the Holiday Inn—Turf

10:00 AM -- NOON TOURS

(space limited and advance sign-up required. Meet at location.)

(1) SEMO Emergency Operations Center

Building 22, State Office Campus, Albany, New York

The New York State Emergency Management Office (SEMO) coordinates Emergency Management Services for the State by providing leadership, planning, education and resources to protect lives, property and the environment. This tour will start with a presentation providing an overview of SEMO's roles, the Incident Command System (ICS) standard for managing incidents, and the function of the Emergency Operations Center (EOC) at SEMO. The tour will move on to a tour of the new SEMO GIS facility and a discussion of the role of GIS in the State's emergency response and the tools available to GIS staff.

Directions and a map will be provided to people registering for the tour. Registrants must bring a government-issued identification such as a driver's license or a State Agency ID card.

(2) MapInfo: The MapInfo GIS Software Development Process.

10:15 AM BREAK

10:45 AM CONCURRENT SESSIONS 2

2A. Visualization and GIS

 Moderator: John Barge, Adirondack Park Agency

Developing a Water Quality Model for FERC Re-Licensing Stakeholder Presentations. Samantha Bennett, Walden Associates, Inc.

Interpreting Geospatially-oriented Data in a Web-based Interactive 3D Environment: A Watershed Example. Fred Pieper, Global Science & Technology, Inc., and Matt Mercurio, Institute for the Application of Geospatial Technology.

GIS and 3D Simulation: Creating Real-Time Evolving Databases. Jim Schoenberg, Bergmann Associates.

2B. Web-Based GIS (I)

 Moderator: Austin Fisher, Applied GIS.

If You Build It (Right), They Will Come: Planning for an ArcIMS Application that Delivers GIS to the Whole Organization. Mark Wheeler and Mark Haberle, Applied GIS, Inc.

New York City Housing and Neighborhood Information System (NYCHANIS). Scott Mastellon, Bowne Management Systems, Inc.

Town of Onondaga Internet GIS - Lessons Learned about Bringing Effective GIS Technology into an Organization - A Case Study. Clark Burdick and Doug Wickman, C&S Engineers, Inc.

2C. Workshop: GPS for GIS – Is this Surveying?

Organized by the committee for a NYS GIS/LIS Association.

Jonathan Cobb, Waypoint Technology Group, Rob Mateja, Town of Colonie, John Trimber, Southern Finger Lakes Association of Professional Land Surveyors, Dan Bower, New York State Board of Engineering and Land Surveying

2D. Land Use / Land Cover Workgroup

Ask the Expert Sessions:

ArcObjects – VB, VBA. Laurie Serrett and Frank Winters, NYS DOT

Geocoding. Tom Talbot, NYS Department of Health (NYS DOS)

NOON – 1:00 PM LUNCH (SEPARATE FEE)

1:00 PM CONFERENCE PLENARY SESSION AND WELCOME

Keynote Presentation:

Cartographies of Surveillance. Mark Monmonier, Syracuse University.

Plenary Presentation:

The GIS State of the State. Bruce Oswald, NYS Office of Cyber Security & Critical Infrastructure Coordination (NYS CSCIC)

3:00 BREAK

3:30 CONCURRENT SESSIONS 3

3A. Public Safety and Homeland Security

Moderator: Ed Freeborn, NLECTC-NE.

Using GIS to Enhance Border Integrity. Ed Freeborn, NLECTC-NE.

Utilizing GIS to assist with Emergency Preparedness and Response. Robert Gehrer, NYS CSCIC

Public Safety using G.I.S. / G.P.S. Technology in Homeland Security / Disaster Preparedness in Fulton County, New York. Myron Messak, Mayfield Fire District #2, and Steven Smith.

Genesee County's GIS Initiatives for Homeland Security & Emergency Response. Jeff Volpe, Bergmann Associates, and Genesee County GIS Coordinator.

3B. Enterprise GIS

Moderator: Clark Burdick, C & S Engineers

GIS in Support of Humanitarian Relief and Contingency Operations in Afghanistan. Benjamin

Building an Enterprise GIS for the Town of Oyster Bay. Steve Boryk, Town of Oyster Bay, and Richard Slutzah, Bowne Management Systems, Inc.

Innovative GIS at the New York City GIS Utility. Jim Hall, PlanGraphics, Inc. at NYC DOITT.

The Nassau County GIS Data Maintenance Model. Joseph T. Jones, Nassau County, and Richard Annitto, Bowne Management Systems, Inc.

3C. Workshop: GIS for GASB 34

Organized by the committee for a NYS GIS/LIS Association.

Representatives of private sector and local government: Rachel Arulraj, Parsons Brinckerhoff, Robert Mateja, Town of Colonie, Tom Bodden, The Association of Towns of the State of New York.

plus presentation:

Using GIS in a Phased Approach to GASB 34 Compliance. Clark Burdick, C&S Engineers, Inc.

3D. Workshop:

GIS Funding Opportunities for Local Government.

Jennifer O'Neill, NYS Archives and Records Administration

Ask the Expert Sessions:

Orthoimagery. Tim Ruhren, NYS CSCIC

GPS Do's and Don'ts. Dave Hess, NYS DOT

5:15 PM Reception and Poster Session—Exhibit Area

Posters:

Compiling an Environmental Database for the Mid-Hudson Valley, New

York. Marnie Archer, Jill S. Schneiderman, and Meg E. Stewart; Vassar College.

Characterizing Structure and Change in New York City's Urban Forest. Daniel Arroyo, Luke D'Orazio, Jacqueline Lu, New York City Parks & Recreation.

GIS Application for Westchester County Citizen's Volunteer Monitoring Program. Xiaobo Cui, Westchester County Geographic Information Systems (Westchester GIS).

Topographic and Bathymetric Mapping and Imagery Acquisition along the Shores of Lake Ontario and the St. Lawrence River. Stuart Eddy, Great Lakes Commission.

Spatial and Three Dimensional Analysis of Wind Turbine Site Selection. Kevin A. Gray Ecology and Environment, Inc.

GIS Development Services for the Town of Cortland, New York. Ana Hiraldo, Westchester GIS.

GIS Applications for Emergency Response in Westchester County, New York. Ariane Porter, Westchester GIS.

Dynamic Modeling of Deforestation Trends in Eastern North America. Myrna Hall (1), Mary L. Tyrrell (2) and R. Neil Sampson (3), (1) SUNY ESF, (2) Yale School of Forestry, (3) The Sampson Group and Yale School of Forestry Research Fellow.

Bird Conservation Planning Using GAP Analysis Data. James Halperin, Michael Burger, Jillian Liner, Audubon NY.

GIS Development at Westchester County Airport. Deborah Parker Westchester GIS.

Incorporating GIS into an Urban Environmental Science Education Program. Michael Simsik, Affiliation: Cornell University Cooperative Extension – New York City Programs.

Delaware's Urban and Community Forests. David Nowak, Jeffrey Walton, John Dwyer, USDA Forest Service, and Latif G. Kaya, SUNY-ESF.

Using GIS to Support a Stream Buffer Ordinance for the Town of Ithaca, NY. Geraldine Tierney and Susan Ritter, Ithaca, NY.

GIS Development in Human and Social Services. Sam Wear and Cynthia Louie, Westchester GIS.

Customized Buffer Tool Using Avenue, Westchester County, New York. Tong Zhou, Westchester GIS.

6:30 PM Buses to dinner cruise on the Hudson

THURSDAY, OCTOBER 2.

7:00 AM CONTINENTAL BREAKFAST

8:00 AM CONCURRENT SESSIONS 4

4A. NYS GIS Conference Futures

After almost 20 successful years, the NYS GIS Conference operates with a generally "tried and true" format. The conference committee has tried some changes this year-- increased workshops, a dinner cruise, and a geocaching participatory activity. The committee is looking for other ways to improve the conference as well. Should it attempt to find a location which might be offer more attractions outside the conference, such as Lake Placid? Are participants willing to drive off the Thruway corridor in search of more interesting locations? Should more social activities be scheduled, such as geocaching, sightseeing, a public service event, or hiking? Come share your thoughts and ideas at this informal discussion session!

4B. Inventory and Data Collection Approaches

Moderator: Jeff Volpe, Bergmann Associates.

New York State DOT Rock Slope Inventory: Converting from a Linear Referencing System to GPS Based Locations. Douglas Hadjin and Thomas Festa, NYS DOT.

Integration of Photogrammetry and Mobile Mapping Technology to Support Infrastructure Data Capture. James Cannistra, Sanborn Map Company.

Mobile Data Collection and Mapping Systems for Environmental Compliance. Lisa Matthies, Ecology and Environment, Inc.

4C. Workshop:

GIS Datums-- What they are and why you should care.

Tom Meyer, University of Connecticut

4D. GIS in Education

Moderator: Lee Herrington, SUNY-ESF

Fulton-Montgomery Community College's Spatial Information Technology Center. John Borst, Fulton-Montgomery Community College.

Exploring the North Cascades with GPS. Abu Badruddin, Cayuga Community College.

NYS GIS Coordinating Program Education Workgroup Discussion Session.

Ask the Expert Sessions:

Web Applications Using ArcIMS. Jeff Barth, NYS DOT

MapInfo Tips & Tricks. Jeff Herter, NYS Department of State (NYS DOS)

9:15 AM BREAK

9:45 AM CONCURRENT SESSIONS 5

5A. Geodatabases

 Moderator: Mike Courneen, True North/Erie CCC

Migrating Parcels to a Geodatabase. Phillip Bellizia, Highland Geographic and Sara Frankenfeld, Warren County NY.

Tax Parcel Geodatabase Model for New York State. John Ferketic, James W. Sewall Company; Mathew Andrews and
 John Trimber, Weiler Division.

Building a Topologically Enabled GIS Database for Modeling in Natural Environment. Tao Tang, Ian Bruce, Maria
 Dolce, and Chris Andrle, Buffalo State College.

5B. Web-Based GIS (II)

 Moderator: Larry Spraker, Applied GIS.

CUGIR Web Mapping Interoperability -- Pipe Dream or the Future of GIS Data Access and Sharing? Jonathan Corson-
Rikert, Cornell University.

Web Services – An Emerging Paradigm for Distributing Spatial Capabilities. Mark Haberle, Applied GIS, Inc.

Web Mapping and Database Implementation for Illinois DOT. Greg Coniglio, Ecology & Environment, Inc.

5C. Workshop: Map Design

Bill Johnson, NYS OCSCIC

5D. Local Government Advisory Council

Ask the Expert

Printing & Plotting. Mike Martel and Don Welsh, NYS CSCIC

Land Use/Land Cover. Eileen Allen, SUNY Plattsburgh, Roger Barlow, USGS

and John Mickelson, Columbia University

11:00 MINI-BREAK

11:15 CONCURRENT SESSIONS 6

6A. Vendor Session

 Moderator: Austin Fisher, Applied GIS.

ESRI Software Update. Mark Scott, ESRI Boston.

Completing the Circle: Accessing Documents from Your GIS. Dan Foster, General Code.

What's New with MapInfo Products. Doug Gordon, MapInfo.

6B. Data Sharing

 Moderator: Ed Freeborn, NLECTC-NE.

Lake Ontario—St. Lawrence River Framework Data Project: Storing, Maintaining, Discovering, and Sharing Geospatial
 Information over a Common Geography. Roger Gauthier, U.S. Army Corps of Engineers, and Ian Gillespie,
 Environment Canada.

Land Information Ontario. Mike Robertson, Land Information Ontario.

Data Sharing and Access in Pennsylvania - The Pennsylvania Spatial Data Clearinghouse. Ryan E. Baxter, Pennsylvania
 Spatial Data Access.

6C. Workshop: Analytical Cartography: Distortions caused by cartographic projections.

Tom Meyer, University of Connecticut

6D. Local Government Advisory Council

Ask the Expert

Map Design Tips. Bill Johnson, NYS CSCIC

GIS & Census Information. Bob Scardamalia, Empire State Development

12:30 PM LUNCH

1:45 PM CONCURRENT SESSIONS 7

7A. GIS and Transportation

 Moderator: Clark Burdick, C & S Engineers

Analyzing Enterprise Bridge and Highway Data with GIS. Eric Herman, New York State Thruway Authority.

Town of Marlborough GIS-based Pavement Management System. Cindy Albrechtsen, Town of Marlborough, and Todd
 Stuber, C.T. Male Associates, P.C.

Otsego County Traffic Accident Mapping Program. Marybeth Vargha, Otsego County.

Status of the NYS Accident Location Information System (ALIS) Project. Cheryl Benjamin, NYS CSCIC, and Julio
 Olimpio, ESRI-Boston.

7B. Demographics, Social Science, and GIS

Moderator: Bruce Oswald, NYS CSCIC

Map New York. Deirdre Oakley, Lewis Mumford Center for Comparative Urban and Regional Research University at Albany, SUNY.

Visualization and Modeling Spheres of Influence: Enclaves of Contrary Voting Patterns in Presidential Elections 1980-2000. Joe D. Francis, Cornell University.

Positional Error in Geocoding of Residential Addresses. Thomas Talbot and Michael Cayo, NYS DOH.

Spatial Interpolation of Sewer Network Load and Population Change in the Towns of Cheektowaga, Clarence, and Lancaster, Western New York. Tao Tang and Daniel Kenny, Buffalo State College.

7C. Application Development and Infrastructure

Moderator: Sara Frankenfeld, Warren County

Customizing ArcGIS with ArcObjects – Keep from Falling Off the Cliff of GIS Application Development. Laurie Cooper (Serrett), NYS DOT.

Customizing ArcGIS for a Public Works Inventory. Liz Arabadjis, Highland Geographic, and Sara Frankenfeld, Warren County NY.

There is More to GIS than Just Maps. Graham Hayes, Malcolm Pirnie / Red Oak Consulting, and Fran Bebak, Erie County Water Authority.

7D. NYS GIS Coordination Program Education Work Group

Ask the Expert

Datums & Projections. Tom Henderson, NYS CSCIC

GIS data in Relational Databases (ORACLE, SDE). Kevin Hunt, New York State Department of Transportation (NYS DOT)

Workshop Abstracts

Automated Vehicle Location Technology

Austin Fisher

Applied GIS, Inc.

137 Jay Street

Schenectady, New York 12305

518-346-0942 x201 p.

518-346-5322 f.

www.appliedgis.com

This workshop on automated vehicle location (AVL) technology will be presented jointly by Applied GIS, Inc., and the Waypoint Technology Group. It will cover the basics of AVL deployment including equipment and communication services. Content will focus on the use of AVL by organizations to enhance dispatching, routing, and vehicle management activities. Demonstrations of AVL solutions will also be provided.

Geodetic Datums: What they are and why you should care.

Dr. Thomas Henry Meyer

The University of Connecticut

U-87, 1376 Storrs Road

Storrs, CT 06269-4087

Tel: (860) 486-2840 Fax: (860) 486-5408

Email: tmeyer@canr.uconn.edu

Geodetic datums are that which define the meaning of spatial position, i.e., latitude, longitude, and height. Therefore, all the spatial information stored and displayed in a GIS ultimately depend on a geodetic datum for their meaning. There is more than one geodetic datum and mixing data together from different datums causes havoc in a GIS. This talk will explain what geodetic datums are, why there is more than one of them, what goes wrong when data in different datums are mixed together, and what to do about it.

Analytical Cartography: Distortions caused by cartographic projections.

Dr. Thomas Henry Meyer

The University of Connecticut

U-87, 1376 Storrs Road

Storrs, CT 06269-4087

Tel: (860) 486-2840 Fax: (860) 486-5408

Email: tmeyer@canr.uconn.edu

There is no such thing as a perfect cartographic projection. All projections distort various spatial properties of the features on a map. This talk will introduce the kinds of distortions projections create and how to remove the distortions, if necessary

Geocaching Hands-On Session

Tim Hallock, Fulton-Montgomery Community College, Spatial Information Technology Center

GPS or Global Positioning System is a rapidly emerging technology utilizing satellite-based technology. Most commonly recognized as a hand-held or car dash-board navigational units, GPS also allows for accurate location identification, ground point verification and other data collection capabilities. This workshop unlocks the mystery of GPS with a comprehensive look at what this once highly-classified military satellite system does. You will learn the essential basic skills of using a GPS unit. It will be of particular interest to those associated with transportation, economic development, emergency services, surveying, etc., as well as outdoor recreation enthusiasts like hunters, hikers, backpackers, and boaters who need navigational skills. Practical, hands-on GPS skills will be taught outdoors. The group will also participate in the new sport of 'geocaching' and will find caches hidden on and around the hotel property. GPS receivers will be provided by FMCC's Spatial Information Technology Center or you may bring your own.

GIS for GASB 34

As part of a series of workshops being sponsored by the newly-formed New York State GIS/LIS Association, this session will provide an overview of GIS as applicable to GASB 34 Implementation. The presentation will provide an understanding of GASB's Statement No. 34 with respect to infrastructure reporting requirements and how GIS is able to provide the mechanism to solve real problems with improved infrastructure management practices. Two local government case studies will be presented. Lessons learnt with respect to technology, procedures and standardization will also be discussed.

Presenters will include a representative from the private sector and Geospatial One-Stop (Dr. Rachel Arulraj, Parsons Brinckerhoff) and a local government GASB Statement 34 Implementer (Robert Mateja, Town of Colonie). Tom Bodden, Manager of Research and Information, The Association of Towns of the State of New York will also speak briefly at the presentation. Participation of attendees is strongly encouraged.

GPS for GIS – Is this Surveying?

Jonathan Cobb, Waypoint Technology Group

Rob Mateja, Town of Colonie

John Trimber, LS, Southern Finger Lakes Association of Professional Land Surveyors

Dan Bower, LS, New York State Board of Engineering and Land Surveying

As part of a series of workshops sponsored by the to-be-formed New York State GIS/LIS Association, this session will focus on key issues facing both the GIS and land surveying professions, including the use of GPS for GIS data collection, legal interpretations and implications, and the status of pending legislation related to licensure. Presenters will include a representative from the GPS industry (Jonathan Cobb, Waypoint Technology Group), a GIS manager (Rob Mateja, Town of Colonie), a professional land surveyor (John Trimber, LS, Southern Finger Lakes Association of Professional Land Surveyors), and a member of the state's regulatory oversight body (Dan Bower, LS, New York State Board of Engineering and Land Surveying). Comments by and participation of attendees is strongly encouraged.

Participant affiliation reports have been developed for both the 1999 Conference in Albany and the 2000 Conference in Liverpool. While the information is listed below, the reports are also available in pdf format (*Adobe Acrobat* Required).

15th Annual New York State Global Information Systems Conference
October 4-5, 1999, Albany, NY

Participant Affiliation Statistics

Federal Government: 7

USGS	3	Military	3	Forest Service	1

State Government: 102

DEC	17	Real Property	11	Thruway/transp	4
DOT	11	Motor Vehicles	7	Police/criminal	3
DOH	6	Recreation	7	Assembly	3
DOL	4	Housing/dorm	4	Power authority	2
DOS	4	Tech transfer	4	ERDA	2

Also, representatives from: SARA, geological survey, archives and records, agriculture & markets, economic development, emergency management, soil & water conservation, mental health, public service

County Government: 96

Planning	18	GIS	11	Sewer/Water	4
Real Property	15	Highway/transp	6	B.R.I.S.	2

Also, representatives from: finance, police, and legislative

Local Government: 53

Planning	6	Environment	3
Transportation	5	Water/Sewer	3

Also, representatives from: police, information, engineering, public works, and aviation.

Independent Government: 2

Oneida Indian Nation	1	Tuscarora Nation	1

NGOs: 7

Education: 61

University	37	Students	18	K-12	6

Private Sector (non-exhibitors): 85

Consulting	36	Utilities	8	Lumber	3
Engineering	14	Design	5	Mapping	2
Software	8	Transportation	5	Construction	1

Exhibitors: 78

Total Participants: 481 (non-exhibitors: 413)

16th Annual New York State Global Information Systems Conference
September 20-21, 2000, Liverpool, NY

Participant Affiliation Statistics

Federal Government: 10

USGS	2	NASA	2	Military	2

Also, representatives from: USFWS, NPS, and Army Corps of Engineers.

State Government: 69

DOT	10	Real Property	6	Public Works	3
DOS	6	DEC	5	DMV	3
DOH	6	Environ/Econ	5	Power	2
Technology	6	Recreation	3	BOCES	2

Also, representatives from: SARA, OASAS, archives, DOL, emergency management, soil & water conservation, police, engineering, children/families, attorney general and general services.

County Government: 80

Planning	17	SWCD	5	Highway/transp	2
Real Property	6	GIS	2	EMC	2

Also, representatives from: mapping, B.R.I.S. and governing.

Local Government: 45

Fire	5	Water/Sewer	3	Planning	2
Public Works	4	DEP	2		

Also, representatives from: conservation, parks & recreation, and transportation.

Independent Government: 1

Oneida Indian Reservation

Education: 62

University	53	Students	7	K-12	2

Private Sector (non-exhibitors): 78

Consulting	17	Technology	5	GIS	3
Utilities	14	Software	4	Conservation	3
Environ. Edu.	9	Transportation	4	Museum	2
Engineering	6	Mapping/Data	4		

Also representatives from: communication, real property development and career information.

Exhibitor Staff: 71

Total Participants: 416 (non-exhibitors: 345)

Keynote Abstract:

Cartographies of Surveillance

Mark Monmonier

Maxwell School of Syracuse University

The emergence of geospatial technology as a highly effective and potentially invasive means of surveillance raises technical, ethical, and policy issues related to overhead imagery, integrated terrestrial surveillance, data integration, and locational privacy. Policy issues arising from aerial surveillance include "shutter control," restrictions on the sale of imagery to enemies of American allies, law-enforcement applications, industrial spying, and recent troubling challenges to our "reasonable expectation of privacy." In addition, terrestrial surveillance with video cameras, red-light cameras, automatic toll-collection systems, and gunshot-detection systems raise diverse questions about retention period, the outsourcing of law enforcement, "market pricing" of public roads, and the nature of "public space." Geographic information systems pose additional concerns related to "dataveillance" and geomarketing, online cadastres, crime mapping, and community notification of sex offenders. Questions include the public nature of "public data," the possible use of crime mapping as a form of red lining, and the role of maps to aid—or limit—the shaming of pedophiles. Global positioning systems (GPS) and location-based services (LBS) raise a host of related issues focusing on locational privacy, including the need for an "opt-in" standard of locational privacy, location tracking as a substitute for incarceration, and the redefining of deviancy. Ethical issues focus on the relevance of technological determinism, the relative proportions of public and private control, and the need to provide means of redress of something when goes wrong. Not a jeremiad, this presentation is intended to promote informed skepticism among mapmakers and the public.

Workshop Abstracts

Automated Vehicle Location Technology

Austin Fisher

Applied GIS, Inc.

137 Jay Street

Schenectady, New York 12305

518-346-0942 x201 p.

518-346-5322 f.

www.appliedgis.com

This workshop on automated vehicle location (AVL) technology will be presented jointly by Applied GIS, Inc., and the Waypoint Technology Group. It will cover the basics of AVL deployment including equipment and communication services. Content will focus on the use of AVL by organizations to enhance dispatching, routing, and vehicle management activities. Demonstrations of AVL solutions will also be provided.

Geodetic Datums: What they are and why you should care.

Dr. Thomas Henry Meyer

The University of Connecticut

U-87, 1376 Storrs Road

Storrs, CT 06269-4087

Tel: (860) 486-2840 Fax: (860) 486-5408

Email: tmeyer@canr.uconn.edu

Geodetic datums are that which define the meaning of spatial position, i.e., latitude, longitude, and height. Therefore, all the spatial information stored and displayed in a GIS ultimately depend on a geodetic datum for their meaning. There is more than one geodetic datum and mixing data together from different datums causes havoc in a GIS. This talk will explain what geodetic datums are, why there is more than one of them, what goes wrong when data in different datums are mixed together, and what to do about it.

Analytical Cartography: Distortions caused by cartographic projections.

Dr. Thomas Henry Meyer

The University of Connecticut

U-87, 1376 Storrs Road

Storrs, CT 06269-4087

Tel: (860) 486-2840 Fax: (860) 486-5408

Email: tmeyer@canr.uconn.edu

There is no such thing as a perfect cartographic projection. All projections distort various spatial properties of the features on a map. This talk will introduce the kinds of distortions projections create and how to remove the distortions, if necessary

Geocaching Hands-On Session

Tim Hallock, Fulton-Montgomery Community College, Spatial Information Technology Center

GPS or Global Positioning System is a rapidly emerging technology utilizing satellite-based technology. Most commonly recognized as a hand-held or car dash-board navigational units, GPS also allows for accurate location identification, ground point verification and other data collection capabilities. This workshop unlocks the mystery of GPS with a comprehensive look at what this once highly-classified military satellite system does. You will learn the essential basic skills of using a GPS unit. It will be of particular interest to those associated with transportation, economic development, emergency services, surveying, etc., as well as outdoor recreation enthusiasts like hunters, hikers, backpackers, and boaters who need navigational skills. Practical, hands-on GPS skills will be taught outdoors. The group will also participate in the new sport of 'geocaching' and will find caches hidden on and around the hotel property. GPS receivers will be provided by FMCC's Spatial Information Technology Center or you may bring your own.

GIS for GASB 34

As part of a series of workshops being sponsored by the newly-formed New York State GIS/LIS Association, this session will provide an overview of GIS as applicable to GASB 34 Implementation. The presentation will provide an understanding of GASB's Statement No. 34 with respect to infrastructure reporting requirements and how GIS is able to provide the mechanism to solve real problems with improved infrastructure management practices. Two local government case studies will be presented. Lessons learnt with respect to technology, procedures and standardization will also be discussed.

Presenters will include a representative from the private sector and Geospatial One-Stop (Dr. Rachel Arulraj, Parsons Brinckerhoff) and a local government GASB Statement 34 Implementer (Robert Mateja, Town of Colonie). Tom Bodden, Manager of Research and Information, The Association of Towns of the State of New York will also speak briefly at the presentation. Participation of attendees is strongly encouraged.

GPS for GIS – Is this Surveying?

Jonathan Cobb, Waypoint Technology Group

Rob Mateja, Town of Colonie

John Trimber, LS, Southern Finger Lakes Association of Professional Land Surveyors

Dan Bower, LS, New York State Board of Engineering and Land Surveying

As part of a series of workshops sponsored by the to-be-formed New York State GIS/LIS Association, this session will focus on key issues facing both the GIS and land surveying professions, including the use of GPS for GIS data collection, legal interpretations and implications, and the status of pending legislation related to licensure. Presenters will include a representative from the GPS industry (Jonathan Cobb, Waypoint Technology Group), a GIS manager (Rob Mateja, Town of Colonie), a professional land surveyor (John Trimber, LS, Southern Finger Lakes Association of Professional Land Surveyors), and a member of the state's regulatory oversight body (Dan Bower, LS, New York State Board of Engineering and Land Surveying). Comments by and participation of attendees is strongly encouraged.

Contributed Presentations Abstracts (alphabetical by presenter)

Town of Marlborough, NY GIS Based Pavement Management System

Presenters

Cindy Albrechtsen, IAO

Assessor's Office

Town of Marlborough

Milton, NY 12547

(845) 795-5049

Todd Stuber

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Audio/Visual Needs

LCD projector for a laptop

The Town of Marlborough, NY has implemented a GIS based Pavement Management System (PMS) as a tool to help planning, budgeting and maintenance issues for the Town roads. The system relies on ArcGIS 8.X from ESRI and MicroPaver 5.1 from the US Army Corps of Engineers and the University Of Illinois.

Starting with a defined pilot study area, street centerlines, provided by Ulster County, were expanded into polygons in order to calculate the areas needed for inspection purposes. The resulting polygons were then categorized and subdivided into four subsequent levels: networks, branches, sections, and samples. Two networks were defined, Primary and Secondary Roads. Each network was then broken down into branches. In this case, each individual street was designated as a branch. The branches were broken down into sections at each intersection and each section was broken down into sample units based on area (2,500 ft2 +/- 1,000 ft2). The samples that were to be inspected were "randomly" selected based on a mathematical formula. State, County, private and any other roads not maintained by the town were excluded. The physical distresses of the samples that were to be inspected were collected via visual (surface) inspection. This information was brought back from the field and entered into the MicroPaver database, which could then calculate the Pavement Condition Index (PCI) for each section. The PCI ranges from 0 to 100 with 100 indicating perfect pavement. The results were then liked back to an ArcGIS layer and thematically mapped, with the PCI giving a visual representation of the condition of the Town roads. The PMS is currently being used in conjunction with an application for a $3,000,000bond to repave Marlborough roads by highlighting problem areas and publishing reports of existing conditions for those same areas.

Implementing GIS in a Clustered Server Environment

Presenter: Richard Annitto

Vice President

Bowne Management Systems, Inc.

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Topics: Enterprise GIS

Stirred by issues of terrorism and homeland security, GIS usage continues to grow in importance to governments throughout the State and the systems are becoming more 'mission critical' to governments of all sizes. In response to this need and the exponential growth in the size of GIS datasets, GIS is migrating from workstations and servers to SANS and clustered, fault tolerant servers. The presentation will highlight a number of recent GIS implementations using these new technologies and will explore some of the concepts and requirements of these advanced systems. It will also identify major advantages, and some of the pitfalls of this technology.

Case studies will include examples from the NYC Department of Transportation, Suffolk County, and NYC Transit Bus. Consulting services were provided by Bowne Management Systems, Inc., a member of the Bowne AE&T Group.

Customizing ArcGIS for a Public Works Inventory

Liz Arabadjis, Highland Geographic and Sara Frankenfeld, Warren County NY

Departments of Public Works (DPWs) are responsible for maintaining highways, bridges, signs and drainage systems. Many municipalities are currently collecting or considering collecting locational information and relevant attributes for features using GPS technology. In addition, DPWs regularly monitor pavement grades and traffic count information and locate this information using mile markers . The presentation demonstrates how ArcGIS can be customized to aid in the development and maintenance of DPW inventories. It discusses some of the considerations given to— and lessons taken from— designing and implementing an inventory management system including: Uploading and downloading inventory data from GPS units, using dynamic segmentation, automating report generation, and creating an historical database (e.g. displaying the features that existed at the intersection on January 1, 2002)

The Geospatial One-Stop

Dr. Rachel Arulraj, Parsons Brinckerhoff

is a Federal government E-Gov initiative whose results will include an Internet portal that will be used for data discovery and exchange. The components of the portal will be based on the framework standards currently being developed for all National Spatial Data Infrastructure (NSDI) Themes. I have participated in the standards development process as a member of the Transportation-Rail Modeling Advisory Team to develop the Data Content Standards for Transportation Networks (Rail). Currently, I am participating in the Framework Theme Harmonization effort. The team will harmonize the working drafts – Cadastral, Transportation, Hydrography, Government Units, Geodetic Control, Elevation and Imagery, in the process of making one standard.

Exploring the North Cascades with GPS

Abu Badruddin, Assistant Professor of GIS, Cayuga Community College, 197 Franklin Street, Auburn, NY 13021. Phone: 315.255.1743x2310; Fax 315.255.2117

This presentation is based on a weeklong trip to the North Cascades that the author made in July 2003. The purpose of the trip was to introduce GPS to the Northwest Indian College students in Bellingham, WA, during their field trip to the North Cascades. It was a wonderful experience of incorporating GPS to the field activities of participating students and teachers. Simple GPS receivers were used to mark the visited sites and trails. Comparisons between the outputs from

different grade GPS receivers reveal that inexpensive GPS receivers are adequate for teaching and learning the technology. The availability of free GPS data downloading and conversion software made inexpensive GPS receivers even more attractive for interesting mapping activities such as salmon nesting, bird citing, wildlife habitat, etc. This presentation includes a spatial description of the North Cascades and the interesting sites that were visited and mapped during the GPS activities.

Municipal GIS Business Plans: The Genesee County experience

Matthew S. Balling, AICP

Senior Planner

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In 2002, the Genesee County Legislature endorsed a GIS Business Plan as a means to manage its capital improvements in GIS. The plan establishes a five-year action plan for GIS development by calculating costs and prescribing a rationale for charging reproduction fees and distribution fees to private vendors. More significantly, through the Plan, the County recognized for the first time that GIS is a public good and that not all costs can be recovered from fees when calculating the full value of Geographic Information Systems in county life. This approach allowed the County to counter a long-standing belief that GIS should be a self-sufficient program driven completely by user fees to recover costs. With this program the County hoped to "re-engineer" its county wide GIS program by 2008. A year has passed since the development of the GIS Business Plan and several lessons have been learned.

The one (1) hour presentation will be made by Matthew Balling, AICP Senior Planner for Genesee County. The goal is to:

A digital projector and accompanying screen will be needed. The presenter will provide his own laptop PC and will refer to MS Powerpoint slides periodically.

Data Sharing and Access in Pennsylvania - The Pennsylvania

Spatial Data Clearinghouse

Ryan E. Baxter

IT Coordinator

Pennsylvania Spatial Data Access

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The Pennsylvania State University

University Park, PA 16802

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This presentation will give an overview of Pennsylvania Spatial Data Access (PASDA), the official spatial data clearinghouse for the Commonwealth of Pennsylvania. Since 1995, PASDA has provided an online catalog and access tools for spatial data created throughout the Mid-Atlantic region. PASDA's holdings now include over 30,000 metadata records and 250 Gigabytes of freely downloadable data. In addition to a general introduction to the data and services provided by PASDA, this presentation will emphasize the online data access methods developed at the clearinghouse. These methods include FTP download, online mapping and data viewing, online data manipulation, such as clipping and reprojecting, and database-driven applications.

Migrating Parcels to a Geodatabase

Presenters: Phillip Bellizia, Highland Geographic and Sara Frankenfeld, Warren County NY

To take advantage of the new topological functionality available in ESRI's ArcGIS 8.3, many municipalities are considering migrating their existing tax parcel data to a Geodatabase. This presentation discusses some of the considerations given to— and lessons taken from— designing and implementing a parcel Geodatabase. It discusses how data that exist on mylar, in CAD drawings, or in shapefiles and coverages are modeled in a Geodatabase schema to meet the business and legal requirements of an organization.

The presentation includes real-world examples of a parcel geodatabase design and implementation.

Status of the NYS Accident Location Information System (ALIS) Project --

Cheryl Benjamin, NYS CSCIC

DMV, DOT and OCSCIC have partnered to replace their current obsolete accident location coding system with a more efficient and accurate system that will use modern GIS technology to locate and analyze accidents. A primary component of this three-year project is the development of a new statewide GIS roads file which includes all NYS

roads at a scale of at least 1:24,000, attributed with up-to-date street names and address ranges. This presentation will discuss the current status of the development of the new GIS Roads file, what attributes the new file will include, and future access to the data product. The State's contractor is also building applications to support database updates, identification and notification of database errors, more efficient locating of accidents, and accident location analysis. One of these applications, the Map Maintenance Notification and Tracking Module, will assist in keeping the new roads file current. This presentation will briefly discuss how this module will be used for the identification of additions, errors, and changes to be incorporated into the new data set.

Developing a Water Quality Model for FERC Re-Licensing Stakeholder Presentations

Samantha Bennett

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Website: www.walden-assoc.com

Presenting water quality data for stakeholder meetings is often challenging. Section 603 of the Energy Act requires dam owners to hold stakeholder meetings on lake water quality issues during the FERC re-licensing process. Traditionally, maps, tables, and graphs have been distributed at stakeholder meetings to present water quality data, which is often perceived as misleading and confusing. This paper presents the methodology for presenting complex water quality issues to a non-technical audience. The process used for data collection, data projection, modeling parameter selection, and modeling techniques to generate a water quality model in Lake Murray, South Carolina is reviewed.

Fulton-Montgomery Community College's The Spatial Information Technology Center

John Borst, Fulton-Montgomery Community College

The Spatial Information Technology Center (SITC) housed at Fulton-Montgomery Community College (FMCC) has been actively involved at bringing geographic information technologies to the K-12 community. This presentation will focus primarily on SITC's annual Youth Summer Camp activities in addition to their teacher-training program, Mapping Our World, whose purpose is to train K-12 teachers in the use and application of geographic information technology.

Building an Enterprise GIS for the Town of Oyster Bay

Steve Boryk,

Town of Oyster Bay

Town Hall

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Oyster Bay NY 11771

(516) 624 - 6475

email: sboryk@tobays.net

Richard P. Slutzah, P.E.,

Sr. Vice President

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Mineola NY 11501

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The Town of Oyster Bay recently implemented an enterprise wide GIS in order to support the spatial information needs of a number of its departments. The multi-year project involved a number of different technologies managed through the Town's Data Processing organization. The presentation will highlight some of the key aspects that must be considered in building an enterprise GIS including:

The Town of Oyster Bay encompasses a 110 square mile area and is home to over 300,000 people. The system was implemented by the Data Processing Division of the Office of the Town Comptroller. Consulting services were provided by Bowne Management Systems, Inc., a member of the Bowne AE&T Group.

Using GIS in a Phased Apprach to GASB 34 Compliance

Clark Burdick ph: 455-2000 x442

A/V needs: PC projector, computer with CD drive (or can bring one)

The General Accounting Standards Board Initiative 34, or GASB 34 for short, requires the spending of time and money - to inventory, assess, and assign value to public infrastructure. This valuation can be complied with through either a 'straight line depreciation' or 'modified method' approach. While the modified method provides the best long-term solution to numerous infrastructure performance and valuation concerns, it can be a lot to take on at once. Many infrastructure managers don't have time in their busy schedules, or the surplus budget, to fully implement the "modified method" at present, yet the straight-line method tends to undervalue infrastructure since condition and maintenance are not accounted for. This creates a dilemma - How to efficiently meet GASB 34 requirements while maximizing the current and future valuation of the public infrastructure. The asset values can ultimately affect a community's bond rating and interest rates.

An economical and fast track approach to GASB 34 compliance exists which uses GIS during standard depreciation estimates. This lightweight GIS approach to GASB 34, sort of a GASB-Lite, leverages the information for successively greater detailed asset inventory over time. Because of the spatial aspect of the GIS used during the inventory a number

of advantages and opportunities present themselves. Data and maps developed during the 'straight-line' depreciation inventory create a foundation that can be used to assist in budgetary planning, and can be built upon for the future. Improved asset values, and bond ratings, can be achieved by lowering the "capitalization threshold" for the infrastructure. A condition value can be used to account for improvements and maintenance, and a gradual move to a maintenance operations plan that fulfills the "modified method" of GASB 34 is possible. A tiered approach to GASB 34, built upon a GIS data framework, allows managers to choose the detail to report now, while keeping an eye on the road ahead for when they're ready to move to more advance infrastructure management and assessment methods.

Customizing ArcGIS with ArcObjects – Keep from Falling Off the Cliff of GIS Application Development

Laurie Cooper (Serrett)

Mapping Technologist

GIS Section

New York State Department of Transportation

As we go beyond the realm of ArcView 3.x and Avenue application development, it seems as though some GIS'ers are gradually falling off the cliff of application development, though not by choice. ArcGIS has posed fears about building custom applications with its introduction of ArcObjects. This in turn is leaving a number of GIS developers hanging from the cliff, still waiting for the Avenue/ArcObjects conversion tool to sweep by and save them. This presentation will provide information to GIS'ers that would like to start building custom applications within the ArcGIS environment. It will begin with building a simple button for use on an ArcMap toolbar, and end with creating a custom toolbar (.dll) for deployment. The presentation will also provide some information on choosing the most appropriate application development environment (i.e. VBA/ArcObjects vs. Visual Basic/ArcObjects), how to get started with simple code, using the VB samples provided with the ArcGIS software package, and to help take some of the fear out of ArcGIS application development.

CUGIR Web Mapping Interoperability -- Pipe Dream or the Future of GIS Data Access and Sharing?

Jonathan Corson-Rikert

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Mann Library

Cornell University

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The Cornell University Geospatial Information Repository (CUGIR) has been providing geospatial data without use restrictions since 1998, and has recently added data from new sources as well as an online mapping capability. With support from the Federal Geospatial Data Committee (FGDC) we have implemented web mapping using the OpenGIS Consortium (OGC) Web Map Service Implementation Specification so that the CUGIR map viewer can display data not only from our repository but from other OGC-compliant map servers in the U.S. and Canada. Using a standard browser, users may display maps of CUGIR and/or selected external data themes, or may add data layers from any

public or private site of their choosing by specifying the necessary Web Map Service (WMS) HTTP parameters. Map viewers hosted by other repositories can also call up CUGIR data layers for display. Following a brief demonstration of the technology, we will discuss the policy implications of web mapping interoperability for local and state governments, private companies and organizations as well as repositories such as CUGIR. Have the OpenGIS standards been adopted widely enough to be viable? Are graphic controls sufficiently flexible for meaningful applications, or will maps be limited to quick data previews? What are positives and negatives in comparison to proprietary web mapping tools? Can web mapping interoperability address long-standing problems such as GIS integration across political boundaries? What are the implications for GIS data updating and preservation? Audience discussion will be encouraged.

Tax Parcel Geodatabase Model for New York State

John Ferketic, Director of Geographic Information Technology at James W. Sewall Co.

Mathew Andrews, Weiler Geodatabase Development Supervisor

John Trimber, PLS; General Manager of the Weiler Division

Weiler Mapping, in conjunction with ESRI, has adapted the ESRI geodatabase tax parcel model to meet New York requirements. This development included the associated maintenance procedures and also outputting tools for hard copy map production. This model, using tax map data from the City of Mount Vernon, has been submitted with hard copy maps to the NYS Office of Real Property Services (ORPS) for approval as being in full compliance with Part 189 of the Rules and Regulations covering tax mapping in New York.

Weiler has provided digital tax mapping services to 31 counties in New York and 12 municipalities in Westchester County. Weiler and its parent company, James W. Sewall Company, currently provide contracted tax map maintenance for over 500,000 tax parcels in New York and New England. Weiler developed the first digital tax map in New York to be certified by ORPS as being in full compliance for Rockland County in 1992. Weiler also developed the "seamless municipal tax map" format for digital tax maps using CAD software, which was approved by ORPS for Chemung and Tioga counties in 1996. That format is currently used by 22 New York counties.

The presentation will cover:

1. Database design – what makes New York different?

2. Production issues –

a. Initial conversion from hard copy

b. Conversion from other digital formats

c. Annotation

3. Output considerations

4. Maintenance overview

Completing the Circle

Accessing Documents From Your GIS

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www.generalcode.com

Your GIS system provides access to a great deal of data through a geographic interface. However, documentation in support of this data (deeds, surveys, building permit files, tax assessment records, easement records, code enforcement records, utility maintenance records, sign maintenance records, etc.) is still mainly stored and maintained in paper format. Current technology can provide you with instant access to these critical land management, infrastructure management, and other documents right from the relevant GIS map layers.

Our presentation will discuss the benefits of integrating an electronic document management system with your GIS system, optimizing the usability and availability of land-based records. It will include an understanding of what electronic records management is, how it works, and what it can mean for the management of land records or infrastructure records. We will discuss efficiencies that can be created through instant access to documents that now must be retrieved from paper storage, including concurrent access by multiple people and across multiple departments and the streamlining of permitting and other processes. We will also discuss the improved document access control (security) that can be implemented on electronic records stores, automated management of records retention requirements, and the potential for provision of public access to electronic records via the Internet where an Internet-based GIS system is in place.

As part of the presentation, we will also include milestones in the historical progression of records management from paper through current technology and highlight current New York State guidelines for electronic records management.

The presentation will showcase an integration between ESRI's ArcView and a LaserFiche document management system for purposes of demonstration and providing examples.

Using GIS to Enhance Border Integrity

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Created in 1994 as a component of the National Institute of Justice's (NIJ's) Office of Science and Technology, the National Law Enforcement and Corrections Technology Center (NLECTC) system serves as the "honest broker" offering technical support, research findings, and technology development to help State and local law enforcement and corrections personnel perform their duties more safely and efficiently.

The NLECTC system consists of facilities across the country that are collocated with an organization or agency that specializes in one or more specific areas of research and development. NLECTC-Northeast is co-located at the Air Force Research Laboratory Information Directorate (AFRL/IF) in Rome, New York. This NE-Center focuses on concealed weapons detection technologies, through-the-wall sensors, audio and image processing, timeline analysis, computer forensics, secure communications, speaker identification, and communications interoperability. NLECTC-Northeast also operates the Law Enforcement Analysis Facility (LEAF) and the National Institute of Justice's National Law Enforcement CyberScience Laboratory-Northeast.

After September 11 the Law Enforcement Coordinator in the US Attorney's Office for the Northern District of NY requested the NLECTC-Northeast to provide technical assistance to the Central St Lawrence Valley Integrated Border Enforcement Team (IBET) in the Cornwall/ Massena region. With this assistance, and the continued efforts of more than 20 international law enforcement agency partners, the Central St. Lawrence Valley IBET has taken on the role of the "primary IBET test-bed" for technology that can be deployed to enhance border integrity. The technology and the lessons-learned are being transitioned to the other 13 IBET's along the US-Canadian border.

Toward this end, IBET technical working groups, including a GIS Work Group, were established to accomplish these three tasks:

The IBET GIS Work Group has been active in defining requirements for geospatial data, remote sensing, and GIS-related technologies that can be applied to the IBET interagency and cross-border test-bed for law enforcement.

This presentation will provide an introduction to the NLECTC system, an overview of the IBET GIS Work Group activities, and the NLECTC-NE's role in support of the IBET GIS Work Group.

"LAKE ONTARIO - ST. LAWRENCE RIVER FRAMEWORK DATA PROJECT":

STORING, MAINTAINING, DISCOVERING, AND SHARING GEOSPATIAL INFORMATION OVER A COMMON GEOGRAPHY

Roger Gauthier

U.S. Army Corps of Engineers, Detroit District

Ian Gillespie

Environment Canada, IT Division

Keywords: framework, spatial data infrastructure, data discovery, web mapping, interoperability

The Federal Geographic Data Committee's (FGDC) 2002 Cooperative Agreements Program (CAP) Category 4 grant, jointly funded and administered by GeoConnections (Canada), was awarded for the "Lake Ontario – St. Lawrence River Framework Data Project." In this project, a multi-sector partnership associated with an International Joint Commission (IJC) study is developing a framework for geospatial data essential for research, management, and business operations in the Great Lakes region. As a starting point, the project team is integrating, affording discovery of, and is providing for the long-term storage, maintenance, and flexible accessibility of a number of "framework data" layers. These include shoreline, political units, transportation features, watersheds, hydrography, conservation management areas, orthoimagery, and elevation (hypsographic and topometric) data. The project is designed to provide a scalable system with respect to new participants, data types, geographies, and data uses, and to augment the growing knowledge base by documenting all procedures, policies, and lessons learned, and making these widely available.

Utilizing GIS to assist with Emergency Preparedness and Response --

Robert Gehrer, NYS CSCIC

In an effort to assist public safety personnel and public officials prepare for and respond to emergencies, the New York State Office of Cyber Security and Critical Infrastructure Coordination (OCSCIC) has spent the past 18 months working with numerous State agencies to build a repository of critical infrastructure and asset data. OCSCIC has developed a web-based GIS application to allow these same individuals quickly search for, locate and visualize information about the critical assets and infrastructure components. This presentation will discuss project goals, the web-based GIS application and lessons learned.

ArcIMS ArcMap Image Server – Lessons Learned

Mark Haberle

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Applied GIS, Inc. has recently completed a project deploying the ArcMap Image Server extension to the ArcIMS spatial server tool. The ArcMap Image Server is a huge leap forward in providing robust cartographic and data support for a more robust end-user experience. A wider array of supported data, elevated cartographic capabilities, and a new range of output formats makes the ArcMap Server extension an attractive solution. This functionality, however, comes with a price.

ArcMap server has its own unique suite of limitations ranging from the inability to change renderers on the fly, to a slower execution speed, to incompatibility issues with the connector objects. These differences reverberate through existing code libraries and have a compounding effect on project development. Speakers will discuss the benefits and

hurdles discovered during development.

Web Services – An Emerging Paradigm for Distributing Spatial Capabilities

Mark Haberle

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Web services are software components that can be accessed over the World Wide Web. The component can be integrated into custom solutions to produce robust multi-dimensional applications. Web services insulate the hosting, maintenance, and distribution requirements from the developer and can be accessed on a subscription basis or as free-based components. The impact on the GIS world is likely to be immense as they can effectively make complex high-maintenance GIS functionality and data accessible at a reasonable cost of implementation.

New York State DOT Rock Slope Inventory

Converting from a Linear Referencing System to GPS Based Locations

Douglas Hadjin, Engineering Geologist 2, and Thomas Festa, Engineering Geologist

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description-abstract

The NYSDOT rock slope inventory was started in 1988 and contains over 2,000 rock slope evaluations in addition to over 500 rockfall incident reports. The database includes inventories of rock bolts, rock slope fences and slope mesh applications. All these inventories are maintained in databases that were incorporated into ArcView GIS in 1992. All the GIS locations of the rock slopes were based upon a linear referencing system developed based upon the highway reference markers. Starting in 2001, rockfalls and rockslopes have been located in the field with a Trimble TSC1 or Garmin E-Trex Legend GPS unit. The methods and tools used for data collection and incorporation into GIS, including third party software and extensions, will be discussed.

Innovative GIS at the New York City GIS Utility

Jim Hall

Executive Consultant

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The New York City GIS Utility was founded by Assistant Commissioner Alan Leidner in early 2000. Over the past 3 1/2 years numerous cutting-edge technological solutions have been developed and deployed for over 20 City agencies. This presentation will provide an overview of some of the more demanding and compelling solutions developed, especially over the past year. The following initiatives will be described:

- Geographically enabling the City's 311 customer information system

- Optimizing point-to-point routing

- Extending the availability and usability of legacy systems

- Deploying a GIS internet portal environment

- Inventorying available data assets

There is more to GIS than just maps.

Graham Hayes – GIS Consultant – Malcolm Pirnie / Red Oak Consulting

Fran Bebak – GIS Analyst – Erie County Water Authority

The Erie County Water Authority (ECWA) initially setout to develop a GIS to automate and manage their 1"=400' Mylar plates. However, the use of GIS within the Authority has expanded from automated mapping to support dispatch, field crews with laptops for leak detection, construction, and UFPO inspection. All mains, hydrants, valves, reducers, tanks, pumps and tees were digitized and tied to attribute tables housed on an NT server internal to an AS400. In addition, 14,000 8.5 x 11" detail sheets have been scanned and hotlinked to valve locations allowing desktop and laptop users to click on any valve and view the distance ties between valves and building corners or utility poles on the detail sheets.

The ECWA Meter Shop uses GIS to generate optimal routes for crews installing, repairing and reading large service meters. The GIS water network has been integrated with a hydraulic model and is used for planning growth and system expansion. In addition, the GIS basemap has been integrated into an Automatic Vehicle Locator with GPS units

installed in most of the Authority vehicles. Vehicle locations and status can be viewed within the GIS.

The Authority has invested approximately $3.5 million dollars over the past 11 years to design, build and operate the system. However, a conservative estimate of savings of $830,000 / year (or 16.5 person-years / year) has been realized. These measurable increases in productivity have allowed the Authority to redirect staff from maintaining basemap data to perform more productive tasks like leak detection, restoration, UPFO inspections, etc. The bottom line is that the Authority has been able to expand their service area (Town of Clarence, Village of Depew, Village of Lancaster, and City of Tonawanda) without increasing staff counts.

Although the user interface is map centric, the use of GIS at the ECWA has expanded to more than just maps.

Analyzing Enterprise Bridge & Highway Data with GIS

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GIS products can utilize an organization's enterprise data structure to provide the additional analytical benefits of spatial analysis. Modern GIS software offers the opportunity to create user interfaces with object-oriented programming tools. This presentation will describe the GIS tools developed to view two NY State Thruway Authority databases - the Infrastructure Inventory & Inspection System (IIIS) and Maintenance Management System (MMS). These GIS applications use ArcGIS interface development tools and dynamic segmentation capabilities to analyze corporate data sets, using the Thruway's bi-directional route system.

TIDAL WETLAND ANALYSIS PROJECT-- LONG ISLAND, NEW YORK

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Tidal wetlands in some portions of Long Island have been experiencing significant wetland loss. NYS Department of Environmental Conservation (DEC) studies of imagery for Jamaica Bay show undeniable, dramatic losses. DEC staff

postulate that sea-level rise is the root cause of these losses and hypothesize that all tidal wetlands around Long Island are experiencing this effect. The New York State Department of State (DOS) is attempting to replicate their findings by conducting an in-depth analysis of several sites dispersed throughout the wetland islands of the south shore estuary of Long Island.

Seven wetland islands/sites were chosen based on their location in relation to navigation channels and island size. Sites away from navigation channels were chosen to differentiate loss of wetland margin resulting from boat wake from loss due to sea level rise. Larger sites were chosen to increase ability to track wetland geophysical boundaries temporally. In addition to vector data from 1880s and 1930s, vector data was derived from digital orthophotography for years 1974, 1994, and 2001.

Data for years 1974, 1994 and 2001 were created by extracting vector objects from raster imagery. DOS developed this process utilizing several brands of software. Land cover type was categorized as wetland or open water by differentiating between pixels with contrasting spectral reflectance. Borders between contrasting pixels became the basis for line work, creating measurable regions.

Newly created object files are analyzed to measure changes in various wetland attributes such as, overall wetland area change, shoreline change, internal ponding and changes in stream and ditch characteristics. This analysis is in Phase I; results are being synthesized revised and improved.

Locating Organic Wastes for Composting or Anaerobic Digestion in New York State-- A GIS-based Spatial Decision Support System

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Biomass along with other major renewable energy resources (solar and wind) is playing an important role in meeting the ever increasing energy demand as a supplement to rapidly depleting fossil fuels. Meanwhile, there is a vast amount of organic wastes generated from different sources such as food processing facilities, institutions, and businesses in New York. Added to this is a large stream of animal wastes generated on farms throughout the state. These wastes are biomass that not only cause serious environmental problems to air and water, but also have high economic costs when diverted to landfill. However, at least two approaches will help to mitigate these serious problems, i.e. composting and anaerobic digestion or a combination of both. To utilize New York's organic waste resources in a sustainable manner and reap all the potential statewide benefits, it is first necessary to determine where the wastes are, their composition and how much is available for energy conversion or composting. The objectives of this study include: (1) identifying the types and whereabouts of organic wastes in NYS; (2) assessing the quantity of organic wastes that can be utilized; (3) mapping the spatial distribution of organics wastes with a capability of using different query criteria; (4) providing additional information related to better utilize these organic wastes, such as road systems, existing waste water treatment plants, composting facilities, etc; and (5) Creating a user friendly graphic interface integrating all the information and capabilities above in a GIS environment.

New York City Housing and Neighborhood Information System (NYCHANIS)

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New York University's Furman Center for Real Estate and Urban Policy and the New York City Department of Housing Preservation and Development (HPD) contracted Bowne to design, develop and implement the New York City Housing and Neighborhood Information System (NYCHANIS), an online information system based upon the data presented in the Center's State of New York City's Housing and Neighborhoods annual reports.

NYCHANIS is be an online, searchable database that offers a wide range of data services, from borough-level overviews of basic housing and neighborhood indicators to in depth statistical analyses of these indicators at the census tract level. NYCHANIS provides online mapping functionality that will allow users to create thematic maps via the web browser. It is designed so New Yorkers can access local housing, demographic, and urban planning information to help them make informed decisions.

In addition, NYCHANIS acts as an online Housing and Neighborhood Information Exchange, which will consist of two main components. The first component is a series of discussion forums where users can post questions or comments and receive answers and feedback from other users, housing experts, and HPD. The second component is a series of periodically scheduled "virtual town halls" which will allow users to communicate in "real time" concerning issues of housing and community development.

Mobile Data Collection and Mapping Systems for Environmental Compliance

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Air Force Reserve Command is using Personal Digital Assistants (PDAs) in mapping field applications to collect hazardous material, hazardous waste, storm water, and asbestos data for use in managing environmental compliance programs. The collected data is integrated and managed within the AFRC web-based Environmental Data Warehouse (EDW) and Geobase Environmental Module.

The Air Force Reserve Command (AFRC) has successfully implemented the use of Geographic Information Systems (GIS) in the field by developing mobile GIS applications. Customized Environmental Systems Research Institute (ESRI) ArcPad field applications were designed to collect spatial locations and associated information on hazardous material and hazardous waste collection and storage areas, spill and emergency response equipment, stormwater outfalls, regulated industrial activity points, and asbestos sampling points. The mobile ArcPad applications offer solutions to the geographic challenges of field data collection by automating cumbersome hardcopy data gathering

techniques. Custom graphical user interface (GUI) toolbars and menus were developed to navigate through individual buildings on a base and enter, edit, and standardize collected data. With the use of global positioning system (GPS) receivers or floor plans, users can add, edit, or navigate to existing features in the applications. The fieldwork performed using the versatile PDA systems show that mobile applications improve data collection efficiency and quality, save significant post-processing time in the office, and provide a consistent standard for data entry in the field. The data is made accessible to all designated users through a web-based data management system that is integrated with the AFRC's Environmental Data Warehouse (EDW) and Geobase Environmental Arc Internet Mapping Server (IMS) system.

Public Safety using G.I.S. / G.P.S. Technology in Homeland Security / Disaster Preparedness in Fulton County, New York

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A countywide predetermined emergency evacuation helicopter landing zone program has been established for all emergency agencies with location coordinates, landing zone conditions and immediate hazards using 2001 ortho-imagery.

All emergency officials have G.I.S. mapping of all Fire/Medical departments in county with each departments list of resources. Includes county map with each fire departments location and by querying that department a list of that departments resources is made available on screen.

A computerized map is available with all the natural resources in the county are plotted along with all the bridges and dams. A layer of all town government offices locations has also been done.

The potential flood zones of two major dams in the county which supply the counties largest cities water supply is plotted in the event of a emergency evacuation is necessary.

Countywide resource locations are mapped such as, heavy equipment, building materials; areas of refuge with routes to their locations are plotted.

Geographical fault line locations have been plotted countywide, identifying possible bridge and road loses in the event of a natural disaster.

Geocoding with a combination of Fulton County's real properties database, the telephone companies data and the data available from the utility company a countywide geocoded database of all residents has been established. This information gives an unlimited tool in the event an evacuation is required. For instance in a haz-mat situation where there is a spill and a evacuation is required, a concentric buffer zones, indicating hot, warm and cold zones, can be immediately run and the names and addresses with telephone numbers can be available.

In the event that there is a forest fire or a lost person in the county, layers of topographic maps and DEM data are

available for immediate print out and tracking for crews.

Using major builds floor plans done in AutoCAD, hotlinks have been done in the event a floor plan is necessary of the building for fire fighting and or evacuation purposes are required. This information is not only used in Fire/E.M.S. but for law enforcement in the event of a hostage situation or worse.

The three largest villages in the county have all their village fire hydrants plotted on a layer using G.P.S. coordinates.

As a never ending goal of improving response times all 2001 and 2002 structure fire calls, E.M.S. calls and miscellaneous other emergency calls in Mayfield's Fire District were plotted for analysis.

It was necessary to do this program in both ArcView 3.3 and in MapInfo Pro 7.0 due to the fact that different State and Federal agencies use either one or the other.

Map New York

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The Lewis Mumford Center's Map NY Project is a web-based mapping information system providing current data on key social and economic indicators. Drawn from a number of sources, including the U.S. Census, and state and federal agency reports, data are provided for counties, cities/towns and neighborhoods (census tracts).

The purpose of this presentation is to familiarize community and non-profit organizations and government officials serving the planning and human services needs of New York State to this mapping system, which is available free of charge to anyone with web access. Participants will learn how to navigate the system, understand the depth of the information available to them, and view examples of how government and community organization are already using Map NY. This can achieved with our power point presentation and or an internet connection.

Map NY can be used to identify, for example, the most attractive and successful aspects of a city's development (useful in marketing the city to newcomers), as well as problem areas requiring public policy intervention. Our system differs from most in that it extends beyond a single locality or metropolitan region. This project is currently being used by the New York State Office for Aging.

About the Lewis Mumford Center for Comparative Urban and Regional Research -Recognized as one of the great urbanisms of the 20th century, Lewis Mumford endorsed the creation of the Lewis Mumford Center for Comparative Urban and Regional Research in 1988. Under the leadership of Director John Logan, the Center currently focuses on four key initiatives: 1) Global Neighborhoods, 2) the Urban Historical Initiative, 3) the China Urban Research Network; and 4) the Hudson-Mohawk Regional Workshop. Visit the Mumford Center at http://www.albany.edu/mumford

ESRI Technology Update

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Build-Out Modeling Through Land Transformation.

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The Build Out Modeling Tool, BMT, integrates GIS datasets (raster & vector), with the Stuttgart Neural Network Simulator, SNNS, and remote sensing techniques to generate spatial patterns of development. It can also be used to evaluate the relative impact of user specified inputs, or prediction variables, on changes in land use. The BMT is controlled by a set of spatial rules and SNNS pattern recognition methods to determine the relationships between prediction variables, such as transportation, urban infrastructure and proximity to reservoirs, that have historically contributed toward land use change in the past. The model scenario results were then used to conduct urban growth analysis within select New York City East of Hudson Watersheds.

Interpreting Geospatially-Oriented Data in a Web-based Interactive 3D Environment: A Watershed Example.

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Successfully conveying information to a diverse constituency is the foundation for making effective and well informed decisions. However, due to complex geo-political realities, most decisions are not usually entrusted to a single organization. Therefore, effective decision-making is often the result of building consensus among many stakeholders based on a shared understanding of available information, much of which is geospatially-oriented. To address this reality, a novel 3D Web-based technology for interpreting geospatially-oriented information will be demonstrated. This technology complements traditional 2D GIS approaches and offers an alternative way to visualize and interact with geospatial information. The approach is more intuitive to many individuals compared to typical 2D maps and GIS interfaces. Furthermore, unlike most existing 3D applications, this technology is optimized for delivering large, seamless geographic areas via the Internet. A large number of users can be served simultaneously providing the ability to interactively "fly" anywhere within the 3D landscape.

This technology has been implemented for a project focusing on the Owasco Lake Watershed in the Finger Lakes Region of New York State. The goal of the project is to demonstrate the value of integrating Web-based 3D technology with Geographic Information System (GIS) technology for enhancing information sharing and decision support for watershed management. These combined technologies provide a structure for consolidating watershed imagery, GIS, and associated tabular data that may be distributed across different organizations. This approach also extends existing Web-based mapping technology to provide a more realistic way to visualize and interact with geospatial watershed information. It is envisioned that the technology will prove especially useful during group meetings and presentations that involve the general public or other stakeholders that are not necessarily accustomed to interpreting complex geospatial mapping information.

Land Information Ontario

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Like many jurisdictions, land information holdings in Ontario are not widely documented, publicized or accessible; compiled in various formats and media; non-standardized; difficult to integrate, share and maintain; and, become quickly obsolete. Land Information Ontario (LIO), in conjunction with the Canadian Geo-Spatial Data Initiative (CGDI) Project, has created an infrastructure that will support the development of partnerships in the collection, management and distribution of Ontario's land information assets. The Ontario Land Information Infrastructure (OLII) has two major thrusts: ensuring the existence of certain important data sets, and ensuring access to, and widespread general use of, geospatial data. Self-sustaining, well managed, good quality, important data sets are created through a wide variety of cross-jurisdictional projects and policy initiatives. Access to geospatial data are encouraged through data catalogues, data sharing organizational structures and data sharing tools. This discussion reviews the objectives, the history and the reality of Land Information Ontario and its role among the users and mangers of geospatial data in Ontario. It focuses specifically on how organizations using Ontario geographic information can, and have already participated in LIO's programs and offerings.

Status and Future of the New York Statewide Digital Orthoimagery Program

Tim Ruhren, NYS CSCIC

As the third year of the NYSDOP enters its peak production period, the program is approaching two significant milestones. The orthoimagery from the third year completes the coverage of the areas of New York State originally identified for the program's first cycle. At the same time, planning is underway for a fourth year - the first year in which areas will be re-flown as part of the NYSDOP's second cycle. This presentation will cover the current status of the program and plans for obtaining and distributing data in the future. User experiences and lessons learned will be described to provide context for the discussion.

GIS and 3D Simulation: Creating Real-Time Evolving Databases

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New technology has facilitated the blending of GIS and 3D visualization technologies. This technology utilizes ESRI software and Business Partner applications to develop fully textured, virtual reality based simulation models that add long-term value to your project. For years GIS professionals have not embraced 3D Visualization due to its lack of long-term value. However, in this new era professionals can build upon and synchronize their 2D GIS data with the 3D environment creating 1 central database. In this session, we will examine various case studies where GIS and 3D simulation where used simultaneously to develop models. The case studies focus on Transportation Planning, Land Use Planning, and Urban Renewal.

Positional error in geocoding of residential addresses

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GIS applications often rely on automated geocoding methods to assign geographic coordinates to residential addresses. These methods commonly rely on center-line street files as a geographic reference. Such a process introduces positional error in the geocoded address. We evaluated the positional error caused during automated geocoding and how this error varies by population density. Geocoding software which contained street center-line reference files was compared with an alternative method which employed centroids of individual property parcels. Three thousand residential addresses were geocoded in the New York State Capital District using software which matches addresses to street center-line reference files. Positional error was determined using the distance between each geocoded address and its true location as determined with aerial imagery. We found that positional error increases as population density decreased. In rural areas, 95 percent of the addresses were geocoded within 2,872 m (meters) of their true location. Suburban areas exhibited less error with 95 percent of the geocoded addresses occurring within 421 m, while urban areas showed the least error with 95 percent of geocoded addresses being positioned within 152 m of their true location. As an alternative to using street center-line files for geocoding, we used residential property parcel points to locate the addresses. In the rural areas, 95 percent of the parcel points were within 195 m of the true location. In suburban areas, this distance was 39 m while in urban areas 95 percent of the parcel points were within 21 m. Overall, property parcels provided a more accurate reference file for geocoding than currently available center-line street files.

Building a Topologically Enabled GIS Database for Modeling in Natural Environment

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Abstract: A great amount of vector GIS data has been created to depict the factors in natural environment in support for problem solving and modeling of watersheds and drainage basins. However, most of these datasets are non-topological, and the logic connectivity of map layers is minimal. Previous approaches incorporated spatially distributed environmental data with existing linear prediction models (Coroza, et al. 1997; Brezonick, et al. 2002) or combined the linear models with a black box spatial data model (Brun and Band, 2000; Gumbo, et al. 2002). In order to pursue the spatial reasoning and simulation, this study attempts to generate a topologically coded and connected database model for a natural drainage basin.

The Buffalo River drainage basin in Western New York was used to establish and test the topological GIS data model. ArcHydro tools in ArcGIS were applied to build the data model. US Geological Survey 10 meter resolution DEMs were merged and reconditioned with the river network layer. Logical water runoff flow direction and accumulation were generated both in raster and vector formats. Catchment areas in the Buffalo River drainage basin were delineated according to river flow direction and modeled runoff accumulations. A unique feature ID system was established in the geodatabase in ArcGIS for each of the features in the drainage basin across the different mapping layers. The result shows that topologically organized spatial data model can enhance the reasoning and prediction in a natural drainage basin.

Spatial Interpolation of Sewer Network Load and Population Change in the Towns of Cheektowaga, Clarence, and

Lancaster, Western New York

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Abstract: While population declined in West New York by 1.9% over the last ten years, movement out of the City of Buffalo into suburban areas has increased due to shift of economic activities and urban sprawl. The current study attempts to spatially relate the population change and the sewer utility network load in the suburban towns of Cheektowaga, Lancaster, and Clarence in Western New York.

AutoCAD drawings and diameter width of sewer pipelines from Erie County Department of Environment and Planning were converted into ArcGIS, and the width of each of the sewer line segments was incorporated into the database. The diameters of sewer lines and population distribution data of 1990 and 2000 from the U.S. Census Bureau were thematically mapped. The pipeline network, then, was overlaid on to the 1990 and 2000 population distributions to visualize the impact of population change to sewer transportation network load.

The results indicated that the population migrated from west to east, or from near downtown to further away from downtown. While the trunk routes of the sewer network transports the load westbound to the treatment facilities in downtown or near suburban areas, the capacity of the transportation lines in southwest Cheektowaga, east Lancaster, and Clarence were insufficient in 1990. Sewer transportation capacity was improved in the Town of Clarence, however, the over loading situation still exists in the other two sites in 2000. GIS visualization indicated that the pipeline infrastructure was under the demand in the east suburban areas in Buffalo.

Otsego County Traffic Safety/Stop DWI program

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For the last three years, the and Bassett Hospital Research Office in the mapping of all traffic accidents in the county. Grant support for this project came from the NY State Traffic Safety Commission. Law enforcement accident reports from 1998 to present day are matched to hospital emergency room patient outcome data and then mapped to create a GIS point layer for further analysis by different departments. This presentation will explain how this project was formed, what data has been included, how the mapping was carried out and what we have learned. Included will be descriptions of the accuracy of the mapping methods (description vs GPS) and technical issues. Highlights of the wide variety of analysis of the over 10,000 records will include - general maps by accident types, their causes and characteristics; identification of hot spots and their possible causes; the locations and characteristics of DWI accidents; emergency service response in relation to accident and hospital locations using network analyst; study of ways to improve road signage and winter road maintenance; trends in number of accidents within areas of intense development;

best locations for speed checks and counters.

Genesee County's GIS Initiatives for Homeland Security & Emergency Response

Jeff Volpe, GIS Manager, Bergmann Associates and Genesee County GIS Coordinator

The Genesee County Emergency Management Office's responsibilities are centered around assessing, analyzing, managing and protecting Genesee County's population through emergency planning and coordination of emergency services operations in major emergencies and disasters. The office provides on-scene assistance to fire, emergency medical, law enforcement and public officials during emergency situations and in local planning efforts. Emergency planning activities also includes protection of many valuable assets and resources within the county. The Emergency Management Office plans for a wide variety of emergency situations. These include fixed site chemical and radiological emergencies, transportation incidents, location and protection of public water supply systems, sewer systems, communications, highway infrastructure and emergency response operations. Planning for protection of public assets and emergency operations has become more important since the events of 9-11 and GIS technology is a vital and critical component for asset protection and emergency response planning.

This presentation will focus on Genesee County's initiatives for using GIS technology for Homeland Security purposes. This presentation will also outline the steps taken to date to implement GIS within the Emergency Management Office, including how we successfully received an ESRI sponsored Critical Data Infrastructure grant and the data and applications developed as part of this. This presentation will also outline future plans for using GIS technology (ArcPad, mobile, Pictometry) for Homeland Security and emergency response purposes.

POSTERS

COMPILING AN ENVIRONMENTAL DATABASE FOR THE MID-HUDSON VALLEY, NEW YORK

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We compiled a comprehensive environmental inventory for the mid-Hudson valley, New York (Greene, Columbia, Ulster, Dutchess, Orange, and Putnam counties). Using a geographic information system (GIS) we plotted hazardous facilities [Toxic Release Inventory (TRI) and Superfund (CERCLA) sites], schools, pre-schools, day care centers, and nursing homes. Hazardous facility locations were field checked for accuracy and discrepancies. Photographs were taken of the sites and notes were recorded regarding the exact locations, including information such as cross streets or physical descriptions of adjacent land. Because the data represents a generalization of the real world and real world problems, the spatial data representing potentially hazardous sites were compulsorily field checked for accuracy. School, pre-school, day care center, and nursing home addresses were matched using ArcView software. If the locations of the TRI and Superfund sites provided by the U.S. Environmental Protection Agency turned out to be incorrect, we input correct latitudes and longitudes using the GIS. In order to examine correlations between environmentally undesirable land uses and community demographics, spatial data must be field checked for accuracy.

The environmental inventory also includes but is not limited to the 2000 U.S. census demographic data at the block group level, digital orthophotos, FEMA 100-year flood lines, hospitals, landfills, incinerators, and drinking water wells.

We anticipate that the environmental inventory will reveal whether or not children and the elderly are at an increased risk of exposure to potentially hazardous materials. With U.S. Census data we can also examine the characteristics of communities in which these sites occur using variables such as race, education, income, and poverty level. The information from this project may be used to help reach more informed land-use decisions.

Characterizing Structure and Change in New York City's Urban Forest

Daniel Arroyo, Luke D'Orazio, Jacqueline Lu

New York City Parks & Recreation, Central Forestry & Horticulture.

This series of maps utilizes data from New York City Parks & Recreation's street tree management database to analyze changes in the structure of the urban forest from 1995 to 2002. Street tree density and average tree size was calculated for each 2000 U.S. Census tract. We also analyzed the total available planting space along the streets of New York City, and calculated the stocking level (the extent to which available planting space is filled with existing trees) for each tract. Since our analysis is restricted to trees planted along the public right-of-way, tree density and available planting space was calculated using the total length of curbs in each census tract after unplantable spaces such intersections, expressways, bridges and tunnels were excluded. Available planting space was calculated using an estimate of the typical spacing between trees in different areas of New York City, verified in a pilot field survey that accounts for other infrastructural elements that would prevent street tree planting, such as fire hydrants, driveways and street lights. Overall, these maps illustrate changes in New York City's street tree population, and identifies areas with the most available planting space for new trees.

Topographic and Bathymetric Mapping and Imagery Acquisition along the Shores of Lake Ontario and the St. Lawrence River

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On December 12, 2000, the International Joint Commission created the International Lake Ontario-St. Lawrence River Study Board to evaluate the procedures and criteria used to regulate the outflows of Lake Ontario and the management of the levels of that lake and the St. Lawrence River to Trois-Rivieres, Quebec. This process will extend over five years and involve researchers, regulatory personnel, and representatives of a number of interest groups working as advisory teams or "Technical Working Groups".

An important feature of water level fluctuations along the Lake Ontario - St. Lawrence River system is the change in water depth and flows. The Board's Plan of Study identified that high resolution topographic and bathymetric mapping in the near shore are needed to provide the requisite information for modeling flooding, erosion and water level impacts. Detailed elevation data are also needed to assess the impacts of various water level scenarios on wetland health and sustainability with emphasis on the relationships between topography, water circulation, plant communities, and key habitats. Accurate elevation data are also required to assess water level impacts on private and public shore properties, municipal water intakes and outflows, recreational boating facilities, and public bathing beaches.

In acknowledgement of these needs, the Information Management Technical Working Group was created to coordinate the completion of topographic and bathymetric mapping and imagery acquisition along the shores of Lake Ontario and the St. Lawrence River; to address issues related to the use of Geographic Information Systems (GIS) and data/information management; and to work towards an information management strategy to facilitate the sharing, access and use of all data and information generated within the study.

To date, these efforts have resulted in an extensive data library for the shoreline region of the Lake Ontario-St. Lawrence River system. Access to that data, in particular data review capability, is being provided via online mapping tools connected to shared data portals at three locations in the United States and Canada. Members of the Study's Information Management Technical Working Group are prepared to present on progress to date as part of the 2003 New York State GIS Conference, either as speakers in a conference workshop (e.g. Internet GIS) or by setting up a poster session at the conference.

Spatial and Three Dimensional Analysis of Wind Turbine Site Selection

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Wind power is an underutilized alternative energy resource that has high potential to reduce energy costs. Just as one must know where to drill for oil, it is necessary to locate ideal wind farm locations. GIS spatial analysis can be used to make this process more efficient and 3D visualization can be used to make it more effective. The parameters used to determine locations include: land use, slope of terrain and aspect to prevailing winds. The visualization of the spatial analysis is accomplished by creating a movie of a flight path through the proposed wind farm, in three dimensions.

Bird Conservation Planning Using GAP Analysis Data

Submitted by:

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Audubon New York embarked on a second round of Important Bird Area identifications in Fall 2002. In general, a site is recognized as an IBA if it meets at least one of the three IBA criteria relating to threatened species, habitat-species assemblages, and congregations of birds. Sites can vary in size, but are usually discrete and distinguishable in character, habitat, or ornithological importance from surrounding areas. As in the first round of IBA identification, site nominations with supporting avian data have been solicited from a broad audience. In order to provide a holistic, landscape view of the IBA nomination process, we developed a spatial modeling paradigm that targets both habitat and distribution of species assemblages for which New York has a high conservation responsibility. Our model is based on bird distribution and land cover data from the New York GAP Analysis Program. We first developed spatial indices at the landscape scale to rank assemblage potential within large blocks of land unfragmented by major roads. Block quality was ranked according to amount and contiguity of habitat as well as predicted richness of assemblage species. We then assessed unique habitat patches within high-ranking blocks to identify potential IBAs. Quality of habitat patches was ranked according to fragmentation and distance to lands under conservation status. Our current work is focusing on collecting point-count data in order to measure the success of our modeling efforts. This project provides a unique perspective to bird conservation in that it begins with a synoptic view of the landscape, narrowing down potential statewide habitat to focal patches that exhibit integrity and diversity. In addition, since the GAP program is present in the majority of states, this work has the capability to be replicated for bird conservation efforts in other regions.

Delaware's Urban and Community Forests

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Delaware's urban forest cover was analyzed using new (c. 2000) Landsat and 2000 census data. The census data reveal that Delaware has 15.0% urban land (includes land typically considered suburban), 1.5% suburban places (communities outside of urban lands with population > 2,500), 1.1% rural places (communities outside of urban lands with population < 2,500), and 2.3% other developed land. Tree cover in Delaware averages 18.3%; impervious cover averages 16.8%. There are an estimated 7.4 million trees in Delaware that store about 1.3 million metric tons of carbon and remove 1,760 metric tons of air pollution annually. Urban and suburban land has increased from 10.8% in 1990 with most expansion occurring in agriculture (48.7%) and forest (31.7%) lands. This report is the first of a series of state reports to

be released (as data become available) to help improve the understanding and management of urban forests across the United States. Practical applications of these data to help improve urban forest management are suggested.

Incorporating GIS Into an Urban Environmental Science Education Program

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Garden Mosaics is an informal science education curriculum for youth that uses community gardens in New York as sites for learning. One of the curriculum modules in the Garden Mosaics program consists of a series of exercises that take youth through a logical progression, from elementary map reading and orienteering, to aerial photo interpretation, and then to the GIS component. The GIS component of the Garden Mosaics curriculum seeks to build the scientific, analytical, critical thinking and technological skills of youth. To successfully do this, we rely on a combination of resources to teach youth about GIS. We collaborate with a local non-profit, The Council on the Environment of the City of New York, which provides introductory GIS training to youth around the city. During computer-based exercises, we will utilize two interactive web sites related to the environment in New York City. The first site is that of the New York City Open Accessible Space Information System Cooperative (OASIS), <http://www.oasisnyc.org> while the second site is the Community Mapping Project (CMAP) of the New York Public Interest Research Group (NYPIRG), <http://www.cmap.org>. The GIS component of the Garden Mosaics project complements the social and natural science learning experiences that the youth are having in community gardens while also improving their analytical, technical and computer literacy skills. The GIS component also helps youth to identify linkages between gardens and the community while also encouraging them to think more critically and holistically about the issues confronting their communities and how to address them.

Using GIS to Support a Stream Buffer Ordinance for the Town of Ithaca NY

Geraldine Tierney, GIS Consultant, Ithaca, NY, and Susan Ritter, Assistant Town Planner, Ithaca, NY

The Town of Ithaca, NY is working to develop a Town streamside buffer ordinance to protect water quality. In support of that goal, we undertook topographic analysis to identify possible stream size and slope steepness classifications appropriate for differing buffer widths. Using ArcView's Spatial Analyst, we estimated the upslope watershed area drained by all Town streams, as well as stream channel steepness. We used this analysis to propose three classes of stream buffer widths for inclusion in a new Town ordinance.

Embedded Secure Document

The file *http://www.esf.edu/nysgisconf/2003/nysgis03_regfly2.pdf* is a secure document that has been embedded in this document. Double click the pushpin to view.

The New York State GIS Coordination Program is happy to announce the Fourth Annual GIS Partnership Award.

Partnerships are an important way to share in the development of GIS and geospatial data sets, and to enhance the usefulness of those that are already developed. One of the ways that the NY State GIS Coordinating Body is encouraging the formation of GIS partnerships in New York State is by publishing a short description of real GIS partnerships on a web page at the NY State GIS Clearinghouse web site. The Clearinghouse web page is at http://www.nysgis.state.ny.us , and the GIS Partnership Summary page is at http://www.nysgis.state.ny.us/datcoord/partners.htm

The GIS Partnership Summary page has been set up so those who are interested in learning more about a particular partnership or partnerships in general can read current summaries about others' experience. Contact information is included in the summary in case the reader is interested in participating in the partnership, or in learning more about it.

The goal of this contest is to improve the effectiveness of this page by generating more summaries and by increasing the awareness of its existence. An award for the best partnership will be presented at the Annual NYS GIS Conference. To become eligible, submit a summary in the correct format about your GIS Partnership that includes participants from New York before September 22, 2003. Partnership summaries may be submitted through our simple on-line form at: http://www.nysgis.state.ny.us/forms/partform.htm, or by e-mail to nysgis@cscic.state.ny.us. If your summary is accepted for inclusion on the summary page, it will automatically become eligible to win. Ongoing partnership that have not previously received an award are eligible to apply, as long as they submit an update to their partnership summary. Examples and links to the format are provided on the GIS Partnership Summary page given above. Entries will be judged by a select subcommittee of the NY State GIS Coordinating Body on their originality and innovation, and the scope of the partnership, such as the number or diversity of participants or the dollar savings of the partnership. Partners whose summaries are accepted for inclusion on the GIS Partnership Summary page will also be asked to keep their summary current on a periodic basis.

Contact Jeff Herter at jherter@dos.state.ny.us or (518) 474-6000 or Bruce Oswald at bruce.oswald@cscic.state.ny.us or 518-474-5212 for answers to any questions.