

Preliminary Program



GEOSPATIAL INFORMATION SYSTEMS FOR TRANSPORTATION SYMPOSIUM

To provide a forum for transportation officials from State, Province, Federal, and
Municipal Agencies to discuss GIS and transportation issues

March 28 - 30, 2011

Workshops – March 27, 2011

**Hershey Lodge
Hershey, Pennsylvania**

Sponsored by:

American Association of State Highway and Transportation Officials



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The twenty-fourth annual GIS-T Symposium - *GIS-T 2011 The Keystone of Transportation Information* – provides a forum for professionals interested in the design and use of GeoSpatial Information Systems for Transportation. It brings together individuals from education, the private sector, and all levels of government for a full day of workshops March 27, 2011, and three full days of conference activity, March 28-30, 2011.

WHO SHOULD ATTEND?

- ❖ Transportation professionals who need to know how to better utilize GIS and related systems.
- ❖ Executives and managers concerned with management and institutional issues.
- ❖ Information Technology and GIS professionals from both public and private organizations:
 - Transportation Engineers and Planners
 - City, County & Regional Planners
 - Educators
 - Elected Officials
 - Environmental Scientists & Regulatory Specialists
 - GIS and Information Systems Specialists
 - Consultants and Service Providers

SESSIONS

Keynote Speaker – Dr. Carl Reed is currently the Chief Technology Officer and an Executive Director of the Open Geospatial Consortium, Inc. (OGC). Dr. Reed is responsible for facilitating the OGC standards development process.

State Summary & Roll Call of States – Summary results from a survey sent to GIS representatives in each state will be presented and one representative from each country, state, province, or local agency are asked to briefly mention the status of their GIS implementations and challenges they may face.

Concurrent Sessions – The Symposium will feature six concurrent sessions, each consisting of four tracks of presentations. During the first concurrent session, the Symposium will include the Student Paper Contest winner. The contest was open to technical research papers written by students currently enrolled in a university or college.

GIS Gallery – Successful GIS projects will be showcased through map products and displays. Prizes will be awarded to the Best Representation in each of four categories – 1) Transportation Publication; 2) Information Usage; 3) Public Presentation; and 4) Effective Cartography. All attendees are encouraged to submit multiple GIS products reflecting their own agency's work to the symposium. For detailed category and submission information please check the www.GIS-T.org website.

Panel Discussion Session – The Symposium will feature a panel discussion on Tuesday morning titled *Using Smart Mobile Devices for Field Data Collection and Dissemination: Opportunities and Challenges*.

Student Paper Contest - This year GIS-T presents the sixth annual Student Paper Contest. The student winner, selected by the planning committee, will present their technical research paper focused on developing solutions for current GIS-T issues. The student will take home a \$500 award.

General Schedule

	Sunday March 27, 2011	Monday March 28, 2011	Tuesday March 29, 2011	Wednesday March 30, 2011		
7:00 AM	Registration Breakfast	Registration Breakfast	Registration Breakfast	(Sleep In!!!)	7:00 AM	
8:00 AM	Morning Workshops 1. GIS Technology: Return on Investment 2. Practical Census - Getting the data into your GIS 3. Modernization of the National Spatial Reference System 4. Local Roads, LRS and Safety Analysis	Opening Session Welcome To Pennsylvania Keynote Speaker Dr. Carl Reed	Panel Discussion Using Smart Mobile Devices for Field Data Collection and Dissemination: Opportunities and Challenges	Registration Breakfast	8:00 AM	
9:00 AM				Session 5 1. State Enterprise Applications 2. Freight 3. LRS Data Models 4. Imagery	9:00 AM	
10:00 AM		Break	Break	Break	10:00 AM	
11:00 AM		State Summary & Roll Call of States	Session 3 1. Asset Integration 2. Safety Mapping & Analysis 3. Integrating Data from the Field 4. Advances in Transit	Session 6 1. State Data Portals 2. Right of Way 3. LRS Implementations 4. Visualization and 3D	Technology Hall Open	11:00 AM
12:00 PM	Lunch - Workshop Attendees Only	Lunch	Lunch	Box Lunch Awards and Drawings Next Host State Presentation	12:00 PM	
1:00 PM	Afternoon Workshops 5. HPMS 2010+: A GIS Odyssey 6. GIS in the Clouds, the Future of Analysis? 7. The Status, Benefits, and Challenges of Commercially-Available Road Networks 8. Linear Referencing Methods and How LRMs Are Used by Business Functions	Session 1 1. Asset Data Inventory 2. Traffic Operations 3. Transportation for the Nation 4. Interesting Talks	Session 4 1. Planning Portals 2. GIS in the Cloud 3. State Enterprise Services 4. Non-Motorized Transit	Symposium Wrap-Up Come join us for a debriefing of this year's symposium and planning for the next year. Refreshments Provided!	1:00 PM	
2:00 PM		Break	Break		2:00 PM	
3:00 PM		Session 2 1. Integrating Enterprises 2. Traffic Incidents 3. Integrating Data 4. Transit Analysis	Emerging Issues Forum Building the Information Super Highway into the "Cloud"			3:00 PM
4:00 PM		Break	Free Time			4:00 PM
5:00 PM	Break	Free Time	Free Time		5:00 PM	
6:00 PM	Technology Hall Reception	GIS Gallery	Tuesday Night Social Hershey's Chocolate World		6:00 PM	
7:00 PM	Technology Hall Open	Technology Hall Reception			7:00 PM	
8:00 PM					8:00 PM	
8:30 PM					8:30 PM	

GIS-T Workshops

(SUNDAY)

There will be four tracks for workshops presented at the 2011 GIS-T. All workshops are half-day workshops. You may pick one from the morning and one from the afternoon. Full breakfast and lunch are provided to workshop attendees.

MORNING SESSIONS

Workshop 1. GIS Technology: Return on Investment

Instructor: Victoria Kouyoungjian, ESRI

"Sustainable Enterprise GIS initiatives are dependent on obtaining organizational buy-in and delivering measurable (ROI) results. This presentation introduces a methodology for quantifying the often elusive tangible benefits of an Enterprise GIS Initiative. Specifically, the workshop will cover how to: (a) develop a ROI-driven GIS Strategic Plan (b) establish a financial business case using a diverse set of ROI-based methods to justify geospatial projects (c) obtain buy-in from decision makers and stakeholders; (d) successfully deliver measurable business results from geospatial projects. This presentation is based on the methodology described in the book ESRI Press book "Business Benefits of GIS: An ROI Approach" (www.esri.com/roi). Attendees will also learn how to use the digital tools and templates, available online, in order to put the insights gained during this presentation into practice in their own organization. In addition, real use cases and studies will be provided to underscore the impact of a defensible ROI strategy in the transportation industry."

Workshop 2. Practical Census - Getting the data into your GIS

Instructors: Kim Karejko, and Matthew Gates, Delaware Valley Regional Planning Commission and Michael Ratcliffe, U.S. Census Bureau

This workshop will talk about the 2010 census and reapportionment data and how to convert that information into usable GIS data.

1. *What's New in Census Data* - Understanding the various types of Census Bureau geographic areas and their relationships is critical to successful use of Census Bureau statistical data products. The geographic areas used to tabulate and disseminate data for the 2010 Census also will be used to tabulate and disseminate American Community Survey data through the decade. In this presentation, we will discuss the various types of geographic areas defined for the 2010 Census, including census tracts and block groups, ZIP Code tabulations areas, and public use microdata areas (PUMAs), as well as other geographic areas such as traffic analysis zones (TAZs). This presentation also will provide an overview of planned geographic products to support dissemination of statistical data.
2. *Census Data in Transportation Planning* - This presentation will cover the major uses of Census data in a large Metropolitan Planning Organization. These uses include the development and validation of travel forecasting and land use models; the analysis of worker flows and commuting patterns; transit and highway planning and programming; and the development of services to support job access and reverse commute, welfare-to-work, and environmental justice programs.
3. *Using Census Data in GIS* - This portion of the workshop will focus on the process of creating a thematic map using raw Census data (spatial and tabular). The workshop will emphasize the manipulation of Census data through techniques such as such as downloading, formatting, storing, importing, and data symbolization.

Workshop 3. Modernization of the National Spatial Reference System

Instructor: Dave Doyle, National Geodetic Survey

This program will discuss a number of on-going activities at the National Geodetic Survey (NGS) designed to enhance the availability, quality, and integrity of the National Spatial Reference System (NSRS). These include: Continued analysis of the 2007 national readjustment of approximately 67,000 GPS stations in the North American Datum of 1983 (NAD 83), international densification and completion of a multi-year solution for the Continuously Operating Reference Station (CORS) network, release of a new geoid model (GEOID09), additions to the On-Line Processing User Service (OPUS) suite of programs and utilities, and efforts to develop and adopt new national horizontal and vertical reference systems consistent with the International Terrestrial Reference Frame (ITRF) to replace NAD 83 and NAVD 88 as outlined in the NGS 10-year plan.

Workshop 4. Local Roads, LRS and Safety Analysis

Instructors: Matt Lawson, Mercer County, New Jersey; Simon Lewis, Agile Assets; Will Stevens, Delaware Valley Regional Planning Commission

Half the crashes in the country occur on local roads. The 2005 Federal SAFETEA-LU Legislation mandated that states carry out crash analysis on both local and state-maintained roads. Some of the most cost-effective safety measures (such as rumble strips and improved signage) can be undertaken on local roads. The recent publication of the much awaited AASHTO Highway Safety Manual has further highlighted the need for crash analysis to proactively determine not only existing crash hotspots but also potential hotspots on both local and state maintained roads.

However, optimally undertaking crash analysis and investments on local as for state roads essentially requires that a single network definition and geometry is in place, with a coherent and complete LRS. This network and LRS definition needs to be compatible with state definitions and practice if holistic, state-level analysis is best to occur. Many local agencies have developed GIS activities. However, many are still struggling to fully have in place single network definitions and a LRS that meet the needs of safety analysis (as well as many other GIS-based applications). Field development is thus "in progress". This workshop provides a review of progress,

approaches, issues and potential solutions. It draws on work by local (and also state) agencies in Delaware, Maryland, New Jersey and Pennsylvania, as well as other locations.

AFTERNOON SESSIONS

Workshop 5. HPMS 2010+: A GIS Odyssey

Instructors: Joe Hausman and Ronald Vaughn, FHWA

The Federal Highway Administration's (FHWA) Office of Highway Policy Information has migrated to a new geospatial data model concerning the Highway Performance Monitoring System (HPMS) database which it manages. The HPMS program requires the States to report various types of roadway condition and performance data to FHWA on an annual basis, which is ultimately used for national-level analysis and reporting. Beginning with the 2009 data submittals (submitted in 2010), a few States submitted their data in the new GIS-based format, while most States opted to postpone their migration to the new format until 2011, when all States will be required to submit their data in this format. FHWA has developed a new training course for HPMS, which is used to instruct the State DOTs on the program's data collection and reporting requirements. These requirements are outlined in the new HPMS Field Manual, which was developed in 2010. This workshop will provide instruction on the GIS-related elements of this training course and provide some supplemental information about the program.

Topics to be Covered:

1. HPMS Background and Core Components
2. Data Model and Required Datasets
3. Sampling Framework
4. Data Submittal Process

Workshop 6. GIS in the Clouds, the Future of Analysis?

Instructor: Victoria Kouyoujian, ESRI

Cloud computing is rapidly emerging as a technology trend that almost every industry that provides or consumes software, applications, and infrastructure can leverage. Although presently at the peak of its hype, cloud computing comprises several basic tenets that characterize this emerging environment. This session will introduce the various service and deployment models provided with cloud computing; the business benefits and opportunities that potentially could be leveraged; and the risks and concerns that must be recognized by any individual or organization planning on becoming a cloud consumer or vendor. Included in the session will be:

- Introducing Cloud Computing
- Considerations for Building a GIS in the Cloud
- Using ArcGIS Server in the Amazon Web Services (AWS) Cloud Infrastructure
- Best Practices & Use Cases

Workshop 7. The Status, Benefits, and Challenges of Commercially-Available Road Networks

Instructors: Bill Schuman, Steve Korzekwa, and Connie Gurchiek

Federal mandates have many transportation agencies scrambling to compile contiguous and comprehensive road networks that include not only their state-maintained routes, but also local roads. Many transportation agencies do not have the resources to collect even basic information about all public roads. In fact, collecting and maintaining data for only the state or on-system routes is a challenge in today's political and financial environment. Because of this, many transportation agencies are considering commercially-available datasets to augment their state networks, or as their primary source of centerline base data.

The first portion of this workshop will be a report on the source of the road data being used by DOTs today. A survey will be completed prior to the workshop to provide current information about the data source usage. Statistics will be compiled on how many states are using data from the national providers – Tele Atlas and NAVTEQ – as well as providers that service a limited geographic area or those that have new products offerings on the market. A representative cross section of the different approaches to using the available data, and the pros and cons associated with each approach, will be presented.

The second portion of the workshop will provide a more in-depth look at the data, focusing on how to utilize the networks with the depth of legacy data collected by DOTs using different linear referencing methods (LRMs). Attendees will break into groups, with each group looking at data from a different provider. Each break-out group will be provided with questions to be answered based on analysis of the survey. Reports from the breakout sessions will focus on the benefits and challenges of the data from each provider.

Each attendee will be provided with the survey results at the beginning of the workshop. The analysis and recommendations will be compiled with results from the workshop and will be sent to workshop attendees following the conference.

Workshop 8. Linear Referencing Methods and How LRMs Are Used by Business Functions

Instructors: Eric Abrams, Ryan Wyllie, Iowa DOT and Thomas Martin, Minnesota DOT

Combining information from different referencing methods like reference post, literal description or coordinate route within a department of transportation has been an information processing concern. A Linear Reference System (LRS) aligns the linear reference points in all databases so information from crash statistics, pavement management, asset management and other business data can be

accurately mapped and data more easily analyzed. Through this integration, LRS improves data integration and access, improves accuracy, minimizes redundancy in databases and maintenance activities, creates a traversable network and includes all public roads.

Iowa DOT has received a Technology Implementation Group (TIG) grant to promote LRS to DOTs. This workshop will focus on how a LRS can improve DOT workflow, LRS implementation experiences and HPMS. In this workshop attendees will learn:

- What is NCHRP-20(27) model and how Iowa implemented
- Importance of linear Referencing Methods
- Minnesota DOTs RFI and risk assessment for LRS
- Dynamic segmentation and linear overlay
- How a LRS makes HPMS submittal easier?

Information on Iowa's TIG grant - <http://tig.transportation.org/Pages/LinearReferencingSystem.aspx>

TECHNOLOGY RECEPTION – TECHNOLOGY EXHIBITS OPEN

(SUNDAY 5:30 PM TO 7:30 PM)

(MONDAY 6:30 PM TO 8:30 PM)

The Technology Hall opens on Sunday evening at 5:30 pm with a reception for all Symposium attendees and guests. On Monday, Symposium attendees are welcome to attend another reception starting at 6:30 pm.

The Technology Hall will open at 12:00 noon and close at 8:30 pm on Monday.

On Tuesday, it will be open from 7:00 am to 5:30 pm.

On Wednesday, it will open at 7:30 am and end at noon.

OPENING SESSION / KEYNOTE SPEAKER

(MONDAY 8:00 AM TO 10:00 AM)

Carl Reed, PhD

Dr. Carl Reed is currently the Chief Technology Officer and an Executive Director of the Open Geospatial Consortium, Inc. (OGC). Dr. Reed is responsible for facilitating the OGC standards development process. To ensure harmonization of geospatial standards across information communities, Dr. Reed also participates in and collaborates with other standards organizations, including OASIS, NENA, W3C, ISO, and the IETF. As a result, Reed has contributed to numerous internet and web standards. Prior to the OGC, Reed was the vice president of infrastructure marketing at Intergraph. This was after a long tenure at GIS software company Genasys II, where he served as chief technology officer for Genasys II worldwide. From 1989 to 1996, Dr. Reed was president of the Genasys Americas operation. Dr. Reed received his PhD in Geography, specializing in systems architectures for GIS technology, from the State University of New York at Buffalo in 1980. In 1995 and in 2009, Reed was voted one of the 10 most influential people in the geospatial industry. For his contributions to the geospatial industry, in 2009 Reed was inducted into the URISA GIS Hall of Fame.

STATE SUMMARY AND ROLL CALL OF STATES

(MONDAY 10:30 AM to 12:00 noon)

GIS-T presents summary results from a survey sent to GIS representatives in each state. The Roll Call of States features one representative from each country, state, province, or local agency to briefly mention the status of their GIS implementations and the challenges that they face.

GIS GALLERY

(MONDAY 5:00 PM to 6:30 PM)

The GIS-T Symposium provides a showcase for attendees to display GIS-generated mapping and poster products. This is an opportunity to share techniques and applications with peers in the transportation GIS community. Come and see how states are using GIS to advance their work. A panel of judges evaluates each submission, and awards are given within each category [Transportation Publication, Information Usage, Public Presentation, and Effective Cartography] during the Wednesday Symposium lunch. Every state and transportation organization is strongly encouraged to submit examples of their work even if not in attendance. Send your maps and posters to Pennsylvania DOT at the address listed on the last page of this program. Please make sure they are received by March 22nd, 2011. If you bring your maps with you, please be sure to leave them at the registration desk when you check in. Attendees will be able to view maps for the duration of the Symposium.

PANEL DISCUSSION

Using Smart Mobile Devices for Field Data Collection and Dissemination: Opportunities and Challenges

(TUESDAY 8:00 AM to 10:00 AM)

Moderator: Chris Zajac, NJDOT and Bud Lou, Michael Baker Inc.

Smart Mobile Devices (SMD) are taking the mobile computing and communication by storm. Greater usability, portability, faster wireless/cellular coverage and dropping costs make those devices appealing for Location Based Services (LBS). Smart Mobile Devices are becoming ubiquitous in our work and daily lives.

The introduction of iOS and Android platforms (iPhone, iPad, and Android devices) and their quick adoption by the development community provides a viable alternative in location based data collection and data dissemination. It is common for a SMD user to send in location aware data (Tweets, location Check-Ins, and photos for example) to the cloud for community sharing and archiving purposes. Users are increasingly “spatially aware” and feel comfortable with LBS services.

The SDKs of those new platforms have free and easy-to-use mapping and LBS functions and services. Both iOS and Android allow you to access to the built-in GPS and cellular triangulation functions, and also provide mapping engines. Customized mapping applications can be developed to capture and receive data in the field.

This panel discussion addresses the following topics: How can we benefit from the Smart Mobile Devices in field data collection and dissemination? What are some key differences between iOS/Android and more traditional Windows CE/Windows implementations? What are the major challenges with our existing GIS-T ecosystem to embrace those new Smart Mobile Devices?

EMERGING ISSUES FORUM

Building the Information Super Highway into the “Cloud”

(TUESDAY 3:30 PM to 5:00 PM)

Are you a little foggy about how GIS and transportation information systems fit into the “cloud?” You may already be there and don’t even know it! This session will explore the many dimensions of cloud computing with IT industry leaders like Citrix and SAS, as well as geospatial technology providers. The “cloud” is all about information and services; how to find them, consume them, and provide them. Panel members will discuss how their technologies provide the infrastructure to allow GIS-T professionals to create and use cloud services. Come and learn what the “cloud” can do for you and your users.

TUESDAY NIGHT SOCIAL

Hershey’s Chocolate World

(5:30 PM to 9:30 PM)

Meet in the Chocolate Lobby before boarding the bus

Join us as we meet one another in one of Pennsylvania’s top attractions, Hershey’s Chocolate World. Learn how chocolate products are made, from harvest to packaging, on a narrated ride. Shop for hard to find Hershey products and dine on traditional central Pennsylvania foods.

SPOUSE TOURS

Amish Country

(MONDAY 9:30 AM to 3:30 PM)

Meet in the Chocolate Lobby before boarding the bus

Nestled behind the hustle and bustle of today's world sits a picturesque 15-acre oasis that has been a must-visit Lancaster County destination for families, children and groups since 1955!

The Amish Farm and House--the United States' first Amish attraction--opened in direct response to the growing demand for correct information about the Old Order Amish lifestyle. The Amish Farm and House provide a fun, respectful, and accurate glimpse into Amish life. The visit includes a 45 minute guided tour of the home and the opportunity for a self-guided tour of the farmstead.

<http://www.amishfarmandhouse.com/>

Lunch will be at the Good N Plenty Restaurant. The Good N Plenty features authentic Pennsylvania Dutch cooking in a remodeled two story Dutch farmhouse. <http://www.goodnplenty.com/>

Greater Hershey

(TUESDAY 9:30 AM to 2:30 PM)

Meet in the Chocolate Lobby before boarding the bus

Journey through America's sweetest town on the Hershey Trolley Works Tour. The inspirational legacy of Mr. Milton S. Hershey unfolds in a unique entertainment experience. Taste the chocolate that made him famous and sing along with our turn of the century conductors. See the chocolate factory, Mr. Hershey's mansion, Kiss streetlights, and much more! <http://www.hersheyrolleyworks.com/> The Antique Auto Club of America's museum features some of the finest historic vehicles and travel nostalgia found anywhere. From the largest collection of historic buses under one roof, to the restored 1941 Valentine diner, and featured motorcycle display, the museum has something for everyone. <http://www.aacamuseum.org/>

Lunch will be on your own.

State Capitol Tour

(WEDNESDAY 8:30 AM to 10:00 AM)

Meet in the Chocolate Lobby before boarding the bus


Theodore Roosevelt called the Pennsylvania State Capitol "the handsomest building" he ever saw. This 30 minute guided tour brings to life the architecture, art, and history of the state capitol. Box lunches will be provided at the hotel around noon.

<http://www.pacapitol.com/tours.html>

CONCURRENT SESSION 1


1:30 PM MONDAY, MARCH 28


1.1 Asset Data Inventory			
Moderator:			
	1.1.1	Why Allegheny County Is Doing Enterprise-wide Asset Management?	Craig Schorling Transmap Corporation Columbus, OH Philip LaMay Allegheny County, PA Pittsburgh, PA
	1.1.2	Bridge Inventory Using Geographic Information Systems (GIS)	Mehmet Secilmis Dewberry Parsippany, NJ
	1.1.3	Statewide Noise Barrier Inventory Program	Joe Vankerkhove, P.E. Bergmann Associates Rochester, NY Jeffrey Volpe, GISP Bergmann Associates Rochester, NY
1.2 Traffic Operations			
Moderator:			
	1.2.1	Satellite Imagery-Based Traffic Volume Demand Mapping for Road Network GIS	Katherine Osborne AMEC Earth & Environmental Nashville, TN
	1.2.2	GIS Support for a Traffic Operations Management Plan in Delaware	David Racca University of Delaware Newark, DE
	1.2.3	Real-Time Arterial Traffic Performance Measures Using GPS-Instrumented Vehicles	Jason Anderson South Dakota State Uni. Brookings, SD
1.3 Transportation for the Nation			
Moderator:			
	1.3.1	The Transportation for the Nation Strategic Plan	Steve Lewis USDOT Washington, DC
	1.3.2	Michigan Success Stories	Rob Surber State of Michigan Lansing, MI 48933
	1.3.3	Maryland Success Stories	Kenny Miller State of Maryland Annapolis, MD
1.4 Interesting Talks			
Moderator:			
	1.4.1	<i>Student Paper Awardee</i> - A Technique for Merging State and Non-State Linear Referencing System	Zach Ryals Tuscaloosa, AL University of Alabama
	1.4.2	Abu Dhabi Department of Transport Enterprise GIS Application GeoTRANS	Nassim Al-Abed Abu Dhabi Department of Transport Abu Dhabi
	1.4.3	Mobile LiDAR for Positive Train Control	Jason Amadori Earth Eye, LLC Orlando, FL

The  symbol indicates a session from Pennsylvania, the Host State.

CONCURRENT SESSION 2

3:30PM MONDAY, MARCH 28


2.1 Integrating Enterprises			
Moderator:			
2.1.1	NJTPA Enterprise GIS Implementation	Zenobia L. Fields North Jersey Transportation Planning Authority Newark, NJ	
2.1.2	The State of Editing and Maintaining GeoSpatial Networks	Simon Lewis AgileAssets Media, PA	Randy Rowell Idaho Transportation Dp Boise, ID
2.1.3	A GIS Data Repository Model for Enterprise GIS in Transportation	Yueming Wu West Virginia Department of Transportation Charleston, WV	
2.2 Traffic Incidents			
Moderator:			
2.2.1	Incident Location Tool: Point-and-Click Mapping Software for Field-Based Incident Geo-Location by Law Enforcement	Daniel J. Gieseman Iowa State University Ames, IA	
2.2.2	Evaluation of the Locations of Kentucky's Traffic Crash Data	Eric Green Kentucky Transportation Center, U of Kentucky Lexington, KY	
2.2.3	Performance Measurement and Monitoring for Incident Management	David Krauss Geodecisions Tampa, FL	Frank Horne Tennessee DOT Nashville, TN
2.3 Integrating Data			
Moderator:			
2.3.1	Leveraging GIS as a Collaborative Platform: Integrating Data within Federal Lands Highway and with our Partners	Daniel W. Van Gilder EA Federal Lands Hwy Sterling, VA	Andy Byra CTL Federal Lands Hwy Lakewood, CO
2.3.2	Developing an interoperable road centerline dataset	Matthew P Lawson, PhD, AICP County of Mercer, NJ Trenton, NJ	
2.3.3	Data migration between software platforms and databases	Shawn Blaesing-Thompson Iowa DOT Ames, IA	Darrin Welch HNTB Kansas City, MO
2.4 Transit Analysis			
Moderator:			
	2.4.1 New Method for Defining a Transit Commuter Shed	Joshua Rocks DVRPC Philadelphia, PA	
	2.4.2 Park and Ride Demand Estimation	Michael Demmon Fairfax County; DOT Fairfax, VA	Scudder Wagg Michael Baker Jr Corp Richmond, VA
	2.4.3 Nexus Study: GIS Based Congestion Management Fee Calculator and Greenhouse Gas Emission Tool	Yushuang Zhou Cambridge Systematics Oakland, CA	Michael Snavelly Cambridge Systematics Oakland, CA

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CONCURRENT SESSION 3

10:30 AM TUESDAY, MARCH 29

3.1 Asset Integration			
Moderator:			
3.1.1	Merging of Aerial and Mobile LIDAR Data	Dr. Sridhar Dharmapuri Michael Baker Jr., Inc Beaver, PA	
3.1.2	ODOT FACS-STIP Asset Web Mapping and Reporting Tools	Loren Mueller Critigen Corvallis, OR	
3.1.3	Asset Management: Data to Information	Inya Nlenanya InTrans, Iowa State U Ames, IA	Jian (Carlos) Gao Iowa State University Ames, IA
3.2 Safety Mapping and Analysis			
Moderator:			
3.2.1	Development of a Statewide Crash Map: Merging and Mapping State and non-State Crashes onto a Single Network	Andrew J. Graettinger University of Alabama Tuscaloosa, AL	Xiao Qin, Ph.D., PE South Dakota State U. Brookings, SD
3.2.2	South Carolina DOT's Crash Diagramming Tool	Jennifer Oswald-Rhoades South Carolina DOT Columbia, SC	Bruce Aquila Intergraph Corporation Huntsville, AL
3.2.3	Snow Removal and Ice Condition	Marshall Burgess WVDOH Charleston, WV	
3.3 Integrating Data from the Field			
Moderator:			
3.3.1	Going Mobile: Integrating Field GIS Into the Larger Existing Enterprise	Will Holmes and Andrew McKinney KY Transportation Cabinet Frankfort, TN	
3.3.2	Sources of Roadway Data for IntelliDrive Applications	Bruce D. Spear Cambridge Systematics Cambridge, MA	
3.3.3	Field Asset Data Collection and Integration with the Enterprise Database	Marc Kratzschmar Bentley Systems, Inc Fort Plain, WY	Ian Martin TC Technology Carlsbad, CA
3.4 Advances in Transit			
Moderator:			
	3.4.1	DVRPC's Use of OpenStreetMap and Google Transit Feed in Transportation Planning	Wolfgang Scherr DVRPC Philadelphia, PA
	3.4.2	Improving Information Usability at BC Transit	Michael Grant BC Transit Victoria, BC
	3.4.3	GIS Applications in Support of Bus Operations and Customer Information	Glenn Newman NJ TRANSIT Newark, NJ
			Nate Reck GeoDecisions Camp Hill, PA

The  symbol indicates a session from Pennsylvania, the Host State.

CONCURRENT SESSION 4


1:30 PM TUESDAY, MARCH 29

4.1 Planning Portals			
Moderator:			
	4.1.1	MPMS IQ Web-based GIS Mapping Application	John Parker PENNDOT Harrisburg, PA Greg Ulp CIBER INC. Mechanicsburg, PA
	4.1.2	UPLAN interactive planning and analysis tool	John Thomas, PE and Frank Pisani Utah DOT Salt Lake City, UT
	4.1.3	ArcGIS Server Silverlight web application for 2012 Appalachian Development Highway System Cost to Complete Estimate	Sanghong Yoo Rahall Transportation Inst. Hutington, WV Jason Wang Appalachian Reg.Com. Washington, DC
4.2 GIS in the Cloud			
Moderator:			
	4.2.1	Achieve scalable, high performance, and economical application deployment through cloud computing oriented system architecture design: Case Study of NJDOT Traffic Monitoring System Web 2.0	Chris Zajac NJDOT Trenton, NJ Yu "Bud" Luo Michael Baker, Jr., Inc. Horsham, PA
	4.2.2	Leveraging Cloud Based GIS to handle traffic spikes in ITS applications	Yushuang Zhou Cambridge Systematics Oakland, CA Michael Snavely Cambridge Systematics Oakland, CA
	4.2.3	GIS-T Futures at Caltrans: Planning Your Pathway Into the Cloud	Harold Feinberg California Department of Transportation Sacramento, CA
4.3 State Enterprise Services			
Moderator:			
	4.3.1	Iowa DOT ArcGIS Server Implementation highs and lows	Eric Abrams Iowa Department of Transportation Ames, IA
	4.3.2	Building the Enterprise, one office/one widget at a time: Maryland State Highway Administration's deployment of an Enterprise GIS (eGIS) solution utilizing the ArcGIS Server API for Adobe Flex 2.0	Michel Ney Sheffer, GISP Maryland State Hwy Adm Baltimore, MD Erin Ann Lesh, GISP Maryland Enviro. Svcs. Millersville, MD
	4.3.3	The Evolution from Application to Service: How to Get From A to S	Thomas Martin Mn/DOT Transportation Data and Analysis St. Paul, MN
4.4 Non-Motorized Transit			
Moderator:			
	4.4.1	Mercer County Interactive Bikeability Map	Christopher Pollard Delaware Valley Regional Planning Commission Philadelphia, PA
	4.4.2	Evaluating Bicycle Networks Based on Traffic Stress and Connectivity	Maaza C. Mekuria Mineta Transportation Inst. San Jose, CA Peter G. Furth Northeastern University Boston, MA
	4.4.3	A GIS-Based Framework for Modeling Non-Motorized Transportation	Jeremy Raw and Brian Gardner Federal Highway Administration, US DOT Washington, DC

The  symbol indicates a session from Pennsylvania, the Host State.

CONCURRENT SESSION 5

8:30 AM WEDNESDAY, MARCH 30

5.1 State Enterprise Applications		
Moderator:		
5.1.1	Bridging the gap with Maryland Transportation Authority Enterprise GIS	Kaushik Dutta Maryland Transportation Authority Baltimore, MD
5.1.2	NCDOT Spatial Data Viewer (SDV)	John Farley NCDOT Raleigh, NC
 5.1.3	Using Google Maps in PennDOT's Web Applications	Patrick J. Kielty and Matt Allen PENNDOT Harrisburg, PA
5.2 Freight		
Moderator:		
5.2.1	Geospatial Decision Support Implementation for Motor Carrier Enforcement Operational Planning	Greg Ferrara Institute for Transportation Research and Education Raleigh, NC
5.2.2	Freight Analysis Framework, version 3 - A success story of the State DOT's continued efforts and advancement of LRS integrated Geospatial Highway Network	Mohammed (Maks) Alam Michael Sprung Battelle FHWA Columbus, OH Washington, DC
5.2.3	Evaluating Operational Resilience of a Highway Corridor in Wisconsin, using a GIS-based Freight Network	Kaushik Bekkem and Teresa M Adams University Of Wisconsin-Madison Madison, WI
5.3 LRS Data Models		
Moderator:		
5.3.1	The Model Inventory of Roadway Elements (MIRE)	Robert Pollack Federal Highway Administration Washington, DC
5.3.2	Advanced Linear Referencing for Transportation Data Models	Justin Furch Michael Baker Jr Hamilton, NJ
5.3.3	Modeling Techniques for DoT Geographic Data Models in Open, Standards Based Relational Database Management Systems	Shawn Owston Acquis BI Princeville, HI
5.4 Imagery		
Moderator:		
5.4.1	Roadway Asset Inventory along the Atlantic City Expressway	Glenn Locke, CAPM, GISP Michael Baker Corporation Hamilton, NJ
5.4.2	Service Oriented Image Management at NYSDOT	Kevin Hunt NYS Dept of Transportation Albany, NY
5.4.3	GIS Provides Seamless State-wide Imagery to CADD	Erin Lesh Gary Waters MD Environmental Service ESRI Millersville, MD Alpharetta, GA

 The symbol indicates a session from Pennsylvania, the Host State.

CONCURRENT SESSION 6

10:30 AM WEDNESDAY, MARCH 30

6.1 State Data Portals			
Moderator:			
6.1.1	"SEWP" sounds like "Soup" Tasty GIS Functionality for Transportation	Thomas W. Tiner, CP, GISP Michael Baker Jr., Inc Hamilton, NJ	
6.1.2	Data Access User Needs Study A User Needs Assessment for the Colorado DOT (CDOT)	Lou Henefeld Colorado DOT Denver, CO	Allen Ibaugh Data Transfer Solutions Orlando, FL
6.1.3	Maryland State Highway Administration's Office of Highway Development GIS Portal	Carl Henderson Maryland State Hwy Adm Baltimore, MD	Jeff Roberts, PMP JMT Tech. Group Sparks, MD
6.2 Right of Way			
Moderator:			
6.2.1	A Framework for Geospatially Enabling the Business and Information of Transportation Right-of-Way Activities	Kavya Sambana AI Engineers Inc New York, NY	Kathleen L. Hancock Virginia Tech Alexandria, VA
6.2.2	Nevada DOT's multi Divisional effort to create a material sites layer	Eric Warmath Nevada DOT Carson City, NV	
6.2.3	Using GIS for Highway Noise Analysis	Ken Avery, P.E. and Bergmann Associates Rochester, NY	Jeffrey Volpe, GISP
6.3 LRS Implementations			
Moderator:			
6.3.1	The Evolution of Hawaii DOT's Linear Referencing System	Goro Suljoadikusumo Hawaii DOT Honolulu, HI	Bruce Aquila Intergraph Corporation Huntsville, AL
6.3.2	Franklin County LBRS	Nancy Reger, AICP and Mid Ohio Regional Planning Commission Columbus, OH	Cheri Mansperger
6.3.3	Local Government Cooperative Migrates to LRS - Boulder County, Colorado	John Mosher Boulder County Rd Maint. Longmont, CO	J. Allison Butler MilePost Zero Orlando, FL
6.4 Visualization and 3D			
Moderator:			
6.4.1	The Impacts of Virtual Design and Construction (VDC) Technologies - Today and Tomorrow	Charles Hixon Bergmann Associates Rochester, NY	
6.4.2	National Developments in GIS and Visualization	Ben Williams Federal Highway Administration Resource Center Georgia	
6.4.3	3D Visualization for Transportation Network in Flood Region	EunSu Lee North Dakota State University Fargo, ND	

GIS-T Attendee Registration Form

Please use our easy On-line Registration at:

<http://www.gis-t.org>, available on 1/4/2011

ONE REGISTRATION PER PAGE PLEASE

NOTICE: IF YOU HAVE GUEST(S) ATTENDING, PLEASE SEE OUR GUEST REGISTRATION FORM

Name (Mr. Ms.) _____ Nickname _____
First Last

Address _____
Street City State ZIP

Business Name _____

Business Phone _____ Fax _____

Email: _____

FEES	Before/on 3/01/11	After 3/01/11	Total
GIS-T 2011 Symposium ¹	\$295	\$350	\$
GIS-T 2011 Workshops ²	\$160	\$185	\$
Student - Symposium ³ & Workshops	\$100	\$125	\$
One Day-Symposium ⁴ Mon Tues Wed	\$150	\$175	\$
AMOUNT ENCLOSED			\$

Note on Fees

1. Does not include workshop fees.
2. Workshop fee covers entire day (Sunday, March 27, 2011) and includes breakfast and lunch. This is not a per-workshop fee. Please select choice of workshops below.
3. Student Fee covers attendance at the Symposium, Workshops, Lunches, and Exhibit Hall Receptions. **Does not cover the Tuesday Social.** Please select choice of workshops below.
4. One Day Registration Fee covers attendance for one day at the Conference, Lunch, and Exhibition Hall Reception. **It does not include the Tuesday Social.**

Workshops (IMPORTANT: REGISTRATION FEE FOR THE SYMPOSIUM DOES NOT INCLUDE WORKSHOPS, SEE FEE LIST ABOVE)

Morning Session - Pick One	Afternoon Session - Pick One
<input type="checkbox"/> GIS Technology: Return on Investment	<input type="checkbox"/> HPMS 2010+: A GIS Odyssey
<input type="checkbox"/> Practical Census Getting the data into your GIS	<input type="checkbox"/> GIS In the Clouds, the Future of Analysis
<input type="checkbox"/> Modernization of the National Spatial Reference System	<input type="checkbox"/> The Status, Benefits, and Challenges of Commercially-Available Road Networks
<input type="checkbox"/> Local Roads, LRS and Safety Analysis	<input type="checkbox"/> Linear Referencing Methods and How LRMs Are Used by Business Functions

CHECK IN WILL BEGIN ON SUNDAY, March 27th, AT 7:00 AM and CONTINUES THROUGHOUT THE SYMPOSIUM

PAYMENT BY CHECK, MONEY ORDER OR REGISTER ON-LINE USING CREDIT CARD

Send Registration & Check to
 Rose Braun
 Nebraska Department of Roads
 Business Technology Support Division
 PO Box 94759
 Lincoln, NE 68509
 Phone: 402-479-3696
 Fax: 402-479-3884

Make checks Payable to "GIS-T". Check <http://www.gis-t.org> for the most up to date information.

Refund Policy: All cancellations and refunds are subject to a \$50.00 processing fee. No refunds will be provided after March 19, 2011. To qualify for a full refund, a written cancellation notice must be sent to Rose Braun, 1400 Highway 2, PO Box 94759, Lincoln, NE 68509.

Guest(s) Registration Form

Please use our easy On-line Registration at:
<http://www.gis-t.org>, available on 1/4/2011
 This registration is for Guest(s) of Symposium Attendees

Symposium Attendee's Name (Mr. Ms.) _____
First Last

ADULT GUEST REGISTRATION

Adult Guest Name (Mr. Ms.) _____
First Last

Address _____
Street City State ZIP

Business Name _____

Business Phone _____ Fax _____

E-mail: _____

Fee includes Social on Tuesday night, day trips on Monday, Tuesday and Wednesday. Breakfast each morning will be provided at the hotel, lunch will be provided on the Monday day trip and a box lunch at the hotel will be provided on Wednesday.

FEES

	Number of Registrants	Total
\$165.00		\$
	TOTAL AMOUNT*	\$

CHILD(REN) REGISTRATION (Under age of 18)

Child(ren)'s Name(s)/Age(s)

M/F _____ M/F _____

M/F _____ M/F _____

FEES

	Number of Registrants	Total
Children Ages 6 & under	Free	\$
Age 7 - 18	\$35.00 for Each Child	\$
	TOTAL AMOUNT *	\$

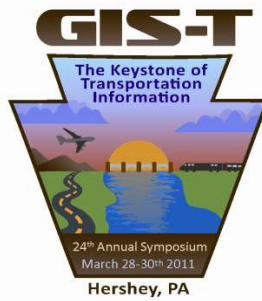
GRAND TOTAL ENCLOSED FOR ALL REGISTRANTS* \$

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Hershey, Pennsylvania – Lodging and Logistics

Hotel Accommodations

Primary Hotel:

The Hershey Lodge
325 University Drive
Hershey, PA 17033-0446
1-800-533-3131 or 717-533-3311 or On-Line
http://www.hersheymeetings.com/hershey_lodge/index.php

Hotel Information:

Symposium hotel rates valid until March 4, 2011
Rate: \$114.00 + Tax per night for single or double. **To receive this special rate, please identify yourself as an attendee of the AASHTO GIS-T Symposium.**

Hotel rates will be honored three days before and after the Symposium.
Come early and stay after, you will be within an hour of Gettysburg and battlefield, the National Civil War Museum, the Antique Auto Club of America Museum, outlet shopping (PA has no sales tax on clothing), Strasburg Railroad, the State Railroad Museum, Indian Echo Caverns, the State Museum of Pennsylvania, and Penn National Racetrack and Casino.

Airport Information

Harrisburg International Airport - MDT is user friendly and only 15 minutes from the Hershey Lodge.
<http://www.flyhia.com/>

Shuttle Services

Hershey Lodge Shuttle Service is available at \$20.00 each trip. To make arrangements, please contact the Hotel Concierge directly at 717-534-8601 or, while making room reservations, ask the reservation agent to forward you to the Lodge Concierge.

Other Transportation

Harrisburg is on one of AMTRAK's busiest corridors, with several arrivals and departures daily.

Driving is also easy. Harrisburg is intersected by Interstates 81 and 83, as well as the Pennsylvania Turnpike, Interstate 76.

GIS in Transportation Symposium 2011



GIS-T Symposium Affiliates

- American Society for Photogrammetry and Remote Sensing
- Association of Metropolitan Planning Organizations
- Highway Engineering Exchange Program
- National Association of Regional Councils
- Transportation Research Board
- U.S. Department of Transportation
 - Federal Highway Administration
 - Federal Transit Administration
 - Research & Innovative Technology Administration
 - Urban and Regional Information Systems Association

GIS-T 2011

[Frank DeSendi](#)

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