

Preliminary Program



Mountains of Opportunity

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

April 12 - 14, 2010

Workshops – April 11, 2010

**Embassy Suites Hotel
Charleston, West Virginia**

Sponsored by:

American Association of State Highway and Transportation Officials



AASHTO GIS-T Task Force Chair

[Jay Adams](#)

Oklahoma DOT
200 N.E. 21st Street , Rm. 3A-7
Oklahoma City, OK 73105
(405) 521-2175
jadams@odot.org

Program Chair

[Brian Logan](#)

Kansas DOT
Eisenhower State Office Bldg.
700 S.W. Harrison Street
Topeka, KS 66603
(785) 296-4899
(785) 296-8188 fax
brian@ksdot.org

Workshop Chair

[Ben Williams](#)

FHWA - Resource Center
61 Forsyth St. Suite 17T26
Atlanta, GA 30303-3104
(404) 562-3671
(404) 562-3700 fax
ben.williams@dot.gov

Local Arrangements

[Hussein El Khansa](#)

West Virginia DOT
Building 5, 8th Floor
1900 Kanawha Blvd. East
Charleston, WV 25305
(304) 558-9657
mailto:hussein.s.elkhansa@wv.gov

Exhibits Chair

[Mark Sarmiento](#)

Federal Highway Administration
HEPI-10
1200 New Jersey Ave., SE
Washington DC 20590
(202)366-4828
(202)366-3713 fax
mark.sarmiento@dot.gov

Moderator Chair

[Lou Henefeld](#)

Colorado DOT
4201 E. Arkansas Ave.
Shumate Bldg.
Denver, CO 80222
(303) 757-9809
(303) 757-9727 fax
louis.henefeld@dot.state.co.us

The twenty-third annual GIS-T Symposium - *GIS-T 2010 Mountains of Opportunity* – 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 April 11, 2010, and three full days of conference activity, April 12-14, 2010.

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 – Carl “Chuck” Kinder, Jr. – Chuck Kinder is an honorable recipient of the 2004 “**Distinguished West Virginian Award**” by Governor Bob Wise. He is a graduate of West Virginia University with a bachelor’s degree in psychology and a master’s degree in counseling. During college, Chuck was the kicker/punter for the West Virginia University Mountaineer Football team. He played in 31 games, scored more than 100 points in his career, and ranked among the top ten punters nationally.

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 second concurrent session, the Symposium will host the Student Paper Contest; 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 *How Transportation for the Nation Benefits Me*.

Check WWW.GIS-T.ORG for the most current information

General Schedule

	Sunday April 11, 2010	Monday April 12, 2010	Tuesday April 13, 2010	Wednesday April 14, 2010		
7:00 AM	Registration Continental Breakfast	Registration Continental Breakfast	Registration Continental Breakfast	(Sleep In!!!)	7:00 AM	
8:00 AM	Morning Workshops 1. GIS Return on Investment 2. Introduction to Agile: Project Management & Development 3. Using LiDAR Project Data for Transportation Applications	Opening Session Welcome To West Virginia Keynote Speaker Carl "Chuck" Kinder, Jr.	Panel Discussion How Transportation for the Nation Benefits Me	Registration Continental Breakfast	8:00 AM	
9:00 AM		Break		Break	Session 5 1. Developments in Transportation GIS 2. Natl GIS Data Efforts 3. GIS Tools II 4. Routing	9:00 AM
10:00 AM		Break		Break	Break	10:00 AM
11:00 AM	Afternoon Workshops 4. Census 2010 / New Urbanized Boundaries 5. Iowa's Multi-level Linear Referencing System and Response to Minnesota's LRS RFI 6. Asset Management: Planning, Strategy, and Implementation	State Summary & Roll Call of States	Session 3 1. Enterprise GIS 2. Data Management 3. GIS in Traffic 4. GIS in Resource Management	Session 6 1. Safety 2. Integrating Legacy Systems 3. Data Collection 4. Local GIS	11:00 AM	
12:00 PM		Lunch	Lunch	Box Lunch Next Host State Presentation Awards/Drawings	12:00 PM	
1:00 PM		Lunch - Workshop Attendees Only	Lunch	Lunch	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	Afternoon Workshops 4. Census 2010 / New Urbanized Boundaries 5. Iowa's Multi-level Linear Referencing System and Response to Minnesota's LRS RFI 6. Asset Management: Planning, Strategy, and Implementation	Session 1 1. LRS 2. ARRA 3. Web Tools I 4. Asset Management	Session 4 1. Enterprise Data 2. Transportation Networks 3. Web Tools II 4. GIS in Planning	Symposium Wrap-Up Come join us for a debriefing of this year's symposium and planning for the next year. Refreshments Provided!	2:00 PM	
3:00 PM		Break	Break		3:00 PM	
4:00 PM		Session 2 1. Student Papers 2. HPMS 3. GIS Tools I 4. Mobile GIS	Emerging Issues Forum		4:00 PM	
5:00 PM	Break	GIS Gallery	Free Time		5:00 PM	
6:00 PM	Technology Hall Reception		Technology Hall Reception	Tuesday Night Social  Clay Center for the Arts and Sciences	6:00 PM	
7:00 PM	Technology Hall Reception		Technology Hall Reception		7:00 PM	
8:00 PM					8:00 PM	
8:30 PM					8:30 PM	

GIS-T Workshops – Sunday, April 11

There will be three tracks for workshops presented at the 2010 GIS-T. All workshops are half-day workshops. You may pick one from the morning and one from the afternoon. Lunch is provided to workshop attendees.

MORNING SESSIONS

Workshop 1. **GIS Return on Investment**

Instructor: Dr. Sergei Andronikov, George Mason Univ.

GIS applications have to exist in an environment where they compete for IT resources and funding against many other needs of the States. In order to receive management support for new projects, the staff usually has to build upon past efforts, show accomplishments and how GIS supports the rest of the business data of the agency. As part of these justifications, there has continued to be interest in methods to demonstrate the return on the investment (ROI) for these investments. Creating ROI analyses have sometimes proven controversial and difficult.

This workshop provides a practical application of a GIS methodology to facilitate creation of return-on-investment (ROI) business cases focusing on transportation issues. It will demonstrate the successful application of these investments into GIS technology.

The objective of this training workshop is to provide a theoretical layout, structure and practical examples to allow a person to build ROI-focused GIS strategic solutions. The theoretic background and main methods are based on the book: *Business Benefits of GIS: An ROI Approach* written by Maguire, Kouyoujian and Smith, and published by ESRI.

Applications focusing on transportation projects need to take into account the current state of business and production process, investments in GIS technology, etc. to optimize the design and implementation of geospatially-related activities, ways to calculate the agency benefits, prove the financial case, and estimate the Return on Investments.

This workshop will provide knowledge and tools to practically evaluate and assess the value of GIS technology within each project or/and mission of the agency or group. It is ideal for management team members from both government and industry involved in GIS transportation projects. Participants will identify key success factors in managing GIS technology to meet government and transportation industry objectives.

Workshop 2. **Introduction to Agile: Project Management & Development**

Instructor: Dave Bouwman and Brian Noyle, Data Transfer Solutions

Wikipedia describes Agile software development as "... a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams." This Agile Workshop will be divided into two 2-hour sessions. The first session will address agile project management practices and the second session will address agile software development and engineering practices. Both sessions will provide general overviews of agile practices as well as discussions about the practical applications of each in a GIS software development environment.

The first part of the workshop will be dedicated to discussing agile project management practices. This session will include an overview what agile is and how it differs from other more traditional development methodologies. We will also demonstrate how agile practices are used to manage scope, estimating project sizes and duration, and monitoring project task progress. Most importantly, we'll address the collaborative nature of agile practices in terms of managing client expectations, managing change, and ensuring the delivery of value to customers quickly and effectively. This session is appropriate for project manager as well as the development staff as it will cover the foundations of agile practices for all team members.

The second half of the session will focus on providing an overview of agile practices for software development and engineering. This session will provide an overview of the Extreme Programming (XP) practices that are useful for agile development teams. This session will be technical in nature and is probably most appropriate for development teams. For project managers, it provides a basic understanding of how agile development practices differ from traditional development methodologies.

Workshop 3. **Using LiDAR Project Data for Transportation Applications**

Instructor: Chris Markel, Penn Dept. of Natural Resources, PAMAP Program

This LiDAR Workshop will focus on the use of LiDAR data for transportation applications. Thus, the workshop will be centered on the use of airborne LiDAR data, and still touch base on the uses of mobile LiDAR mapping. Statewide LiDAR

data projects have been completed in several states and are underway in many more. In addition, federal agencies such as the USGS and FEMA are encouraging and providing funds for large LiDAR acquisitions. This large amount of available data can be very useful for GIS-T practitioners in a wide variety of disciplines, and the workshop will help attendees to understand what they can do in their own locations. The workshop will be based largely on the Pennsylvania's PAMAP experience and discuss how the PAMAP data is used by PennDOT and others. However, experiences from other areas and practices will be used and the attendees should be able to apply the lessons to their own available data stores. The proposed content is presented in outline form below.

Statewide Programs and what they mean for transportation. Discussion of statewide or other large-area LiDAR acquisitions, their status, what their purpose is, what the funding possibilities area.

Data Particulars and Specifications. What data is being acquired. What format? What are the specifications and accuracies? What exactly is the point cloud?

Derived Data. LiDAR projects usually include data processing to produce derivative products such as digital elevation models (DEM), contours, or digital surface models (DSM). What are the characteristics of these data products? How can they be used for transportation applications?

Transportation Applications. What has LiDAR data been used for? Examples of use for transportation applications such as identification of potential landslide areas, visualization, road modeling with elevation, etc.

LiDAR Software. What software products are available to use LiDAR data and derived products? What are the characteristics of the software? Demonstration of using LiDAR data by a software vendor or services provider for a particular application.

CAD Environment. What can be done with the data in the CAD/design environment? What software might be needed? What system requirements must be addressed? Demonstration of using LiDAR data in the design environment by a software vendor or services provider for a particular application.

GIS Environment. What can be done with the data in the GIS environment? What software might be needed? What system requirements must be addressed? Demonstration of using LiDAR data in GIS software by a software vendor or services provider for a particular application.

Mobile LiDAR Mapping. Discussion of mobile LiDAR, equipment used, data acquired, and applications. Current and potential uses of the data. Considerations of this platform for the future.

AFTERNOON SESSIONS

Workshop 4. [Census 2010 / New Urbanized Boundaries](#)

Instructors: Ed Christopher, FHWA Resource Center & Michael Ratcliffe, Chief, Geocartographic Products and Criteria Geography, Division U.S. Census Bureau

Sponsored by the Census Transportation Planning Products (CTPP) Program

April 1, 2010 will mark the 23rd time that the US population will be counted. As part of this process a variety of activities take place that affect those responsible for the geographical construct of the data. For example, new Urbanized Areas (UAs) will be defined, Traffic Analysis Zones (TAZs) constructed and Public Use Microdata Areas (PUMAs) built. During 2009, The Census Bureau developed new rules for defining urban area boundaries, Traffic Analysis Zones and the Public Use Microdata Areas.

Coupled with this, new Topologically Integrated Geographic Encoding and Referencing (TIGER)/Line shapefiles will be released. In this workshop, participants will receive a general overview of these and other Census geographic information files as well as learning where to get and take home valuable resources.

Workshop 5. **Iowa's Multi-level Linear Referencing System and Response to Minnesota's LRS RFI**

Instructors: Eric Abrams, GIS Coordinator, Iowa DOT, Steve Kadolph, LRS Technical Expert, Iowa DOT, Ryan Wylie, GIS Quality Administrator, Iowa DOT, and Matthew Koukol and Thomas Martin, Minnesota DOT

This workshop will include an introduction to Iowa's Linear Referencing System (LRS), the NCHRP 20-27 Model Architecture, the AASHTO Technology Innovation Grant (TIG) Project and what Iowa and other lead state teams can do for other states under the TIG grant.

The discussion of Linear Referencing Methods (LRMs) will cover how they are used by business data, the Linear Reference System including its components and what is required of business data to use these LRMS to give business data a common spatial location.

Part of the workshop will show how Minnesota's business requirements (producing a log point listing showing both business data and linear location) were accomplished. Minnesota's location data was entered into the Iowa LRS and then LRMs in this system were used to show both business and location information in a log point format.

Iowa will also demonstrate their LRS maintenance tool with an emphasis on quality control, change propagation, and business rules.

This workshop will include an introduction to Iowa's Linear Referencing System (LRS), the TIG Project and the NCHRP 20-27 Model Architecture. The discussion of Linear Referencing Methods (LRMs) will cover how they are used by business data, the LRS including its components and what is required of business data to use these LRMS to give business data a common spatial location.

We will show how Iowa responded to Minnesota's Request for Information by leveraging their LRS to add the Minnesota data to the Iowa LRS data. The workshop will demonstrate how LRM transformations were run to stage the business data against the added Minnesota LRS data including the temporal components (route changes, deletions, etc. over time). The creation of new business data was made by leveraging the Minnesota LRS data, staging the Minnesota business data against their LRS data, and finally creating a logpoint listing of that business data by using the Linear Referencing System.

Iowa has created an LRS Maintenance Tool which puts an emphasis on quality control, change propagation, and business rules.

Workshop 6. **URISA Workshop - Asset Management: Planning, Strategy, and Implementation**

Instructor: Jason Amadori and Allen Ibaugh, Data Transfer Solutions

Public and private agencies face continuous challenges to accomplish more with less as increases in demand, regulatory requirements, infrastructure deterioration, and political and economic forces have significantly outpaced increases in capital and operating budgets. Many of these agencies are turning to Asset Management to cope with these challenges and improve business performance and effectiveness. This workshop will focus on several aspects of developing an asset management system that could help improve performance, reduce long-term costs, and maximize return on investment in infrastructure assets.

Specific topics include:

- Strategy and Planning
- Data Collection Methods
- Software Solutions
- Information Management and Decision Support Tools
- Evaluation and Performance Measures
- GASB34 Reporting
- Life Cycle Costs

Intended Audience:

This workshop is intended for utility, transportation, engineering, planning, and environmental managers and analysts of the public and private sectors.

TECHNOLOGY RECEPTION – TECHNOLOGY EXHIBITS OPEN

(SUNDAY 5:30 PM TO 8:30 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 participants 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 5:00 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 “Chuck” Kinder, Jr.

Chuck Kinder is an honorable recipient of the 2004 “**Distinguished West Virginian Award**” by Governor Bob Wise. He is a graduate of West Virginia University with a bachelor’s degree in psychology and a master’s degree in counseling. During college, Chuck was the kicker/punter for the West Virginia University Mountaineer Football team. He played in 31 games, scored more than 100 points in his career, and ranked among the top ten punters nationally. He is the only football player in NCAA history to wear the uniform number 100.

In January 1995, Chuck retired from a twenty-four year career in the United States Army with the rank of Lieutenant Colonel. During this period, he served as a personnel psychologist and more than a decade as a trainer for middle management Army officers. He graduated from the United States Army Command and General Staff College and served as instructor and adjunct faculty until his retirement. Chuck was the General Manager of the Charleston Civic Center and Auditorium for six years, where he managed a budget of \$1,500,000 and a full-time staff of 17. In 2006, Chuck retired as the Director of Training for the West Virginia State Auditor’s Office.

STATE SUMMARY AND ROLL CALL OF STATES

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

Summary results from a survey sent to GIS representatives in each state will be presented. 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 challenges that they face.

STUDENT PAPER SESSION

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

This year GIS-T presents the fifth annual Student Paper Session. Student winners, selected by the planning committee, will present their technical research papers focused on developing solutions for current GIS-T issues. The students will take home a \$250 or \$500 award.

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. A dedicated time will be made available on Monday evening to browse and discuss the various entries. Come 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. Attendees will be able to view maps for the duration of the Symposium. You can avoid traveling with a map tube by sending it well in advance to [Hussein El Khansa](#), at the address shown on the back page, no later than March 30, 2010.

EMERGING ISSUES FORUM

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

This forum will bring together participants from federal and state government to discuss strategies of collecting, collating, and “pushing up” transportation GIS data from local, through state, and to the federal level. State transportation agencies are at the crossroads of this process as they already have well-developed GIS programs, as well as a number of programs that already interact with local and regional levels of government. At the federal-level USDOT, DHS, and USGS all have programs developing national standards for GIS data. Questions for discussion will include:

Why do we all need to be on the same map? What resources are available to assist local government to develop GIS and GIS data? Who is already successfully moving data from local to federal levels and how are they doing it?

Panelists include: Tom Roff (FHWA), Louis Effa (MARAD), Raquel Wright (FRA), Steve Lewis (RITA/BTS)

When you register, please take a few minutes to identify those areas of concern or interest that you have, and thank you for your participation.

SPOUSE TOURS
Monday, April 12 – Blenko Glass Company Tour
(8:00 AM to 12:00 PM)

“Exquisite color, skilled craftsmen, and creative designs have made Blenko famous in the ancient craft of hand-blown glass. Over the years, talented designers have developed contemporary new designs for our skilled artisans, who have learned the difficult techniques of glass blowing through many years of practice.” Quote taken from www.blenkoglass.com

Blenko Glass Company is one of the last remaining mouth blown glass factories in the US. This family owned and operated company has been in business since 1893. While visiting the Blenko Factory you will be given a guided tour which includes a brief history of the company, notable installations, fun facts and a descriptive tour of the production process. After your tour, you will have a chance to shop at our factory outlet. Visit <http://www.blenkoglass.com/> for more information.

The tour will gather in the hotel lobby at 7:45 AM before boarding busses for the Blenko Glass Company. Upon your return to Charleston you will have the opportunity to enjoy shopping and lunch, on your own, at the Charleston Town Center Mall. Visit <http://www.charlestantowncenter.com/> for store and restaurant information.

Tuesday, April 13 – Capitol and Museum Tour
(10:00 AM to 2:00 PM)



Tour the State Capitol and West Virginia State Museum in this excursion that will allow participants to view and enjoy West Virginia history and culture. The tour will gather in the hotel lobby at 9:45 AM prior to boarding busses. Two separate tours will depart the hotel at 10:00 AM and view each complex in turn. Tour A will start with the State Capitol and finish with the Museum. Tour B will start with the Museum and finish with the State Capitol with both tours concluding at 2:00 PM. Lunch will be provided at the Capitol Food Court at 12:00 pm.

At the State Capitol: The West Virginia State Capitol building was dedicated by Governor William G. Conley on June 20, 1932. The buff Indiana limestone exterior and the magnificent 293-foot gold dome, that tops the capitol building, overlook the beautiful Kanawha River. The expansive, tree-shaded grounds include several statues, including Abraham Lincoln on the front plaza and Stonewall Jackson, a native of the state. The Lincoln statue depicts the President walking at midnight, head bowed, wearing a robe over his clothes.

The Capitol Tour starts in the rotunda, on the ground floor; you will hear a brief history and description of the building, including the cost and architectural information. You will proceed to the first floor, or the legislative floor to tour the House and the Senate Chambers. You then will go back to the ground floor and proceed down the hallway with Governor's Portraits and then to the small rotunda of the West Wing. You will see former WV Capitols and hear a brief description of them. The tour ends in the Governor's Reception Room.

At the West Virginia State Museum: The West Virginia Division of Culture and History opened in 1976 to showcase West Virginia's artistic, cultural and historical heritage. Located inside the Cultural Center is the West Virginia State Museum. The history of the state is told, in the newly-renovated 24,000 square-foot museum, through modern educational exhibits that appeals to visitors of all ages. You walk through a chronological journey of West Virginia history, which uses themed settings to highlight pivotal moments. Special effects, narration, surround sound, and dynamic theater lighting provides visitors with the experience of what it was like to be a West Virginian throughout the state's history.

In addition, discovery rooms will offer visitors the opportunity to learn more about the history of West Virginia. The discovery rooms feature artifacts, works of art, stories, music, and film clips. Computer stations provide facts about additional topics related to the show path and discovery rooms. Visit www.wvculture.org for more information.

PANEL DISCUSSION

How Transportation for the Nation Benefits Me

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

Moderators: *Patricia Solano and Rich Grady*

As part of a NSGIC initiative, the US DOT will begin to meet its responsibility under OMB Circular A- 16 to advance strategic planning for the realization of a national framework for Transportation for the Nation (TFTN). The TFTN sessions at this conference are a step in a TFTN strategic planning process designed to evaluate the opportunities, interests, best practices, institutional constraints, resource requirements, and benefits of TFTN. The result of this evaluation will address key questions and assumptions about TFTN and will develop a strategic vision for TFTN.

TFTN refers to the goal of coordinating and developing a nationally significant transportation data, with particular emphasis on road centerlines. Some of the TFTN challenges are: a) Overlapping transportation dataset that vary in scale, coverage, formats, documentation, geometry and attributes. b) Transportation data developed and maintained by a variety of public and private entities with diverse objectives, requirements, capacities and resources. c) Public and private sectors further aggregating, integrating, attributing, and converting transportation data to serve distinct purposes (routing, planning, performance monitoring, emergency response, on-board navigation.)

Building on the general agreement that TFTN is an important concept and framework data for the nation, this panel discussion will focus on the specific ways in which TFTN is potentially important to various levels of government and the private sector. This panel will introduce the different points of view of these stakeholder groups, introducing the key opportunities, benefits and constraints affecting TFTN from each panelist's perspective.

Panel is scheduled to include representatives from a variety of points of view central to the issue of TFTN - federal transportation agencies, other federal agencies with extensive road networks, state DOT, regional/tribal/county representatives, and the private sector. The panel discussion will be followed by facilitated audience discussion.

Panelists include: Dan Widner, Coordinator, Virginia Geographic Information Network Integrated Services Program, and Steve Lewis, Geographic Information Officer, United States Department of Transportation and other state representatives

TUESDAY NIGHT SOCIAL

Clay Center for the Arts and Sciences

(Tuesday 5:30 PM to 10:00 PM)

The Clay Center is Charleston's own premier special event location. Tuesday's social event will take place in the Benedum Grand Lobby, distinguished by a glimmering, three-story wall of windows, elegant surfaces of granite, steel and West Virginia cherry veneer, coupled with the artistry of the terrazzo flooring and a sweeping grand staircase.


We will depart from the hotel at 5:30 pm and arrive at the Clay Center at approximately 5:45 pm. A "Country Roads" themed dinner will be served in the Grand Lobby at approximately 6:30 pm.

During dinner, you will enjoy the sounds of a native Appalachian style band. After dinner will be an extraordinary play performance. **Coal Camp Memories** is a one-act play, written and performed by Karen Vuranch. Karen researched life in West Virginia coal fields by talking to those who lived in the coal camps. Vuranch ages in front of the audience, growing from an exuberant ten-year-old to a demure teenager, then a young wife, and finally an old woman wise with years. During scene changes, Julie Adams plays traditional Appalachian music. **Coal Camp Memories** is a gentle and poignant story that recreates an era while it delights audiences of all ages.

After the social, buses will depart from the Clay Center beginning at 9:00 pm.

CONCURRENT SESSION 1

1:30 PM MONDAY, APRIL 12

1.1 LRS		
Moderator:		
1.1.1	Unifying the Colorado DOT (CDOT) Linear Referencing System	Lou Henefeld Colorado DOT Denver, CO
 1.1.2	Integration of WV DOT Road Data and Addressing Data	Kevin Kuhn WV GIS Technical Center Morgantown, WV
		Sanghong Yoo Rahall Transportation Institute
1.1.3	Putting the LBRS and other GIS datasets to Work for Traffic Modeling Networks	Sam Granato Ohio DOT Columbus, OH
		Carrie Whitaker Erie County Dept. of Planning and Zoning
1.2 ARRA		
Moderator:		
1.2.1	Mapping the USDOT ARRA Projects	Stephen M. Lewis USDOT Washington, DC
1.2.2	ORSTATS - Oregon's ARRA story	Ed Arabas State of Oregon Salem, OR
1.2.3	Using Web GIS to Track Government Spending and Performance	Eric Floss ESRI Alpharetta, GA
1.3 Web Tools I		
Moderator:		
1.3.1	Geotechnical GIS Website	Pallavi Bhandari Louisiana Transportation Research Center Baton Rouge, LA
1.3.2	Web based Capital Improvement Application for Public Transit	Martin Catala Center for Urban Transportation Research Tampa, FL
1.3.3	Iowa DOT Service Layer	Eric Abrams Iowa DOT Ames, IA
1.4 Asset Management		
Moderator: Katie Zimmerman, Applied Pavement Technology		
	Geospatial Information Technologies for Asset Management Peer Exchange	Michael Miles Deputy Director Maintenance and Operations CalTrans
	Katie Zimmerman will summarize key points and findings of the peer exchange during this session. Representatives from California, Virginia, and Washington State will also present specific appropriate examples of their efforts in applying geospatial technologies to asset management.	Jeff Price Assistant Director of Operations Planning Virginia DOT
		Alan Smith Lead GIS Architect/GIS Applications Development Manager Washington DOT



The  symbol indicates a session from West Virginia, the Host State.



CONCURRENT SESSION 2



3:30 PM MONDAY, APRIL 12

2.1	Student Paper		
	Moderator: Raquel Wright, USDOT / FRA		
2.1.1	Estimating Trip Diversion by Using Impedance in the Flooding Region	EunSu Lee PhD North Dakota State University (NDSU) Transportation and Logistics Program	
2.1.2	GIS Network Analysis for Finding the Potential Metro Rail Ridership by Access Modes in Los Angeles County	Bin Mo (Owen) Graduate Program Department of Geography and Urban Analysis California State University, Los Angeles	
2.2	HPMS		
	Moderator:		
2.2.1	HPMS and the Dualing Network	Tom Roff USDOT / FHWA Washington, DC	
2.2.2	Ideas to Help with the HPMS Submittal	Don Kiel GeoDecisions State College, PA	William (Bill) G. Schuman GeoDecisions
2.2.3	Finally: a Way to Create, Standardize and Locally Maintain a Statewide Seamless GIS Transportation and E9-1-1 Repository	Ron Cramer Digital Data Tech, Inc. Columbus, OH	Bruce Autremont Digital Data Technologies, Inc.
2.3	GIS Tools I		
	Moderator:		
2.3.1	Display of Geographic Transportation Data Stored and Integrated in a SQL Server Database	Francisco J. Torres NCTCOG Arlington, TX	
2.3.2	ArcPad a powerful new tool in asset inventory and management at Nevada DOT.	Eric Warmath Nevada DOT Carson, NV	
2.3.3	Building a National Railroad Bridge Dataset	Derald Dudley USDOT / RITA Washington, DC	Judah Lynam USDOT / FRA
2.4	Mobile GIS		
	Moderator:		
2.4.1	Use of Mobile GIS for Sign Inventories	Dan Paoly HDR Pittsburgh, PA	Amy Staud HDR
2.4.2	Web-accessible Metadata Tools	William Schuman GeoDecisions Nevada, IA	
2.4.3	The Evolution of Mobile Mapping	Jason Amadori Earth Eye, LLC Orlando, FL	

CONCURRENT SESSION 3

10:30 AM TUESDAY, APRIL 13

3.1 Enterprise GIS			
Moderator:			
3.1.1	A SOA-based Web Map Road Network System Application	Archer Carr Virginia DOT Richmond, VA	Jamie Christensen WorldView Solutions Inc.
3.1.2	E-TRIMS Spatially Enabling the Tennessee Department of Transportation (TDOT) Enterprise for Decision Support	Jeff Murphy Tennessee DOT Nashville, TN	Bruce Aquila Intergraph Corporation
3.1.3	Supporting VDOT's Enterprise GIS	Jackie Magnant ESRI Alpharetta, GA	Melanie Rippon Seigler Virginia DOT
3.2 Data Management & Integration			
Moderator:			
3.2.1	CAD-GIS integration in highway engineering design projects	Keith Raymond Bentley Canada Toronto, ON	Todd Rothermel HNTB
 3.2.2	Gaining More Insight: Integrating GIS with Primavera Project Management at WVDOT	Marshall L Burgess West Virginia DOT Charleston, WV	Jervetta Bruce CDP
3.2.3	Right -of-Way Information Management System	Aaron Ford HNTB Corporation Chicago, IL	Michael Bieberitz HNTB Corporation
3.3 GIS in Traffic Operations			
Moderator:			
3.3.1	Delaware Valley Regional Planning Commission - Traffic Count Request Application	William Stevens DVRPC Philadelphia, PA	Albert Sarvis GeoDecisions
3.3.2	Using Web 2.0 Mapping Engines in Desktop Applications: Opportunities and Challenges	Yu Bud" Luo" Michael Baker Jr., Inc. Horsham, PA	
3.3.3	Traffic Management Center Master Software	Matthew Schiemer, P.E. GeoDecisions Philadelphia, PA	Connie Gurchiek GeoDecisions
3.4 GIS in Resource Management			
Moderator:			
3.4.1	Mile Marker Signs and the Linear Referencing System	David DiNocco Massachusetts DOT Boston, MA	
 3.4.2	Georeferencing West Virginia DOT's Roadside Assets: An Asset Inventory Case Study	Allan Venema Fugro Roadware Inc. Richmond, VA	
3.4.3	Geo-enabling MN/DOT's Real Estate Management System	Andrew Buck Applied Geographics Boston, MA	Michael Turner Applied Geographics

 The  symbol indicates a session from West Virginia, the Host State.

CONCURRENT SESSION 4

1:30 PM TUESDAY, APRIL 13

4.1 Enterprise Data Efforts			
Moderator:			
4.1.1	Building a Successful Geospatial Data Sharing Framework: A Ohio DOT Success Story	Fred Judson Ohio DOT Dist. #2 Bowling Green, OH	
 4.1.2	Integrating and Stewarding Spatial Data for West Virginia Trails	Evan Fedorko WV University Morgantown, WV	Kurt Donaldson WV University
4.1.3	Illinois Highway Information System 2010	Jim Conlon GIS Solutions, Inc. Springfield, IL	Dan Wilcox Illinois DOT
4.2 Transportation Networks			
Moderator:			
4.2.1	How Transportation for the Nation Benefits me?	Patricia Solano Koniag Tech. Solutions Fairfax, VA	Richard Grady Applied Geographics
4.2.2	Transportation Data Needs for Federal Agencies	Timothy F. Trainor US Census Bureau Washington, DC	
4.2.3	Building a High Quality Rail Network	Raquel Wright USDOT/FRA Washington, DC	Greg Matthews USGS
4.3 Web Tools II			
Moderator:			
4.3.1	Kansas DOT's new implementation of active Straight Line Diagrams within their GIS web portal.	Jeff Tomlinson Intergraph Bend, OR	
4.3.2	Single Spatial Store Front: Web Enabled GIS Content Portal	Paul Weinberger Minnesota DOT St. Paul, MN	
4.3.3	A GIS Portal for a Multi-State Appalachian Development Highway System	Jason Wang ARC Washington, DC	Sanghong Yoo Rahall Transportation Institute
4.4 GIS in Planning			
Moderator:			
4.4.1	Benefit Cost Analysis of Strategic Provincial Roads in Southern and Eastern Afghanistan	John Wisdom Wilbur Smith Associates Columbia, SC	
 4.4.2	Solid Waste Planning and Transportation	Barbara L. MacLennan Monongalia County Morgantown, WV	Laura Stiller Monongalia County
4.4.3	Use of GIS in a transportation recovery plan for disaster response	Sandy Mehlhorn UTenn at Martin Martin, TN	



The  symbol indicates a session from West Virginia, the Host State.

CONCURRENT SESSION 5

8:30 AM WEDNESDAY, APRIL 14

5.1 Developments in Transportation GIS			
Moderator:			
5.1.1	Role of GIS Technology in Railways	Randall D. Tardy, PE Bentley Systems Inc Madison, AL	
5.1.2	Infrastructure Modeling and Digital Agencies - The convergence of CAD, BIM, GIS, Analysis, Visualization and Collaboration in the Future	Doug Eberhard Autodesk Golden, CO	Connie Gurchiek GeoDecisions
5.1.3	Will your Next TEA come from a Mega Region?	Ben Williams USDOT / FHWA Atlanta, GA	Mike Berry USDOT / FHWA
5.2 National GIS Data Efforts			
Moderator:			
5.2.1	National Geodetic Survey - Products & Services for the Geospatial Professional	William Stone NOAA/National Geodetic Survey Santa Fe, NM	
5.2.2	The National Map	Jean Parcher USGS Reston, VA	
5.2.3	Accessing the National Spatial Reference System	Ross Mackay NOAA/National Geodetic Survey Frankfort, KY	
5.3 GIS Tools II			
Moderator:			
5.3.1	South Carolina DOT's Project Screening Tool an effective utility to streamline the project planning process	Bruce Aquila Intergraph Corp. Harvest, AL	Nasser Vakili-Rad South Carolina DOT
5.3.2	NMRoads.com a Configure Off The Shelf ATIS System	Lee Jensen RealTimeSites Albuquerque, NM	Steve Schroeder RealTimeSites
5.3.3	GIS Supporting Winter Operations	Gary A. Waters ESRI Alpharetta, GA	Alan Smith or Tom Clay Washington DOT
5.4 Routing			
Moderator:			
5.4.1	Automated Oversized Overweight Permitting and Routing	Jay Adams Oklahoma DOT Oklahoma, OK	James O. Brown Intergraph Corp.
5.4.2	National Oversize / Overweight Preliminary Route Review with Online Mapping Tools	Dan Vogen Bentley Systems, Incorporated Downers Grove, IL	
5.4.3	Green Transport Routing	Dan Gibbons NAVTEQ Chicago, IL	Skip Parker NAVTEQ

CONCURRENT SESSION 6

10:30 AM WEDNESDAY, APRIL 14

6.1	Safety		
	Moderator:		
6.1.1	Tracking Defects Using GPS	Judah Lynam USDOT/FRA Washington, DC	Raquel Wright USDOT/FRA
6.1.2	Application of GIS for a Managed Use Lane Study	Feng Lu Parsons Brinckerhoff New York, NY	
6.1.3	An Example of a Successful State-Wide Enterprise GIS Program and its Impact upon Safety Data Systems	Jeremiah Glascock TSASS, Inc. Grove City, OH	Ron Cramer Digital Data Tech. Inc.
6.2	Integrating Legacy Systems		
	Moderator:		
6.2.1	Replacing Legacy Systems with a COTS	Heather King Oregon DOT Salem, OR	Marc Kratschmar Exor
6.2.2	SCDOT Initiates Innovative Project to Capture Local County Road Data	Donald McElveen South Carolina DOT Columbia, SC	David Kingsbury Rolta International
6.2.3	Kentucky's Transportation GIS: An Evolving Enterprise GIS	Will Holmes Kentucky Transportation Cabinet, OIT Frankfort, KY	
6.3	Data Collection		
	Moderator:		
6.3.1	From Photolog to Laser Scanning Scaling up and Maximizing the Utilization of Arizona's DOT Mobile Data Capture System	Rob Huber Trimble Brossard, Quebec	Jim Snow Arizona DOT
6.3.2	Web Enabling VideoLog Viewers	Jesse C. Jay GeoDecisions Austin, TX	
6.3.3	Techniques for Collecting, Processing and Analyzing GPS Travel Data in a GIS	Mark Ojah TTI College Station, TX	
6.4	Local GIS		
	Moderator:		
6.4.1	Case Study Designing and Implementing a GIS-Centric Pavement Management System for the City of Alexandria, Virginia	Craig Schorling Transmap Corporation Columbus, OH	L.A. McCracken City of Alexandria, VA
6.4.2	Powerful Integration of GIS, Asset Management, Work Order Management, CRM and Related Technology in Transportation - You Can Have it All Without Selling Your Soul!	Ramzi K. Bannura Anne Arundel County Maryland Annapolis, MD	
6.4.3	Leveraging GIS technology to provide a web-based infrastructure asset management system	Craig Gallant LJB Inc. Dayton, OH	

GIS-T Participant Registration Form

Please use our easy On-line Registration at:

<http://www.gis-t.org>, available on 1/4/2010

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 3/12/10	After 3/12/10	Total
GIS-T 2010 Symposium ¹	\$275	\$325	\$
GIS-T 2010 Workshops ²	\$150	\$175	\$
Student - Symposium ³ & Workshops	\$100	\$125	\$
One Day-Symposium ⁴ <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed	\$150	\$175	\$
AMOUNT ENCLOSED			\$

Note on Fees

1. Does not include workshop fees.
2. Workshop fee covers entire day (Sunday, April 11, 2010) and includes 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"/> Census 2010/New Urbanized Boundaries
<input type="checkbox"/> Introduction to Agile: Project Management & Development	<input type="checkbox"/> Iowa's Multi-level Linear Referencing System and Response to Minnesota's LRS RFI
<input type="checkbox"/> Using LiDAR Project Data for Transportation Applications	<input type="checkbox"/> Asset Management: Planning, Strategy, and Implementation

CHECK IN WILL BEGIN ON SATURDAY, APRIL 10th, FROM 3-6 PM FOR EARLY ARRIVALS 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 refunds are subject to a \$50.00 processing fee and will be issued no later than one month after the conference. To qualify for a full refund, a written cancellation must be received by Rose Braun, 1400 Highway 2, PO Box 94759, Lincoln, NE 68509, no later than April 9, 2010. For cancellations received between April 10, 2010 and April 30, 2010, a 50% refund will apply. **NO REFUNDS WILL BE GIVEN AFTER April 30, 2010.**

Guest(s) Registration Form

Please use our easy On-line Registration at:

<http://www.gis-t.org>, available on 1/4/2010

This registration is for Guest(s) of Symposium Participants

Symposium Participant'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 and Tuesday and Continental breakfast each morning. Lunch will be provided on the Tuesday day trip.

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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Charleston, West Virginia – Lodging and Logistics

Hotel Accommodations

Primary Hotel:

Embassy Suites Hotel - Charleston
300 Court Street
Charleston, WV 25301
304-347-8700

<http://www.embassysuitescharlestonwv.com>

Hotel Information

Symposium hotel rates valid until 3/20/10:

\$95.00 + Tax for Single or Double

To receive this special rate you must use the three letter code "GIS" when you request a room.

Secondary Hotel: Special Conference Rate Not Available

Marriott Charleston Town Center
200 Lee Street
Charleston, WV 25301
304-345-6500
304-353-3722 fax

Hotel Information

\$101.00 + Tax for Single or Double

Airport Information

Yeager Airport - CRW is one of the most passenger friendly airports in the nation and a 5 and ½ mile drive to the Embassy Suites Hotel.

Shuttle Services

WVDOT check in desk will be located in the baggage claim area. Please see the representative at the table or call from the Embassy Suites phone to coordinate your transportation. Shuttle service is free.

GIS in Transportation Symposium 2010



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 2010

[Hussein El Khansa](#)

West Virginia DOT

Building 5, 8th Floor 1900

Kanawha Blvd. East

Charleston, WV 25305

(304) 558-9657

hussein.s.elkhansa@wv.gov