

# Final Program



**The Many Faces of GIS**

Rapid City ~ March 28 - 31

Seventeenth Annual

## ***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 29-31, 2004**

### **Workshops – March 28, 2004**

**Best Western Ramkota Hotel and Conference Center  
Rapid City, South Dakota**

Co-Sponsored by:

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American Association of State Highway and  
Transportation Officials



Highway Engineering  
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U.S. Department  
of Transportation  
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For the most current news about this symposium, click on [www.GIS-T.org](http://www.GIS-T.org)

## Conference Chair

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## Moderator Chair

### [James Brown](#)

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The seventeenth annual GIS-T Symposium - *The Many Faces of GIS* - provides a forum for professionals interested in the design and use of Geographic 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 28, 2004, and three full days of conference activity, March 29-31, 2004.

## GIS-T 2004 PLANNING COMMITTEE

Diane Pierzinski, Chair

Debra Alfonso  
Michigan DOT

Larry Miller  
AASHTO

Nancy Armentrout  
Maine DOT

David Moyer  
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Brian Logan  
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Frank Winters  
New York DOT

Check [WWW.GIS-T.ORG](http://WWW.GIS-T.ORG) for the most current information

# GENERAL SCHEDULE

- The **TIME** column is divided into 30-minute increments. **Not to scale.**
- Sessions begin at the time shown on the line at the top of their time blocks. For example, on Monday, the Keynote Speaker session begins at 8:30, and lasts until 10 AM.

**Saturday, 3/27      5 - 7pm- Early Bird Registration**

TIME	Sunday, 3/28	Monday, 3/29	Tuesday, 3/30	Wednesday, 3/31	
7:00 AM	<b>Registration</b> Continental Breakfast Sheridan Room	<b>Registration Exhibits Open</b> Continental Breakfast Rushmore Room	<b>Registration Exhibits Open</b> Continental Breakfast Rushmore Room	<b>Registration Exhibits Open</b> Continental Breakfast Rushmore Room	
8:00	<b>Morning Workshops</b> 1. Temporal Considerations for GIS-T 2. NCEES Model Law for Surveying: Changes Affecting the GIS/LIS Community 3. Use of GIS within Environmental Streamlining and Stewardship 4. Geospatial One-stop in Transportation  Breaks at instructors' discretion	<b>Welcome and Introductions</b>  <b>Keynote Speaker</b> William J. Craig, Ph. D.	<b>Panel Discussion</b>  <b>Working Together Better: Public Sector and Vendors</b>  Moderator: Tammy Goorman, Colorado DOT	<b>Panel Discussion</b>  <b>The Many Faces of GIS: The Diversity of GIS Applications in Transportation</b>  Moderator: Ron Cihon, Washington State DOT	
8:30				<b>Next Host State Presentation</b>	
9:30				<b>Awards</b>	
10:00			<b>Break</b>	<b>Break</b>	<b>Break</b>
10:30		<b>State Summary &amp; Roll Call of States</b>	<b>Session 3</b> 1. Iowa DOT 2. GIS Data Warehousing 3. Spatial Analysis 4. Data Model	<b>Session 6</b> 1. Colorado DOT 2. Data Collection 3. Web Portal 4. LRS	
12:00 PM	<b>Lunch – Workshop Attendees Only</b> Sheridan Room	<b>Lunch</b> Rushmore Room	<b>Lunch</b> Rushmore Room	<b>Exhibits Close</b>  <b>Lunch</b> Rushmore Room	
1:00	<b>Afternoon Workshops</b> 1. GIS and Safety Management Systems 2. Are you Certifiable? 3. LIDAR & Hyperspectral Imagery for Environment & Corridor Planning 4. Good Cartographic Display Design For GIS Users  Breaks at instructors' discretion	<b>Session 1</b> 1. Texas DOT 2. GPS 3. Asset Management 4. Transit	<b>Session 4</b> 1. Transportation Planning 2. Road Condition Reporting 3. ITS 4. Data Integration	<b>Session 7</b> 1. Technologies 2. HPMS 3. Environment & Transportation 4. Travel Behavior	
1:30					
3:00			<b>Break / Technical Tour</b>	<b>Break</b>	<b>Break</b>
3:30			<b>Session 2</b> 1. Organizational Issues 2. GeoEngineering 3. Tools 4. Routing	<b>Session 5</b> 1. Transportation Planning 2. Web GIS 3. Remote Sensing 4. Data Integration	<b>Session Wrap-Up</b> Come join us for a debriefing of this year's symposium and planning for the next. <b>Refreshments Provided!</b>

# GENERAL SCHEDULE

## (Evenings)

4:30			<b>Tuesday Night Social</b> <b>Mount Rushmore</b>  <b>Exhibits Close</b>	<b>End of Conference</b>
5:00	<b>Break</b>	<b>Poster Session</b>		
5:30	<b>Exhibits Open</b> <b>Vendor Reception and</b> <b>Vendor Showcases</b>	<b>Vendor Reception</b> Rushmore Room		
6:00				
	<b>Map Gallery</b> Rushmore Room			
8:00	<b>Exhibits Close</b>	<b>Exhibits Close</b> <b>Birds of a Feather</b>		

## GIS-T 2004 Workshops – Sunday, March 28

	<b>Workshop Name</b>	<b>Instructor(s)</b>	<b>Time</b>	<b>Room</b>
1.1	<b>Temporal Considerations for GIS-T</b>	Tom Ries and Scott Lueck GeoAnalytics, Inc.	8 am- Noon	Sylvan #2
1.2	<b>NCEES Model Law for Surveying: Changes Affecting the GIS/LIS Community</b>	James Plasker ASPRS	8 am- Noon	Sylvan #1
1.3	<b>Use of GIS within Environmental Streamlining and Stewardship</b>	Ben Williams FHWA Resource Center	8 am- Noon	Legion #1
1.4	<b>Geospatial One-stop in Transportation Interface</b>	Mark Bradford, BTS, and Paul Scarponcini, Bentley Systems	8 am- Noon	Legion #2
2.1	<b>GIS and Safety Management Systems</b>	Jerry Dildine Nevada DOT	1 -5 pm	Sylvan #2
2.2	<b>Are you Certifiable?</b>	James Plasker, ASPRS, and Al Butler, MilePost Zero	1 -5 pm	Sylvan #1
2.3	<b>LIDAR &amp; Hyperspectral Imagery for Environment &amp; Corridor Planning</b>	Karen Schuckman, Earth Data Technologies, and Dr. Charles O'Hara, Mississippi State Univ.	1 -5 pm	Legion #1
2.4	<b>Good Cartographic Display Design For GIS Users</b>	Joel Morrison The Ohio State University Center for Mapping, and Barbara Battenfield University of Colorado	1 -5 pm	Legion #2

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## **GENERAL SESSIONS - SUNDAY, MARCH 28**

### **MAP GALLERY**

This year the GIS-T Symposium is proud to present a new feature - The Map Gallery. The Map Gallery will display the Official State Highway Map submitted by each State. Attendees will be able to view maps for the duration of the Symposium. Come wander through and see what features States present on their official map.

### **VENDOR RECEPTION - EXHIBITS OPEN (SUNDAY 5:30 PM TO 8:00 PM)**

The Exhibit Hall opens on Sunday evening at 5:30 pm with a reception for all Symposium attendees and guests. The vendor area will be open daily starting at 7:00 am and host a continental breakfast. On Monday, Symposium participants are welcome to attend another reception, also starting at 5:30 pm. The Exhibit Hall will close at 8:00 pm on Sunday and Monday, and on 4:30 pm on Tuesday. Exhibits end on Wednesday at noon.

## GENERAL SESSIONS - MONDAY, MARCH 29

### WELCOME TO THE GIS-T SYMPOSIUM

**Monday 3/29 – 8:00 – 8:30 am Sheridan/Pactola**

**Dennis Landguth**

Secretary of the South Dakota Department of Transportation

Dennis Landguth is the Secretary of the South Dakota Department of Transportation. He is a native South Dakotan with his roots starting with his family moving to the Black Hills during the 1876 gold rush. He and his wife, Susan, have lived in Rapid City since 1965. His passion is fly fishing.

Landguth graduated from the South Dakota School of Mines & Technology in 1970 with a degree in Civil Engineering. He is a 35-year veteran of state government, starting as a weigher in 1965 to his present position of Secretary for the Department of Transportation.

Landguth leads a department that oversees the state highway system, air, rail, and transit activities statewide. The department has oversight of more than 7,800 miles of roads, more than 1,000 employees, and an annual operating budget of nearly \$400 million.

He is a registered professional engineer and land surveyor in the state of South Dakota. He serves on the Citizens Task Force for Curriculum at the South Dakota School of Mines & Technology in Rapid City and is on various committees relating to the highway industry.

### KEYNOTE SPEAKER

**Monday 3/29 – 8:30 – 9:30 am Sheridan/Pactola**

**William J. Craig**

Associate Director of the Center of Urban & Regional Affairs at the University of Minnesota  
Co-Director of the University's MGIS program - Masters of Geographic Information Science.

Dr. William J. Craig is the lead author on the GIS Code of Ethics developed by URISA. The URISA ethics document builds on his 1993 article looking at codes from dozens of other professional organizations. His most recent work is about White Knights of the Spatial Digital Infrastructure, looking at GIS professionals who live by a code of honor.

Dr. Craig is associate director of the Center of Urban & Regional Affairs at the University of Minnesota. He is also co-director of the University's MGIS program - Masters of Geographic Information Science. He has served as president of URISA, UCGIS (University Consortium for Geographic Information Science), member of the Mapping Science Committee, National Academy of Sciences, and past chair of the National Academy of Sciences. He is also a member of the Minnesota Governor's Council on Geographic Information, and immediate past chair of the MetroGIS Coordinating Committee. Craig holds a Ph.D. in geography from the University of Minnesota.

## GENERAL SESSIONS - MONDAY, MARCH 29

### STATE SUMMARY / ROLL CALL OF STATES

**Monday 3/29 – 10:30 – 12:00 noon**      **Sheridan/Pactola**

Each year the AASHTO GIS-T Symposium conducts a state survey to determine the general status of GIS in DOTs, the changes that have occurred over time, and trends. **Bruce Spear**, of FHWA, conducted this survey and has completed the annual summary report on the state of GIS-T in the state transportation agencies. The registration packet contains this report.

The Roll Call of States will introduce each state's delegates. **Dick Genrich's** Power Point presentation will give the audience a short summary of each state 's Recent Project(s)/Application(s) and Issues they are interested in. Following the states will be the Canadian provinces and other participants.

### TECHNICAL TOUR (MONDAY 3:00 PM TO 5:00 PM)

One Technical Tour will be offered for the Rapid City metro area to see GIS and geographic data in action. Limited space is available for this tour, so you must reserve your space at on-site registration Saturday, Sunday or Monday morning. Transportation will be provided. ***Buses will depart from 3:30 from outside the registration lobby for the technical tour.***

Horizons, Inc. provides innovative geospatial technologies to meet the increasingly sophisticated needs of its clients. Service "from the ground up" includes survey, aerial photography, LiDAR, thermal, Airborne GPS, inertial technology, GIS development, topographic mapping and orthophotography. Horizons is equipped and experienced in providing service to meet the needs of a diverse client base including environmental, land development, transportation, utilities, municipal GIS, hydrology and mining. The tour will focus on Horizons' LiDAR and imaging capabilities for transportation applications. Included will be demonstrations of ortho rectification, data formats and deliverables.

**Tour Hosts:** David Holm, Technical Representative, and Mary Bosworth, LiDAR Production Manager

### POSTER SESSION (MONDAY 5:00 PM TO 8:00 PM)

The GIS-T Symposium provides the opportunity for attendees to display posters showcasing their work during the Symposium. This session starts on Monday at 5:00 pm and a symposium attendee representing each poster will be available to answer questions. This is an opportunity to share techniques and applications with peers in the transportation GIS community. Each poster is evaluated by a panel of judges, and awards are given for each category - Analytical, Software/Data Integration, and Cartographic during the Wednesday Next State Presentation Session.



# GENERAL SESSIONS - TUESDAY, MARCH 30 AND WEDNESDAY, MARCH 31

## PANEL DISCUSSION

### Working Together Better: Public Sector and Vendors

**Tuesday 3/30 – 8:00 – 10:00 am**      **Sheridan/Pactola**

*Moderator: Tammy Goorman, Colorado Department of Transportation*

*Panelists: Brian Logan - Kansas Department of Transportation*

*Patsy Horton - Rapid City Area MPO*

*Bill Campbell - Farragut Systems*

*Matt Erker - Carter-Burgess*

Hear what companies that do business with public sector really think about their best and worst clients. Hear what public sector project managers think about their best and worst consultants. Panel members include public sector and vendors who are going to talk about their experiences that defined a good and not so good vendor-client relationship. Do they just happen – a fortunate coincidence of objectives and qualities – or are they developed as the partners work together? Are there certain “best practices” that lead to good client-vendor relationships?

## TUESDAY NIGHT SOCIAL - *MOUNT RUSHMORE*

This epic sculpture features the faces of four exalted American presidents: George Washington, Thomas Jefferson, Theodore Roosevelt, and Abraham Lincoln. South Dakota's Black Hills provide the backdrop for Mount Rushmore, the world's greatest mountain carving. These 60-foot high faces, 500 feet up, look out over a setting of pine, spruce, birch, and aspen in the clear western air. There will be ample time to visit the Avenue of Flags, gift shop, and Lincoln Borglum Museum. Upon arrival cocktails will be available followed by dinner. After dinner, we will receive a visit by Teddy Roosevelt.

## PANEL DISCUSSION

### The Many Faces of GIS: The Diversity of GIS Applications in Transportation

**Wednesday 3/31 – 8:00 – 9:30 am**      **Sheridan/Pactola**

*Moderator: Ron Cihon, Washington State DOT*

Hear first-hand the diversity of uses for GIS in transportation agencies from Cartographic, CAD/GIS, ITS, and Safety Management to the integration of remotely sensed data and videolog. Panel members from the public and private sector will discuss their current and planned uses of GIS and their thoughts for the future to fully integrate GIS into the transportation persona. The GIS-T professionals will respond to these questions: What are some diverse applications of GIS that you have underway or have experienced? Has GIS reached core business functions in transportation or has this industry reached a “steady state”? Have there been missed opportunities and where can we take this technology for transportation? What are the next horizons for GIS-T?

**CONCURRENT SESSION 1**


1:30 PM MONDAY, MARCH 29

<b>1.1 Enterprise Data Integration: As Big as Texas DOT</b>		<b>Sylvan #2</b>	
1.1.1	<b>Texas GIS Architecture and Infrastructure Project: An Enterprise Experience</b>	Jim Patterson Texas DOT Austin, Texas	Phil Hancock Texas DOT Austin, Texas
1.1.2	<b>Main Street Texas: Using Geography to Integrate Data</b>	Max Wyman Terra Genesis, Inc Chandler, AZ	Paul Abbott Terra Genesis, Inc Chandler, AZ
1.1.3	<b>Managing Spatial Data within a Concurrent Environment</b>	Paphun Wangmutitkul Terra Genesis, Inc. Chandler, AZ	Max Wyman
<b>1.2 Global Positioning Systems</b>		<b>Sylvan #1</b>	
<b>Moderator: Tom Ries, GeoAnalytics, Inc.</b>			
1.2.1	<b>Mobile GIS Applications Supporting the Transportation Planning and NEPA Processes</b>	Elizabeth Stolz PBS&J Greenwood Village, CO.	Melisa Caric PBS&J Greenwood Village, CO.
1.2.2	<b>Field Digital Data Collection - Realizing the Benefits for DOTs</b>	Mike Wing Intergraph Mapping and Geospatial Solutions Huntsville, Alabama	
1.2.3	<b>Mining GPS logs to acquire transportation information: methods, accuracy and cost</b>	Val Noronha VITAL Santa Barbara, Calif.	
<b>1.3 Asset Management</b>		<b>Legion #1</b>	
<b>Moderator: Bruce Aquila, Intergraph Corp.</b>			
1.3.1	<b>Video Based GASB34 Asset Tracking</b>	Jason Dong Enterprise Information Solutions, Inc. Columbia, MD	
1.3.2	<b>Mapping the National Bridge Inventory to a Common Base Network</b>	Steve Lewis USDOT/BTS Washington, DC	
1.3.3	<b>The Many Faces of GIS in FHWA's Highway Economic Requirements System for States (HERS-ST) and Freight Analysis Framework (FAF)</b>	Mohammed Alam Battelle Memorial Institute Columbus, Ohio	
<b>1.4 Transit</b>		<b>Legion #2</b>	
<b>Moderator: Tony Pietropola, GeoDecisions</b>			
1.4.1	<b>GIS-T and Travel Demand Modeling: The Atlanta Regional Commission Approach</b>	Guy Rousseau Atlanta Regional Commission Atlanta, Georgia	
1.4.2	<b>Structured Public Involvement in Transit-Oriented Development Design</b>	Joel Brumm KY Trans. Center Lexington, KY	Ted Grossardt Keiron Bailey Michaele Pride-Wells KY Trans. Center Lexington, KY
1.4.3	<b>Providing Map-Based Passenger Information in Urban and Rural Areas: A Maine to Boston Case-Study</b>	Andrew Kasper Cambridge Systematics Inc Cambridge, MA	

**CONCURRENT SESSION 2**

3:30 PM MONDAY, MARCH 29

<b>2.1</b>	<b>Organizational Issues</b>			<b>Sylvan #2</b>
	<b>Moderator: Al Butler, MilePost Zero</b>			
2.1.1	 <b>The South Dakota DOT GIS Plan: Utilizing Innovative and Practical Processes to Effectively Determine and Present Results</b>	Dennis Johnson South Dakota DOT Pierre, SD	Don Kiel GeoDecisions State College, Penn	
2.1.2	<b>GIS and Middleware: Two Technologies, One Solution -- Everybody Gets What They Need</b>	Mitch Stephens Intergraph Solutions Group Lawrenceville, Georgia	Pat Broussard	
2.1.3	<b>The Role of GIS in Homeland Security</b>	Louis Schoolkate GeoAnalytics, Inc. Madison, WI		
<b>2.2</b>	<b>GeoEngineering</b>			<b>Sylvan #1</b>
	<b>Moderator: Joe Bima, Intergraph Corp.</b>			
2.2.1	<b>I'm an Engineer. Why do I need GIS?</b>	Randall D. Tardy, PE Bentley Civil Madison, Alabama		
2.2.2	<b>Cross platform CAD-GIS integration: Automating CAD workflows and GIS technologies to support structural inspection and decision support system on Boston's Central Artery (CA/T) Project.</b>	David Weinstein Geonetics Boston, Mass.		
2.2.3	<b>GIS to Design AND BACK to GIS - the Ultimate Roundtrip?</b>	Ted Johnson Bentley Systems Exton, PA		
<b>2.3</b>	<b>Tools</b>			<b>Legion #1</b>
	<b>Moderator: Renee Vevea, Horizons, Inc.</b>			
2.3.1	<b>Nebraska Enterprise Centerline Transportation Attributes Resources (NECTAR)</b>	Richard L. "Dick" Genrich NE Dept of Roads Lincoln, NE	Michael Niedermeyer NE Dept of Roads Lincoln, NE	
2.3.2	<b>Rapid Analysis and Reporting of Constraints in the Corridor Planning Process</b>	Jeff Scarborough PBS&J Houston, Texas		
2.3.3	<b>GIS-Based HPMS Data Analysis Tool</b>	Chunguang (Wayne) Zhang Wilbur Smith Associates Atlanta, GA		
<b>2.4</b>	<b>Routing</b>			<b>Legion #2</b>
	<b>Moderator: Tim Quinn, RouteMatch Software</b>			
2.4.1	<b>Using GIS to Generate Mutually Exclusive Service Areas Linking Travel On and Off a Network</b>	Christopher Upchurch Arizona State University Mesa, AZ	Michael Kuby Michael Zoldak Anthony Barranda	
2.4.2	 <b>Maintaining Enterprise Application Compatibility With Evolving GIS Data</b>	Daniel Vogen C.W. Beilfuss & Assocs. Downers Grove, IL	Anselem (Hal) Rumpca South Dakota DOT Pierre, South Dakota	
2.4.3	<b>Meta-Networks: Multi-dimensional Real World Objects for the Next Generation Transportation Geography</b>	Dr. John Sutton Cambridge Systematics Inc Chevy Chase, MD		

The  symbol indicates a session from South Dakota, the Host State.

**CONCURRENT SESSION 3**


10:30 AM TUESDAY, MARCH 30

<b>3.1</b>	<b>Iowa DOT: The Light at the End of the Tunnel: Daylight or Train Light?</b>	<b>Sylvan #2</b>	
3.1.1	LRS Design – Using the NCHRP 20-27 Data Model	William Schuman Iowa DOT Ames, Iowa	
3.1.2	Statewide Partnering – Including Local Governments in Data Creation and Maintenance		
3.1.3	The LRS Over Time - Temporal and Change Management in the LRS Database		
<b>3.2</b>	<b>GIS Data Warehousing</b>	<b>Sylvan #1</b>	
	<b>Moderator: Bobby Harris, bd Systems, Inc.</b>		
3.2.1	Update on Geospatial One-stop Activities at the Bureau of Transportation Statistics	Mark Bradford USDOT/BTS Washington, DC	Steve Lewis USDOT/BTS Washington, DC
3.2.2	Lessons Learned from the development by committee of the GeoSpatial One-Stop Transportation Model for Airports	Dejan Damjanovic Space Imaging LLC Thornton, Colo.	
3.2.3	Stepwise Integration of Alaska's Highway Analysis System with GIS	Dr. John Sutton Cambridge Systematics Chevy Chase, MD	Jack Stickel Alaska DOT Juneau, AK
<b>3.3</b>	<b>Spatial Analysis</b>	<b>Legion #1</b>	
	<b>Moderator: Allen Ibaugh, Space Imaging</b>		
3.3.1	Updating Performance Measures of Minnesota's Interregional Corridor System	Banette Kritzky MN Dept of Transportation St. Paul, MN	
3.3.2	Identification of Regional Subcenters Using Spatial Data Analysis for Estimating Traffic Volume	Dr. Fang Zhao FL Int'l University Miami, Florida	Nokil Park FL Int'l University Miami, Florida
3.3.3	Spatio-Temporal Relationship between Land Use and Transportation	Mr. Soon Chung FL Int'l University Miami, Florida	Dr. Fang Zhao FL Int'l University Miami, Florida
<b>3.4</b>	<b>Data Model</b>	<b>Legion #2</b>	
	<b>Moderator: David Kingsbury, Intergraph Corp.</b>		
3.4.1	Developing New Hampshire's Transportation GIS Data Model	Kirk A. Weaver Michael Baker Jr., Inc. Princeton, NJ	
3.4.2	A Data Model for Distributed Data Management	Matt Erker Carter + Burgess Denver, CO	Philip Lidov, Brian Hoeschen Carter + Burgess Denver, CO
3.4.3	Mapping the Underground City - the NY City Transit Subway Integrated Core GIS	Daniel McHugh NY City Transit Brooklyn, NY	Bruce Aquila Intergraph Corp.

**CONCURRENT SESSION 4**

1:30 PM TUESDAY, MARCH 30

<b>4.1</b>	<b>Transportation Planning</b>			<b>Sylvan #2</b>
	<b>Moderator: Sean Davies, Intergraph Corp.</b>			
4.1.1	<b>An Automated Information Management System to Support Transportation and Growth Management Analyses</b>	Allen Ibaugh Space Imaging Orlando, FL	Simone Babb Florida Dept of Transportation	
4.1.2	<b>Developing a Desktop GIS Application to Manage, Control, and Execute a Transportation and Economic Analysis Model</b>	Julie Colby Cambridge Systematics Cambridge, MA		
4.1.3	<b>Using GIS Spatial Data to Develop Virtual-Reality Transportation Applications</b>	Kai Han University of Manitoba Winnipeg, Manitoba, Canada	Scott Minty, Alan Clayton	
<b>4.2</b>	<b>Road Condition Reporting</b>			<b>Sylvan #1</b>
	<b>Moderator: Connie Gurchiek, GeoDecisions</b>			
4.2.1	<b>Map Based Regional Transit Information on the Web – The Bay Area 511 Transit Experience</b>	Nisar Ahmed bd Systems Spatial Division Oakland, CA	Emilio Escudero Metropolitan Transportation Commission	
 4.2.2	<b>The Evolution of the South Dakota Highway Needs and Analysis Report: An ESRI approach</b>	Terry Erickson South Dakota DOT Pierre, SD	Ryan Budlong, ESRI Minneapolis Minneapolis, MN	
 4.2.3	<b>Development &amp; Deployment of a Regional Road and Weather Information Supporting 511 Traveler Services</b>	Leon F. Osborne Univ. of North Dakota Reg. Weather Info Center Grand Forks, ND	David Huft South Dakota DOT Pierre, SD	
<b>4.3</b>	<b>Intelligent Transportation Systems</b>			<b>Legion #1</b>
	<b>Moderator: Mark Sarmiento, FHWA</b>			
4.3.1	<b>Statewide ITS Deployments using GIS and Web-based Technologies</b>	Tim Quinn RouteMatch Software Atlanta, GA		
4.3.2	<b>National Standards Compliance in a Working Transportation Management Center</b>	Professor Maggie Cusack New York State DOT White Plains, NY	Dr. Catherine Lawson Dr. Peter Duchessi Dr. Jagdish Gangolly	
4.3.3	<b>Use of GIS to Locate Resources for Clearing Highway Incidents: Bay Area Incident Response System (BAIRS) Experience</b>	Diane Pierzinski California DOT Sacramento, CA		
<b>4.4</b>	<b>Data Integration</b>			<b>Legion #2</b>
	<b>Moderator: Jay Adams, Oklahoma DOT</b>			
4.4.1	<b>Creating a Transportation Spatial Database with true interoperability between the ArcGIS and Microstation Environments</b>	Michael R Deamer Enterprise Information Solutions Columbia, MD	Thomas Moen	
4.4.2	<b>Integration of Local Roads into a Statewide GIS Layer</b>	Tammy Goorman Colorado DOT Denver, CO		
4.4.3	<b>Using VBA/ArcObjects to Develop a New Statewide Linear Referenced Geodatabase From Legacy Formats</b>	Michael Eismeier Enterprise Information Solutions, Inc. Columbia, MD		

The  symbol indicates a session from South Dakota, the Host State.

**CONCURRENT SESSION 5**


3:30 PM TUESDAY, MARCH 30

<b>5.1</b>	<b>Transportation Planning</b>			<b>Sylvan #2</b>
	<b>Moderator: Bruce Spear, FHWA</b>			
5.1.1	<b>Distributed Computation in Planning of Transportation</b>	Germán Bravo Universidad de Los Andes Bogotá, Colombia		
5.1.2	<b>The Geographies of Cyberspace</b>	Professor Maggie Cusack New York State DOT White Plains, NY		
<b>5.2</b>	<b>Web GIS</b>			<b>Sylvan #1</b>
	<b>Moderator: Jeffrey A. Tomlinson, Intergraph Corp.</b>			
5.2.1	<b>PENNDOT's Roadside Spray Future is with RoSA</b>	Joe Demko Pennsylvania DOT Harrisburg, PA	Nate Reck GeoDecisions Harrisburg, PA	
5.2.2	<b>Development of Web-Based GIS Tools for the Management of Transportation Infrastructure</b>	Ramanathan Sugumaran University of Northern Iowa Iowa		
<b>5.3</b>	<b>Remote Sensing</b>			<b>Legion #1</b>
	<b>Moderator: Dan Mcquarrie, Applanix Corporation</b>			
5.3.1	<b>Enterprise Image &amp; DTM Management and Distribution Solutions</b>	Joe Bima Intergraph Mapping and Geospatial Solutions Parkville, MO		
5.3.2	<b>GIS and Remote Sensing Support for Evacuation Analysis</b>	Demin Xiong Oak Ridge National Laboratory Knoxville, TN		
<b>5.4</b>	<b>Data Integration</b>			<b>Legion #2</b>
	<b>Moderator: Vidya Mysore, Florida DOT</b>			
5.4.1	<b>Minnesota P274 Transportation Information System Conversion Project</b>	Jim Tucker, P.E., PMP Bentley Civil Englewood, CO		
5.4.2	<b>Using GIS to Support Multi-year Pavement MR&amp;R Need Analysis</b>	Yichang (James) Tsai, Bo Gao GA Institute of Technology Atlanta, GA	JT Rabun, Bryant Poole Georgia DOT	

**CONCURRENT SESSION 6**

10:30 AM WEDNESDAY, MARCH 31

<b>6.1</b>	<b>Colorado DOT's Geodatabase Migration Project</b>		<b>Sylvan #2</b>
6.1.1	The Migration Project – Goals & Stages	Lou Henefeld Colorado DOT	Al Butler Farragut Systems, Inc. Lafayette, CO
6.1.2	The Data Model – Logical and Physical Design	Denver, Colorado	
6.1.3	Broader Applicability, Evaluation, and Future		
<b>6.2</b>	<b>Data Collection</b>		<b>Sylvan #1</b>
	<b>Moderator: John Sutton, Cambridge Systematics Inc</b>		
6.2.1	Using GIS and SLD Technology for a New Hampshire Feature Inventory	Dennis Fowler, P.E. New Hampshire DOT Concord, NH	Kirk A. Weaver Michael Baker Jr., Inc. Princeton, NJ
6.2.2	Video Based Asset Data Collection at NJDOT	Richard A. Robyak Michael Baker Jr., Inc. Princeton, NJ	Greg Orvets Lambda Tech Int'l.
6.2.3	 LIDAR Laser Mapping for Highway & Transportation Planning	Jason Mann Horizons, Inc. Rapid City, South Dakota	
<b>6.3</b>	<b>Web Portal</b>		<b>Legion #1</b>
	<b>Moderator: Mike Wing, Intergraph Corp.</b>		
6.3.1	Small State Big Visions	Don Burris Delaware DOT Dover, Delaware	Brian Smith GeoDecisions  Tom Gergel Bentley Systems
6.3.2	GIS Exposed: Exposing GIS data using IT standard Reporting Technologies Integration, Data Mining, and ad hoc reporting technologies, a Crash Records Case Study	Matt von Wahle Geonetics Boston, MA	
6.3.3	Enterprise Web Portals - A Successful Reality for Many DOTs	David Kingsbury Intergraph Mapping and Geospatial Solutions Huntsville, AL	Mike Wing
<b>6.4</b>	<b>Linear Referencing Systems</b>		<b>Legion #2</b>
	<b>Moderator: David Loukes, GeoPlan</b>		
6.4.1	Standards for Linear Referencing	Paul Scarponcini Bentley Systems., Inc. Littleton, CO	
6.4.2	Managing Multiple Linear Referencing Methods for Highway Assets: from Field Device to Office Back-End to use Desktop	Bobby Harris bd Systems, Inc. Silver Spring, MD	
6.4.3	Using and Maintaining A Flexible, User-Friendly Linear Referencing System for Locally Developed, Spatially Accurate Roadway Alignments	Terry Bills bd Systems, Inc. Torrance, CA	Kenneth Bennett bd Systems, Inc. Costa Mesa, CA

The  symbol indicates a session from South Dakota, the Host State.

**CONCURRENT SESSION 7**

1:30 PM WEDNESDAY, MARCH 31

<b>7.1</b>	<b>Technologies</b>			<b>Sylvan #2</b>
<b>Moderator: Tom Clemons, Bentley Systems</b>				
7.1.1	<b>Grid Analysis for Hydrologic Modeling</b>	Sean T. Davies Intergraph Corporation Charlotte, NC		
7.1.2	<b>Visualization: Extravagant or Essential (in the Era of Budget Cuts.)</b>	Brad Henry URS Minneapolis, MN		
7.1.3	<b>GIS and the Other Enterprise Database</b>	Marc Kratzschmar Exor Corporation San Diego, CA		
<b>7.2</b>	<b>HPMS</b>			<b>Sylvan #1</b>
<b>Moderator: Greg Yarbrough, Wilbur Smith</b>				
7.2.1	<b>Oklahoma DOT's Answer to the HPMS Submittal Process</b>	Jay Adams Oklahoma DOT Oklahoma City, Oklahoma		
7.2.2	<b>A Web-based Transportation Performance Monitoring and Assessment System</b>	Terry Bills bd Systems, Inc. Torrance, CA		
7.2.3	<b>A Re-engineered Roadway Inventory System Using GPS/GIS and Image Pattern Recognition Technologies</b>	Yichang (James) Tsai Georgia Institute of Technology Atlanta, Georgia	James Hullet Georgia DOT Atlanta, Georgia	
<b>7.3</b>	<b>Environment &amp; Transportation</b>			<b>Legion #1</b>
<b>Moderator: Ben Williams, FHWA</b>				
7.3.1	<b>Improved Environmental Review for Project Scoping with Washington State Department of Transportation's Environmental GIS Workbench</b>	Elizabeth L. Lanzer Washington State Department of Transportation Olympia, WA	Mark G. Bruskiwicz	
7.3.2	<b>Streamlining Environmental Assessment through GIS</b>	Max Farrell Arkansas State Highway and Transportation Dept. Little Rock, Arkansas		
7.3.3	<b>Florida's Environmental Screening Tool: Changing Business as Usual</b>	Peter McGilvray Florida DOT Tallahassee, Florida		
<b>7.4</b>	<b>Travel Behavior</b>			<b>Legion #2</b>
<b>Moderator: Ed Kelley, Nebraska DOT</b>				
7.4.1	<b>GIS-T Integration with the Atlanta Regional Commission (ARC) Congestion Management (CMS) Information System</b>	Guy Rousseau Atlanta Reg. Comm. Atlanta, GA	Chunguang (Wayne) Zhang Wilbur Smith Associates Atlanta, GA	
7.4.2	<b>Building An Enterprise Geodatabase for Transportation Planning and Modeling</b>	Yushuang Zhou Cambridge Systematics, Inc. Oakland, CA	Jeff Frkonja, Andy Norton Puget Sound RC Seattle, WA	
7.4.3	<b>Transit Walk Accessibility – Variability with Respect to Trip Purposes and Income</b>	Dr. Fang Zhao FL Int'l Univ. Miami, Florida	Mr. Sheng Yang FL Int'l Univ. Miami, Florida	





## VENDOR EXHIBITS

### Rushmore Room

There will be 39 booths and 4 days of exhibits as part of the symposium. The vendor exhibit will include 2 receptions. This is a great opportunity for each exhibitor to get to know the transportation customer. The exhibits start on Sunday, March 28 at 5:30 pm with the first vendor reception and will end on Wednesday, March 31 at 12:00 pm. For more details, such as booth numbers and locations, see the handout in your registration packet.

### VENDOR LIST\*

Company Name	Website
Applanix Corporation	<a href="http://www.applanix.com">www.applanix.com</a>
bd Systems, Inc. Spatial Division	<a href="http://www.bdspatial.com">www.bdspatial.com</a>
Bentley Systems	<a href="http://www.bentley.com">www.bentley.com</a>
Caliper Corporation	<a href="http://www.caliper.com">www.caliper.com</a>
Cambridge Systematics, Inc.	<a href="http://www.camsys.com">www.camsys.com</a>
Enterprise Information Solutions, Inc.	<a href="http://www.enterinfo.com">www.enterinfo.com</a>
ESEA	<a href="http://www.esea.com">www.esea.com</a>
ESRI	<a href="http://www.esri.com">www.esri.com</a>
Exor Corporation	<a href="http://www.exorcorp.com">www.exorcorp.com</a>
Farragut Systems Inc.	<a href="http://www.farragut.com">www.farragut.com</a>
Genivar	<a href="http://www.genivar.com">www.genivar.com</a>
Geo-3D	<a href="http://www.geo-3d.com">www.geo-3d.com</a>
GeoAnalytics, Inc.	<a href="http://www.geoanalytics.com">www.geoanalytics.com</a>
GeoDecisions	<a href="http://www.geodecisions.com">www.geodecisions.com</a>
Geonetics	<a href="http://www.geonetics.com">www.geonetics.com</a>
Hansen	<a href="http://www.hansen.com">www.hansen.com</a>
Hewlett Packard	<a href="http://www.hp.com">www.hp.com</a>
Horizons Inc.	<a href="http://www.horizonsinc.com">www.horizonsinc.com</a>
Intergraph	<a href="http://www.ingr.com">www.ingr.com</a>
Mandli	<a href="http://www.mandli.com">www.mandli.com</a>
MapText, Inc.	<a href="http://www.maptext.com">www.maptext.com</a>
Meteorlogix	<a href="http://www.meteorlogix.com">www.meteorlogix.com</a>
Michael Baker Jr., Inc.	<a href="http://www.mbakercorp.com">www.mbakercorp.com</a>
Roadware Group Inc.	<a href="http://www.roadware.com">www.roadware.com</a>
Science Applications International	<a href="http://www.saic.com">www.saic.com</a>
Space Imaging	<a href="http://www.spaceimaging.com">www.spaceimaging.com</a>
Wilbur Smith	<a href="http://www.wilbursmith.com">www.wilbursmith.com</a>

\*Subject to change



## The Evolving Frontier

1987	Tempe, Arizona
1989	Orlando, Florida
1990	San Antonio, Texas
1991	Orlando, Florida
1992	Portland, Oregon
1993	Albuquerque, New Mexico
1994	Norfolk, Virginia
1995	Sparks, Nevada
1996	Kansas City, Missouri
1997	Greensboro, North Carolina
1998	Salt Lake City, Utah
1999	San Diego, California
2000	Minneapolis, Minnesota
2001	Arlington, Virginia
2002	Atlanta, Georgia
2003	Colorado Springs, Colorado
2004	Rapid City, South Dakota 🏆
2005	Lincoln, Nebraska