

TRB Statewide Transportation Data & Information Systems Committee

Summary of Peer Exchanges:

1. Using Spatial Technologies
To Improve the Delivery of
Transportation Programs

and

2. Data Integration

May 14, 2002

Anita Vandervalk, Chair A1D09

Using Spatial Technologies To Improve the Delivery of Transportation Programs

Peer Exchange

March 23 -24, 2002, Charleston,
South Carolina

Co-Organizer: SCOP Data Task
Force

Sponsor: FHWA Planning &
Environment

Participants (Members)

- Anita Vandervalk CSI
- Rob Bostrom KTC
- Ron Vibbert MDOT
- Bill Walsek MD SHA
- Jonette Kreideweis MN DOT
- Ron Tweedie NYS
DOT (retired)
- Jim McQuirt O DOT
- Kim Hajeck TX DOT
- Jim Hall UIS
- Susan Lapham BTS
- Pat Hu ORNL

Participants (Guests)

- Ysela Llort FL DOT
- Freddie Simmons FL DOT
- Frank DeSendi Penn DOT
- Dan Widner VDOT
- Charlie Howard WS DOT
- Roger Petzold FHWA
- Chuck O'Hara MSU
- Carol Brandt BTS
- Stacy Fehlenberg EPA
- Tom Palmerlee TRB

Key Groups

- AASTHO GIS for Transportation Task Force
- SCOH Spatial Information Task Force
- SCOP Data Task Force

Questions Addressed

- Key issues affecting program delivery
- How are spatial information technologies helping to?
 - reduce program delivery timelines,
 - facilitate project consensus or
 - enhance program delivery?
- Barriers or constraints to gaining support
- Critical pieces to ensure success

Common Themes: Benefits

- Better
- Cheaper
- Faster
- Communication
 - Complex Issues
 - Diverse Audience

Common Themes

- Top Management Support
- Key Element for Higher Productivity with Fewer Staff
- “Next Level” - Better Teaming of Management & Technologists
- Essential Data From Outside Transportation

Different Organizational Scales

- Individual Projects & Applications
- “Enterprise” Systems
 - Statewide data sets served on the web to multiple desktops
 - Data sets of interest to more districts or more programs
- “The Next Level”
 - Integrate technologies to re-engineer business processes

Lack of Clear Federal Role

Organizational Capacity Building

- Best Practices
- Training
- System Interoperability
- Consensus Standards

Next Steps

- Meeting Summary Report - May, 2002
- Compilation of Benefits
- Establish Communication Mechanisms
- Share Results
- Research: Institutional Evolution of GIS

Related Events

- **Spatial Information Infrastructure for Multimodal Organizations**
 - “Using Spatial Information Technologies to Improve Project Delivery,” May 2-3, 2002, Chicago,
 - “Using Spatial Information Technologies to Improve Security, Safety and Mobility,” June 13-14, 2002, Seattle
 - “Strategies for Improving Multimodal Spatial Information Technologies,” October 22-24, 2002, Washington, DC

Related Events (cont.)

- Remote Sensing for Transportation
 - In Conjunction with the Land Satellite Conference
 - Nov 11-14, 2002
 - Denver

Integrating Highway Information

Report on the March 22-23, 2001
Transportation Research Board
Peer Exchange

TRB Sponsoring Committees

- Urban Transportation Data
- Statewide Transportation Data
- Systems Information Systems and Technology
- Spatial Data and Information Science

Support & Participation

- FHWA Provided Travel Funding
 - Office of Highway Policy Information
- BTS
- AASHTO

Participants - DOT Data

- Minnesota DOT - Jonette Kreideweis
- Consultant - Ron Tweedie
- CSI - Anita Vandervalk
- Michigan DOT - Ron Vibbert

Participants - DOT IT & GIS

- Maine DOT - Nancy Armentrout
- Kansas DOT - Ben Nelson
- Virginia DOT - Murali Rao
- Wisconsin DOT - Jeff Western

Participants - MPOs, Local & Consultants

- City of Jacksonville - Libby Clapp
- PIMA County Assn of Govts - Jim Altenstadter
- Baltimore Metro - Gene Bandy
- Geographic Paradigm - David R. Fletcher
- Traffic Safety Analysis Systems - Richard Paddock

Objectives of Peer Exchange

- Exchange ideas and experiences
- Share with other organizations
- Develop guiding principles and success factors
- Identify next steps

Data Integration Required

- Understanding the the transportation system and its interaction with other sectors
- Modern data systems are expensive and must compete for resources
- Integration of existing data sources can maximize use and understanding

Data Integration Defined

- Coordination and sharing of inputs, processes, and outputs of systems
- Dynamically linking systems where data is consistent and easily accessed, displayed, and transferred between systems
- Creating valuable information for stakeholders and business decision making processes

Integration - Management Issue

- Create the organizational culture
- Set priorities on integration efforts
- Provide the necessary support
- Ensure Quality Data

Not all Data Needs to be Integrated

- *Mission independent data* - Not appropriate
- *Interface Data* (a one way exchange) - Very limited
- *Interoperability* (a two way flow of data) - Requires coordination by both parties
- *Tightly Integrated* - Decision processes rely on multiple coordinated and accessible data sources

Guiding Principles

- Five Principles
- Guidance but not Prescriptive
- Several Success Factors
- Best Practices

I. Clear Roles & Responsibilities

- Information Management Oversight Board
- Policy and strategic direction
- Information architecture - Business goals
- *Information Systems* support organization

II. Transparent & Adaptive Technology

- Integration transparent to the user
- Easy to use tools
- Interoperable geographic referencing system
- Organize by business enterprise-level relevancy
- Look beyond your own agency

III. Define Globally, Deploy Incrementally

- Identify information needs
- Collect data once and establish stewardship close to the source
- Goals and objectives from core mission
- Incremental integration relative to business processes

IV. Balance Enterprise and Local Perspectives

- Reduced redundancy of effort
- More efficient, integrated systems
- Improved customer service
- Improved data consistency & quality
- Cross-agency trust & communication
- Enterprise-wide awareness of the broader business processes

V. Collaborate Across Institutional Boundaries

- Data is an asset of the larger enterprise
- Collect at most appropriate level by developing partnerships
- All partners understand strategic direction

Next Steps

- Opportunities to exchange ideas and information
- Promote coordination of national and federal data integration efforts
- Data integration using HPMS
- Present the principles and success factors
- University Research Program

Questions?

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