A Summary of State DOT GIS Activities

Presented at the
2004 AASHTO GIS-T Symposium
Rapid City, SD
Information Sources

- E-mail survey of state DOT GIS managers
  - All 51 State DOTs (and DC) responded in 2004
  - First time 100% response
- Results compared with prior year surveys
- Two new questions added:
  - Use of spatial data manager middleware
  - Questions you would like to see in future surveys
GIS Deployment in the DOT

- **33%** Core GIS Unit & End Users
- **49%** Enterprise GIS
- **10%** Single GIS Unit
- **8%** Individual Units
Location of GIS Unit

- Planning: 35%
- Information Services: 29%
- Engineering: 24%
- Multiple Locations: 8%
- No Official GIS Unit: 4%
GIS Budgets

- Over $1 million
- $500K to $999K
- $100K to $499K
- Under $100K
- No Report / Unknown
GIS Organization: Summary

- All but one State DOT have a recognized GIS unit.
- Continuing trend to locate GIS core staff in Information Services.
- GIS deployment strategies split between core GIS unit and enterprise GIS.
- GIS budgets in many states impacted somewhat by State fiscal cutbacks.
GIS Core Unit Staffing

- Over 20
- 11 to 20
- 6 to 10
- 5 or Less
- No Staff / Not Reporting

Years:
- 2004
- 2002
- 2001
- 1998
- 1996
GIS Staff Classifications

- IS/IT; Programmer
- GIS Professional
- Planner
- Cartographer
- Analyst
- Engineer
- Other

2004
2002
2001
2000
GIS End Users

- 500 or More
- 100 to 499
- 11 to 99
- 10 or Less
- No Report

- 2004
- 2003
- 2002
- 2001
- 2000
GIS Staff & Users: Summary

- GIS core staff has stayed relatively constant in size.
- Rapid growth in GIS use throughout the DOT.
- Decentralization of GIS applications among end-users.
- Core staff activities focus on database maintenance and integration, support and training for end users.
Current GIS Software Mix

- 4+ Vendors: 18%
- 3 Vendors: 36%
- 2 Vendors: 30%
- ESRI: 14%
- Intergraph: 2%
GIS Software: Summary

- Continued migration toward Windows operating system.
  - Some growth in DOTs using both OS
- Use of multiple GIS software packages and vendors
  - Increased market penetration for most major software packages
  - Major growth in desktop end user, and web-based software
Base Map Scales

- 1:5K or better
- 1:10K / 1:12K
- 1:24K
- 1:100K
- Multiple / Other Scales

Legend:
- Red: 2004
- White: 2002
- Light Brown: 2000
- Green: 1998
- Navy Blue: 1996
Road Network Coverage

- All Public Roads: 51%
- U.S. & State Hwys: 14%
- State & County Roads: 31%
- No Network / Unknown: 4%
Current GIS Staff Activities

Core Functions
- Web application development (35)
- Attribute data integration (12)
- Base map enhancement (19)
- LRS development (15)

Other Activities
- Videolog/Photolog integration (8)
- Migration to new DBMS (6)
- Data sharing and coordination (5)
- Migration to new GIS platform (5)
Current GIS Applications

- Road feature inventory (10)
- Highway asset management (7)
- Safety management / crash analysis (6)
- Highway project locations (6)
- Traffic incident monitoring (5)

- Road conditions / weather (5)
- State highway map / atlas (4)
- Road construction / detours (4)
- Truck permitting / routing (4)
- Environmental impact analysis (3)
GIS Activities: Summary

- Significant growth in web-based GIS
- Continued emphasis on base map enhancement and attribute data
- Broad range of applications identified:
  - Asset management and inventory
  - Visualization of features and events
  - Few complex spatial analysis applications