



# **A Summary of State DOT GIS Activities**

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Presented at the  
2007 AASHTO GIS-T Symposium  
Nashville, TN

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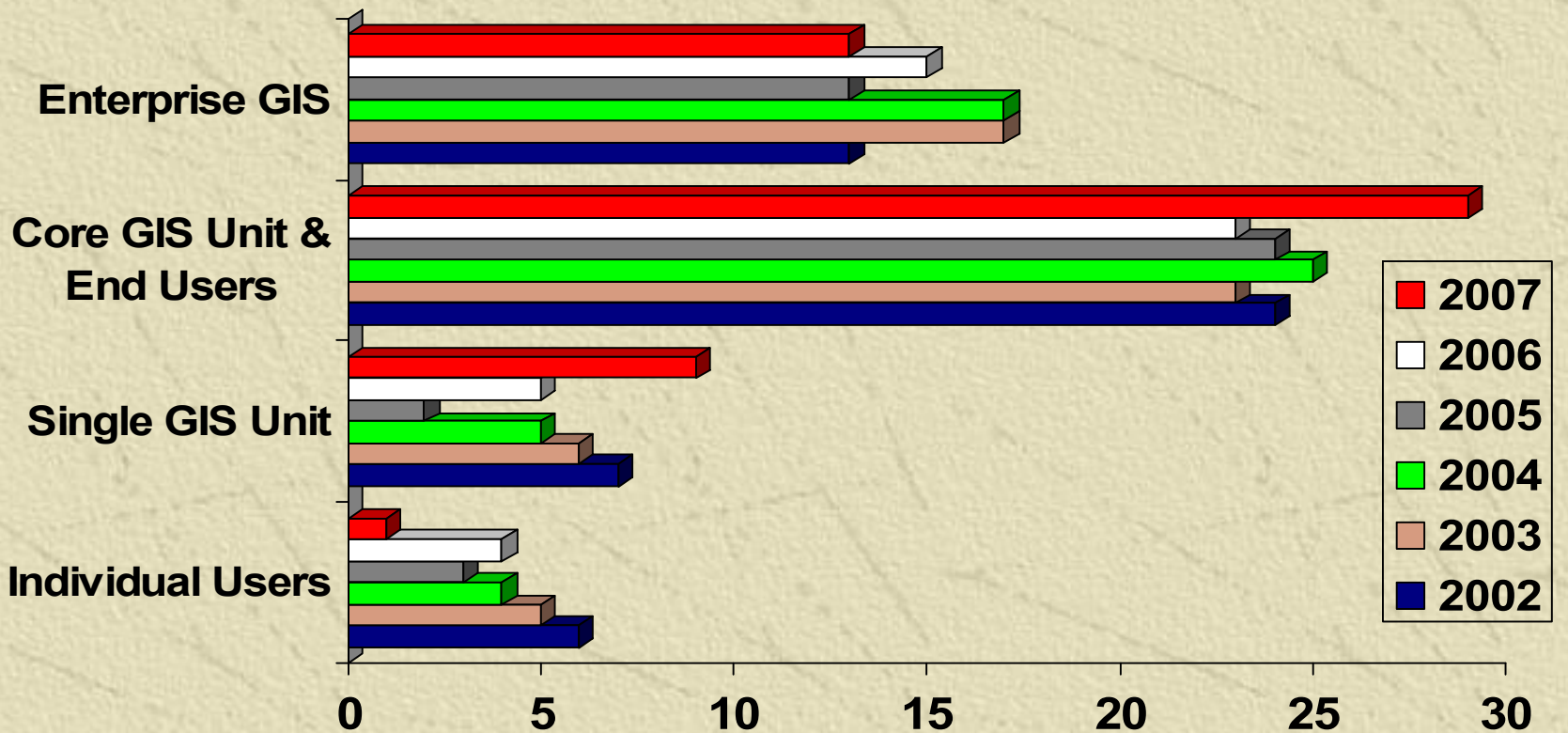
# Information Sources

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- ◆ Web-based survey of state DOT GIS managers
  - 50 State DOTs (plus DC & PR) responded
- ◆ New question added:
  - Has agency developed a GIS strategic plan?

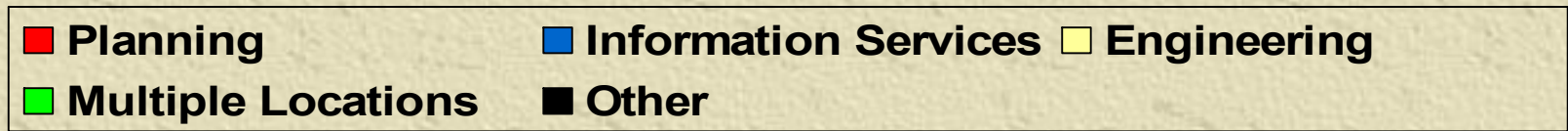
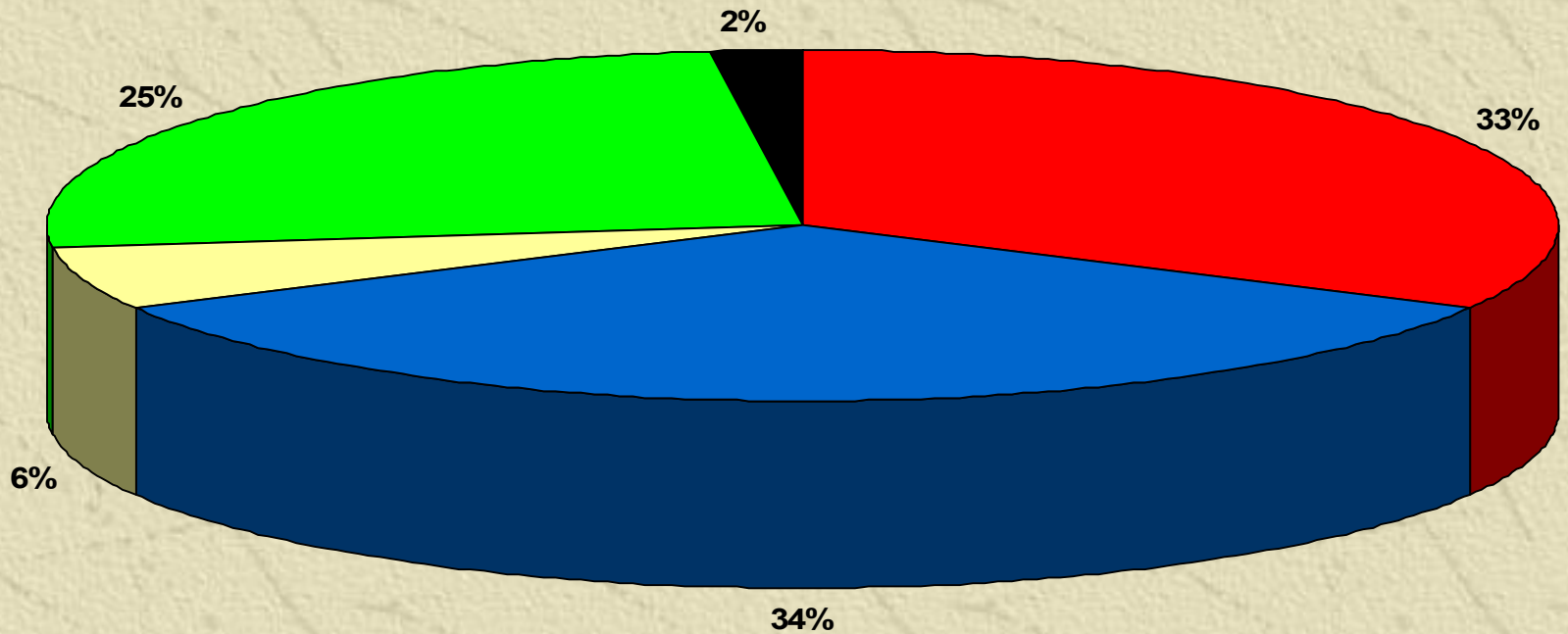
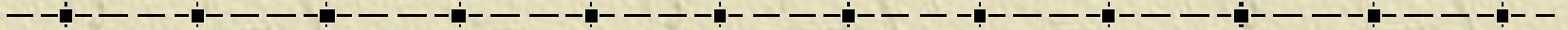


# GIS Deployment in the DOT

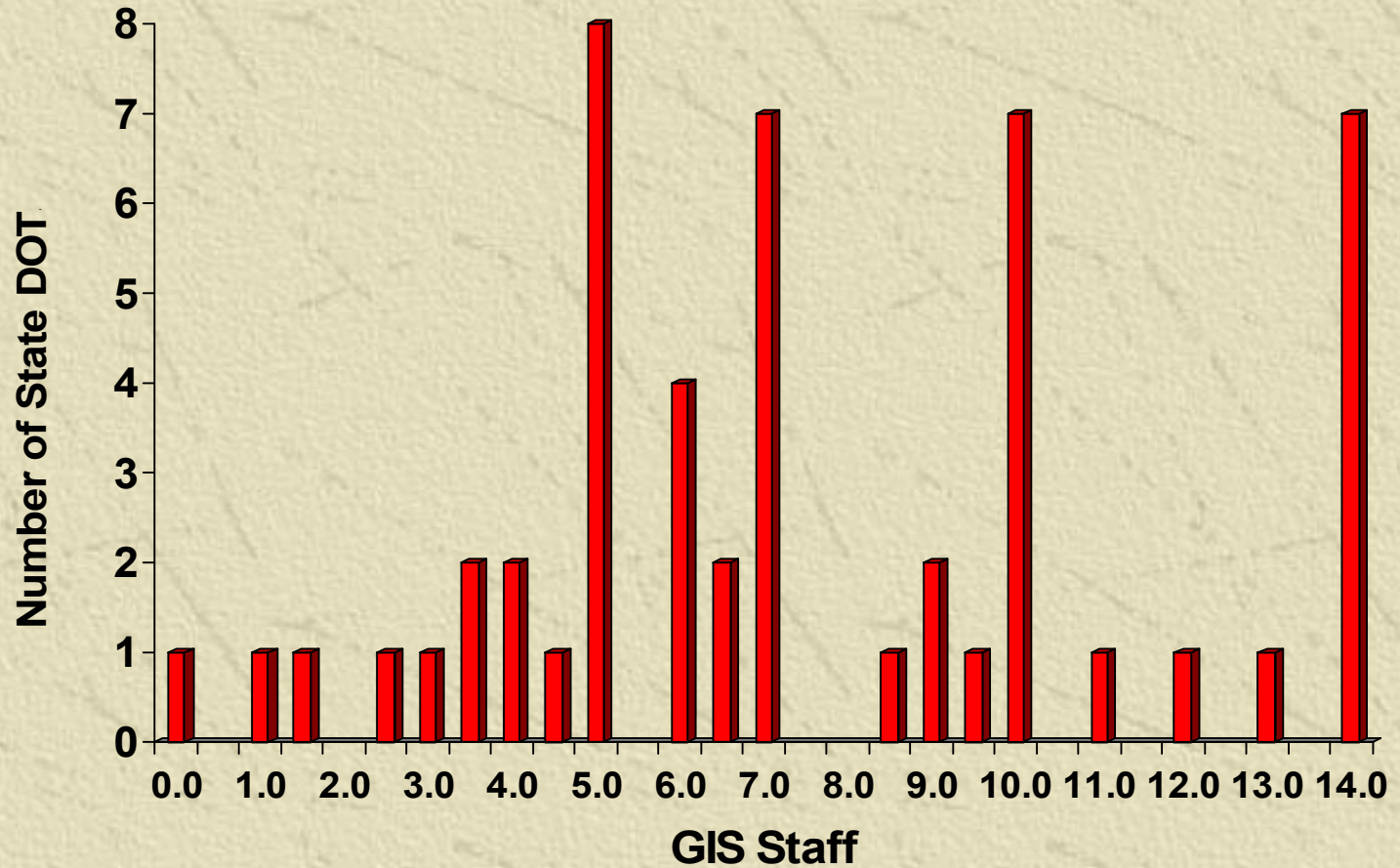
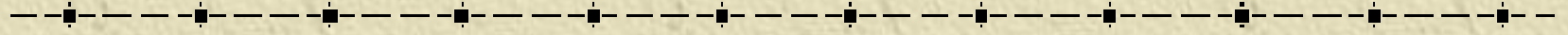




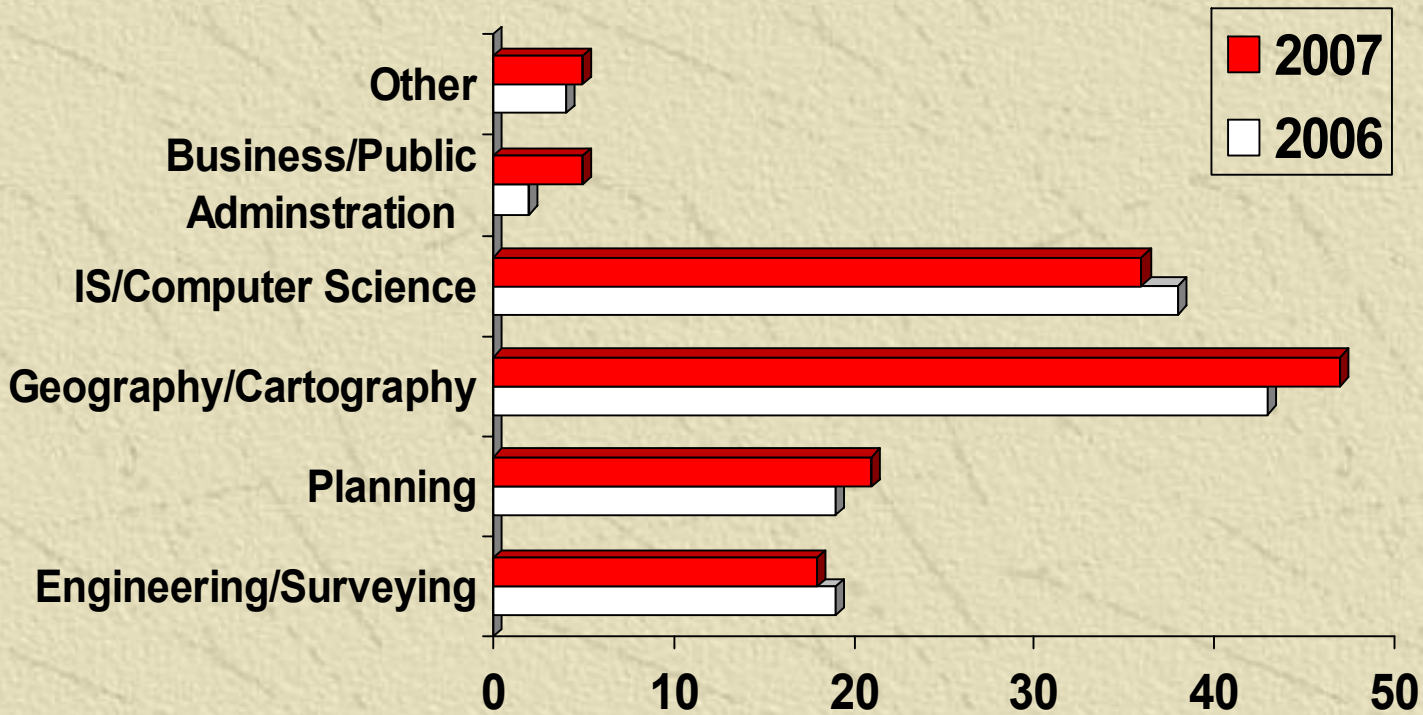
# Location of GIS Unit



# GIS Core Unit Staffing



# GIS Staff Expertise

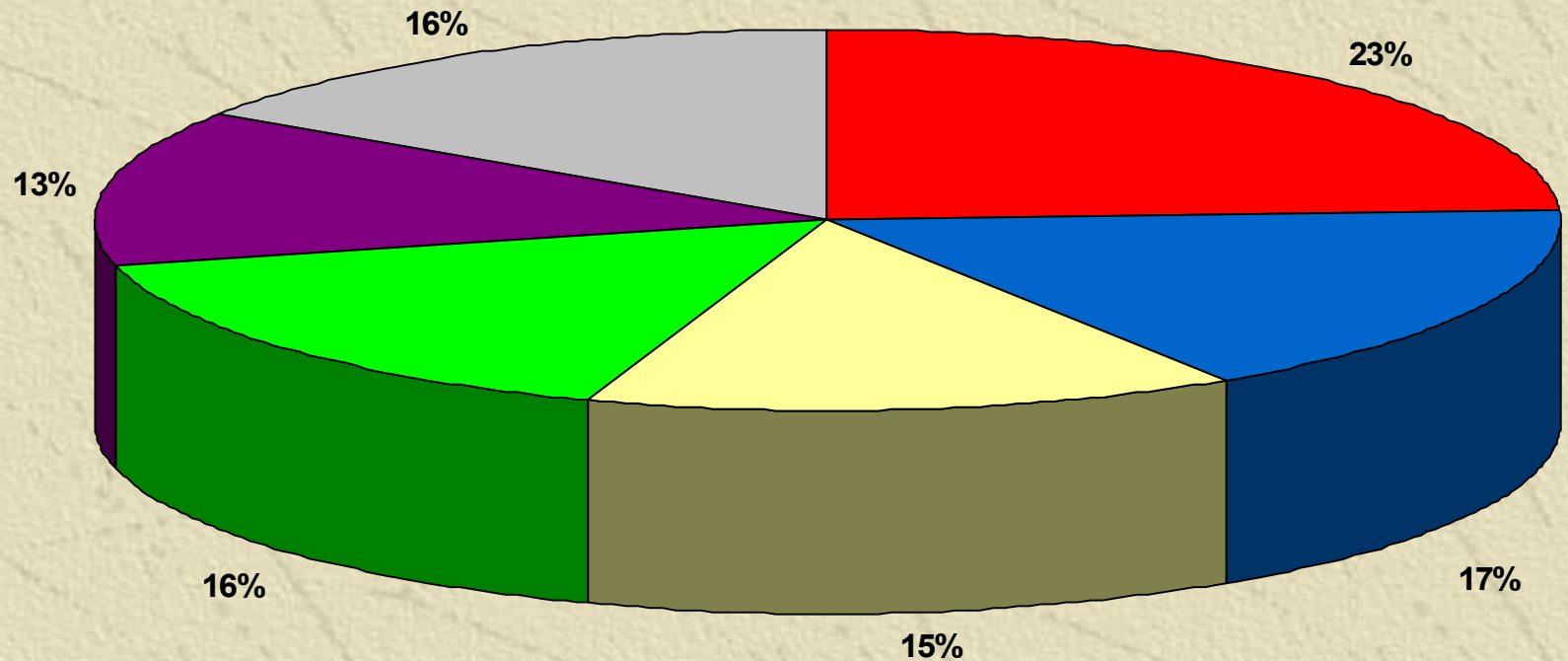
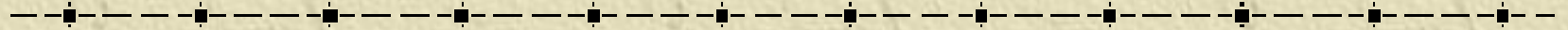


# GIS Certification & Outsourcing

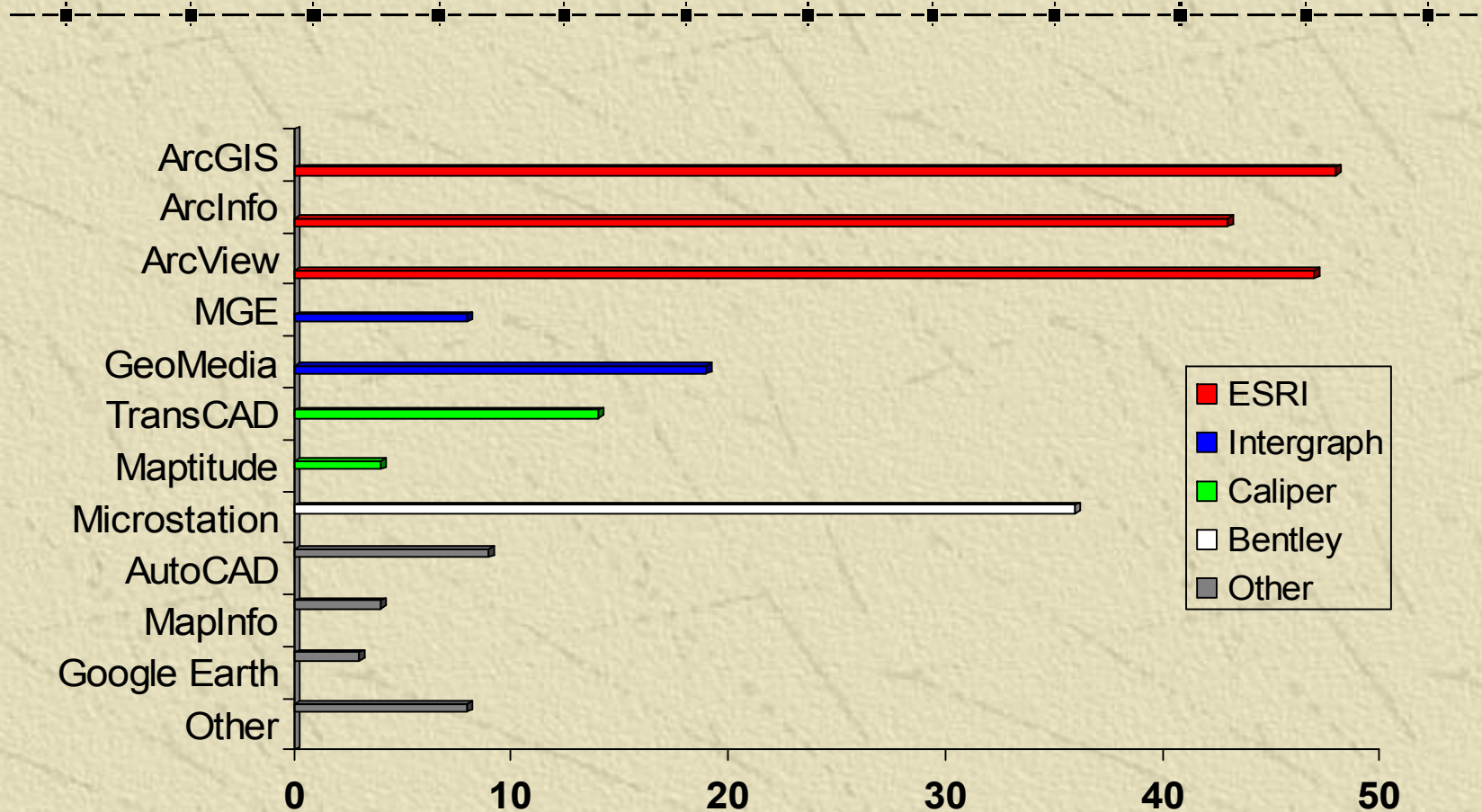
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- ✦ 21% of DOTs have a certified GIS professional on staff
- ✦ 12% say that GIS certification will be a factor in future hiring; another 23% are still undecided
- ✦ DOTs outsource about 39.6% of GIS work.
- ✦ Average GIS contract budget is about \$406,000 per year per agency

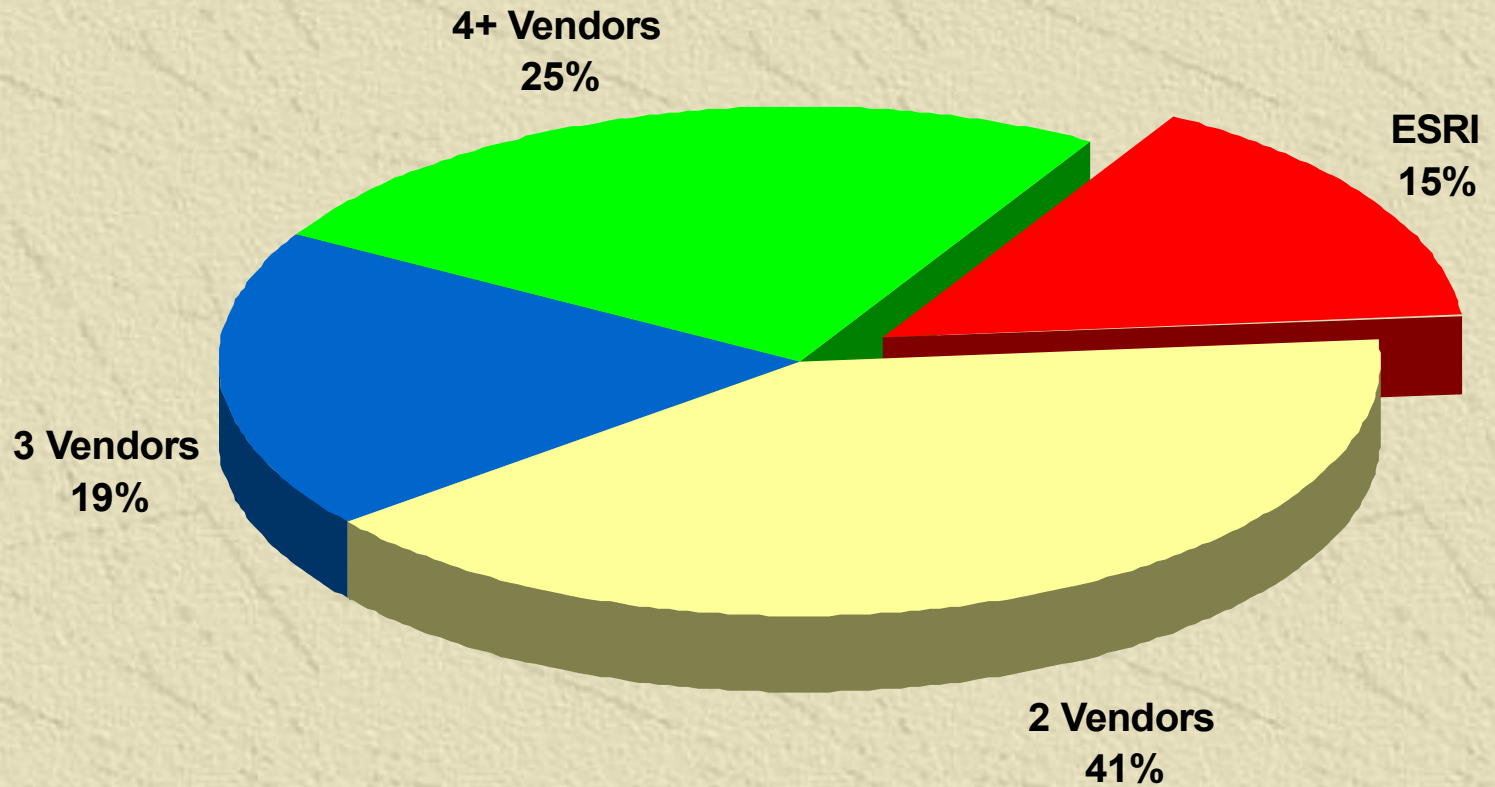
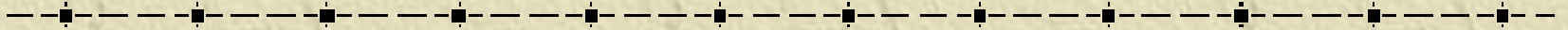
# GIS Staff Time Allocation



# Current GIS Software

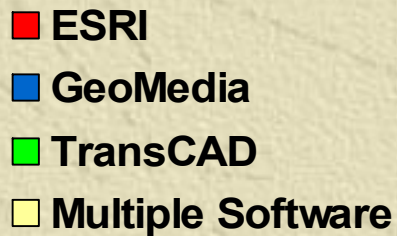
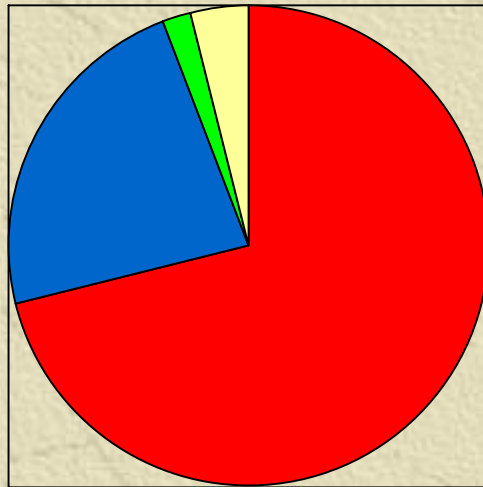


# Current GIS Software Mix

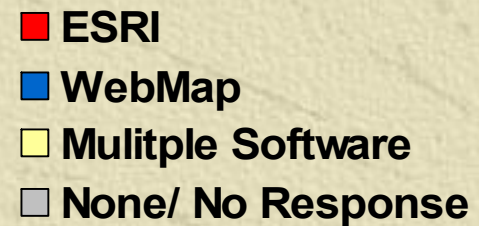
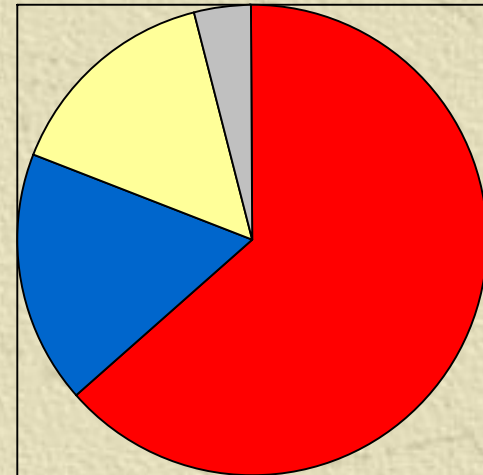


# Primary GIS Software

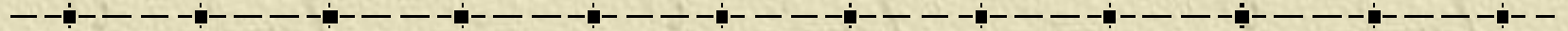
## Desktop GIS



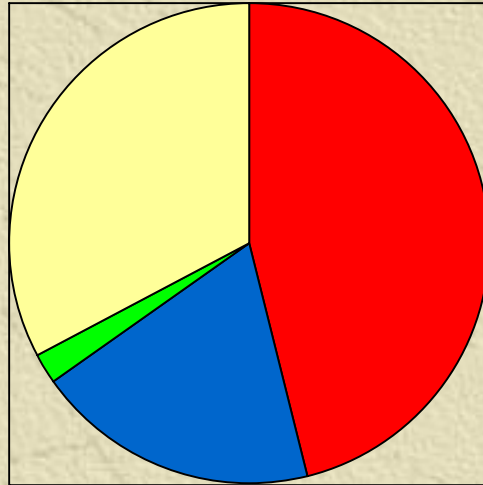
## Web GIS



# Primary DBMS Software

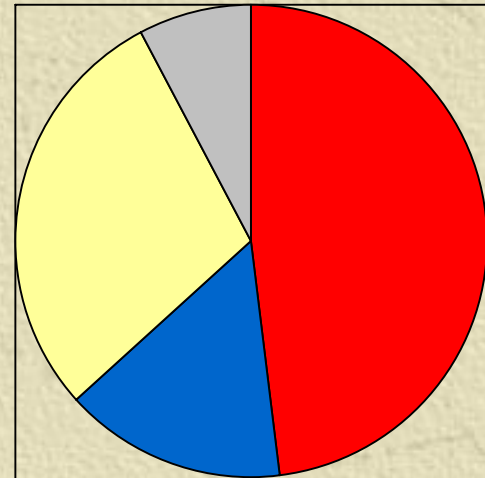


## DBMS Software



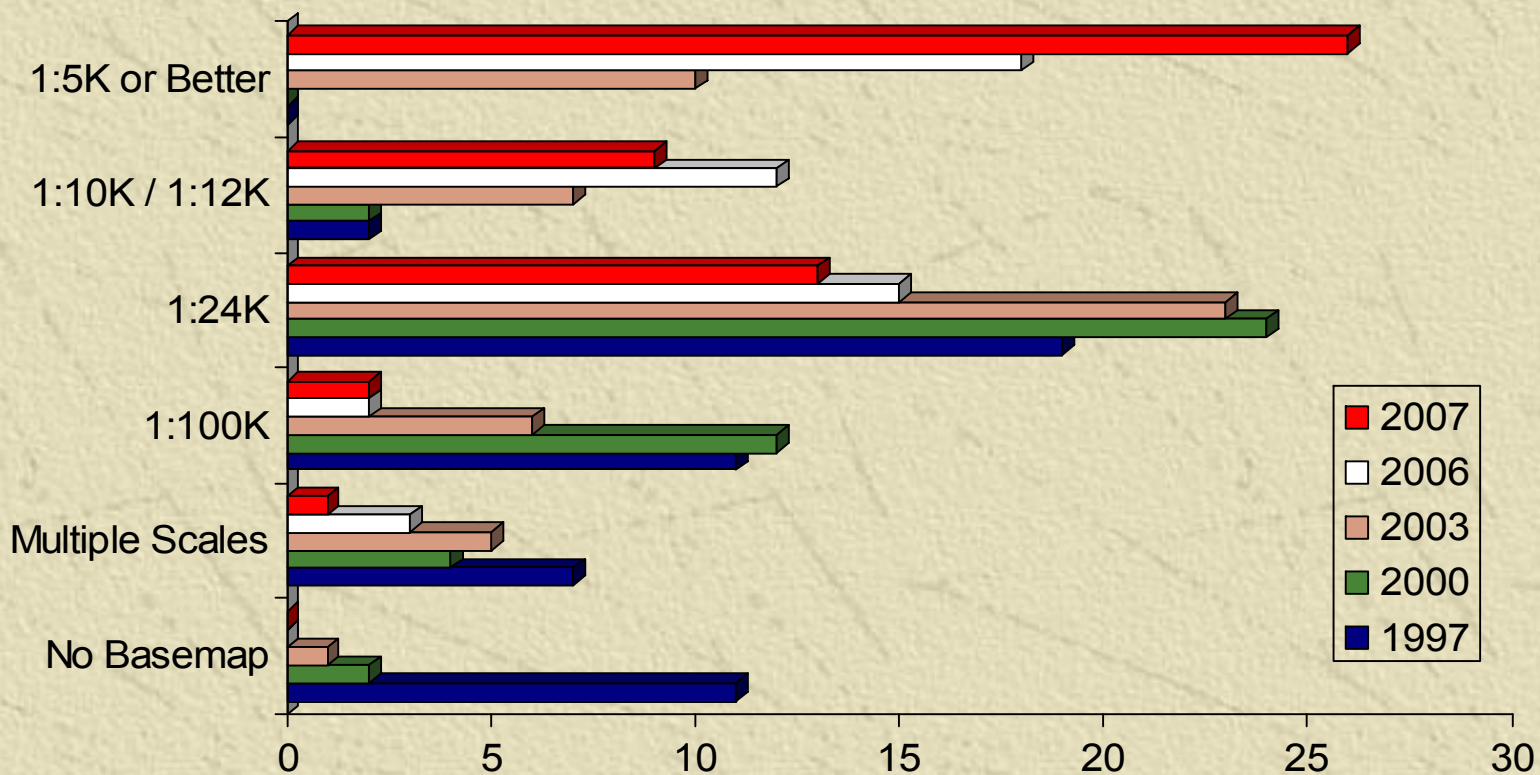
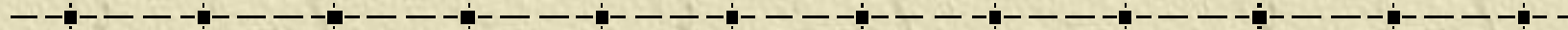
- Oracle
- SQL Server
- Sybase
- Multiple Software

## Spatial Manager

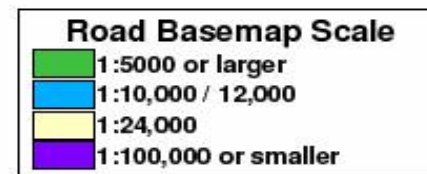
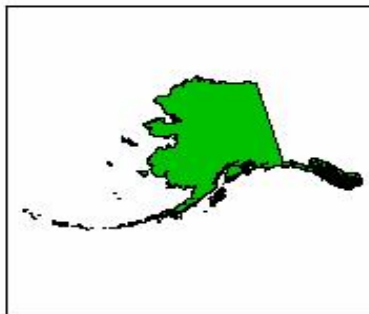
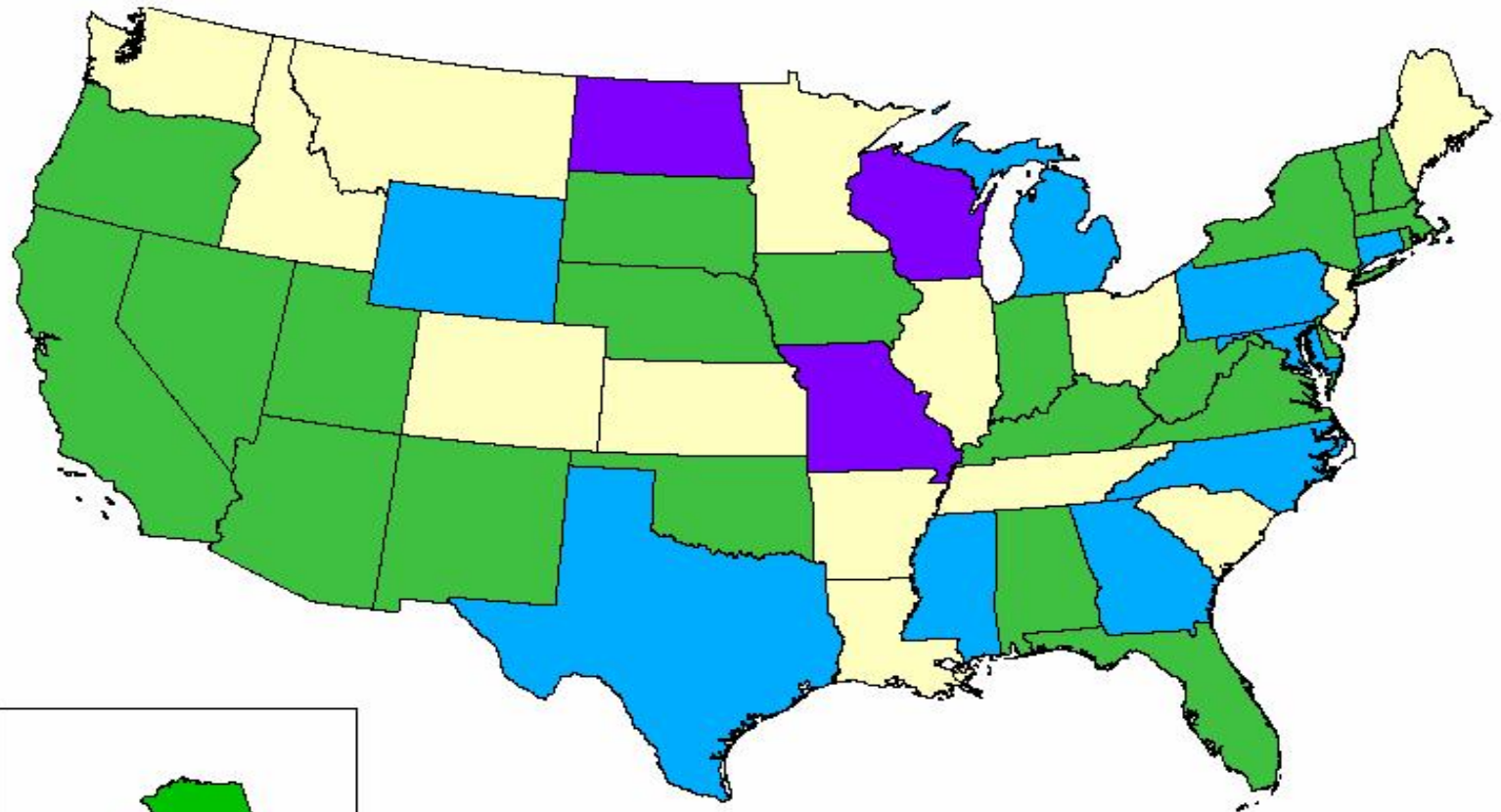


- ArcSDE
- Oracle Spatial
- Multiple Software
- Other/None

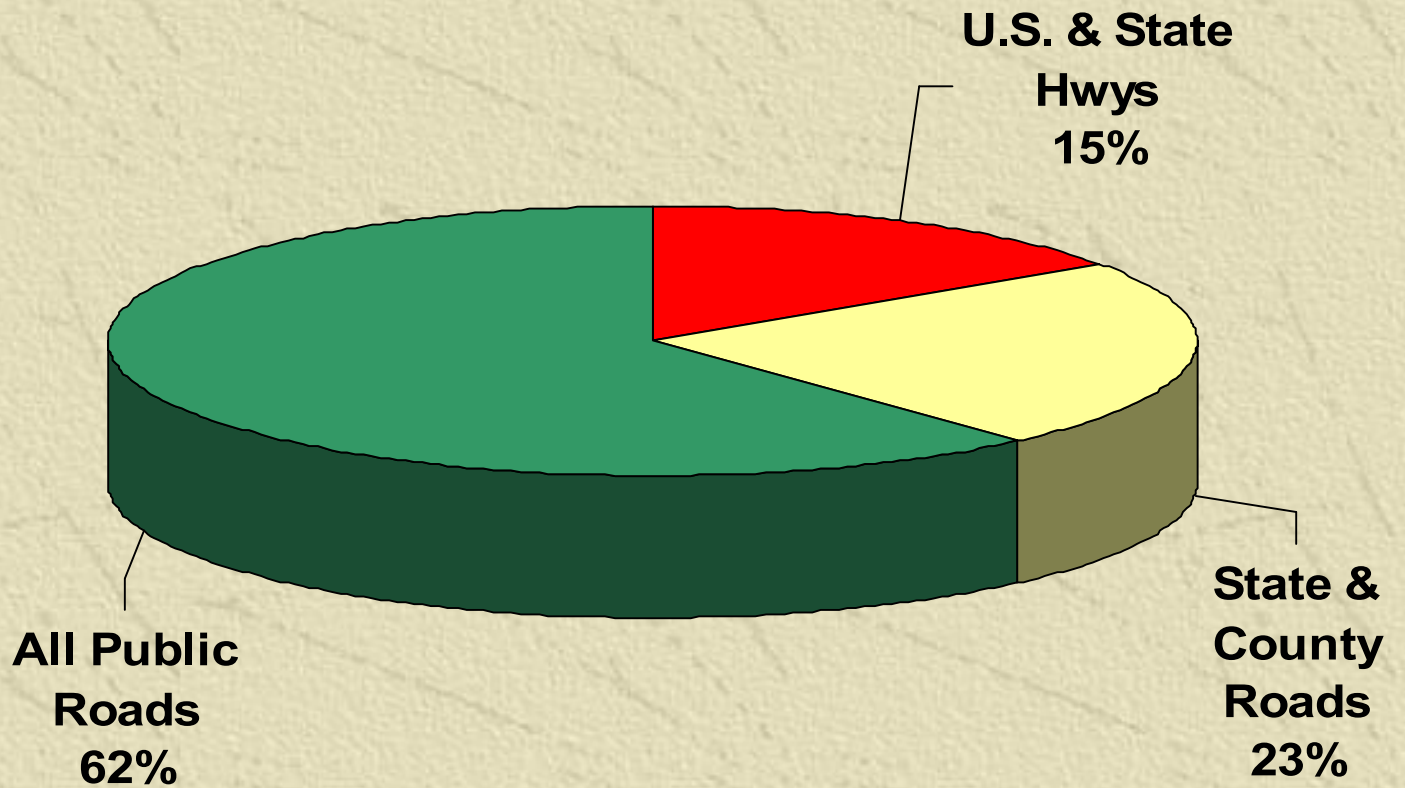
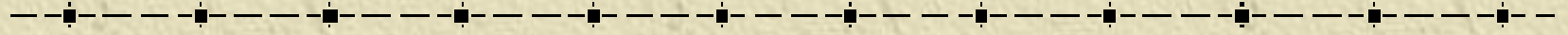
# Base Map Scales



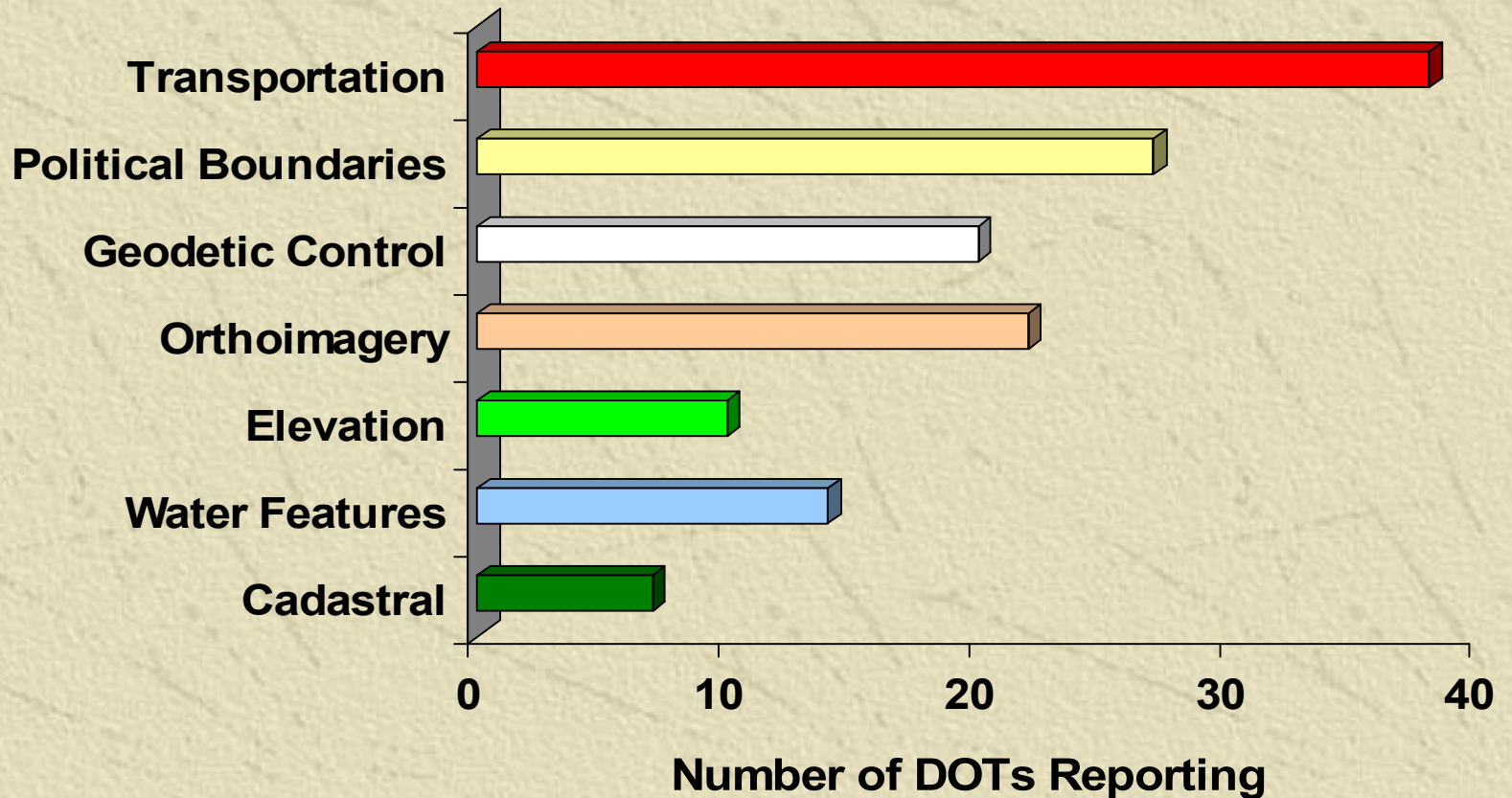
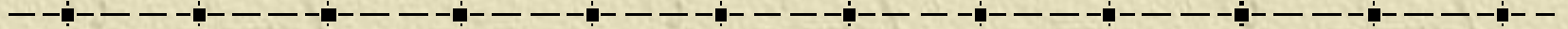
# Road Base Map Scales



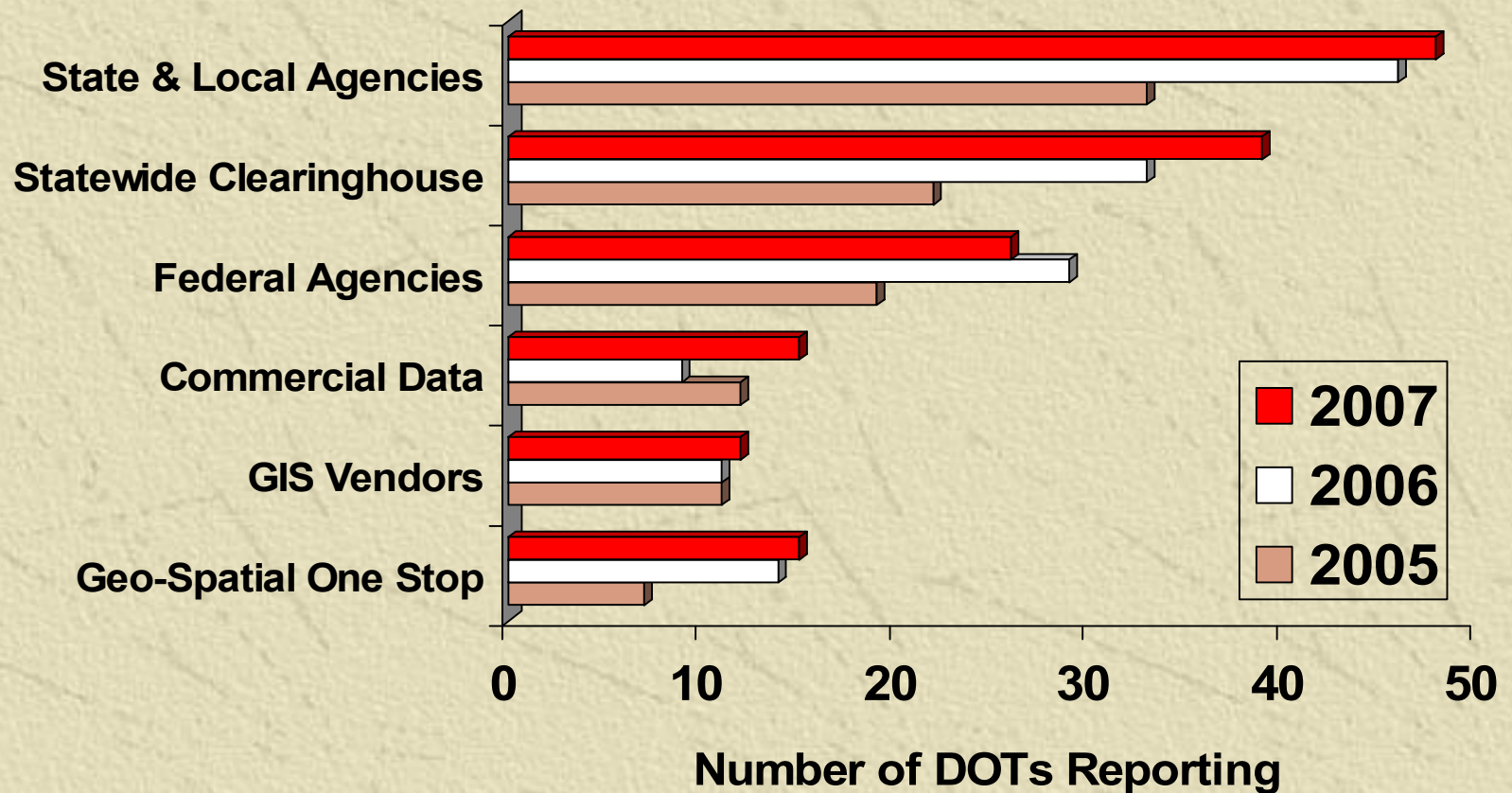
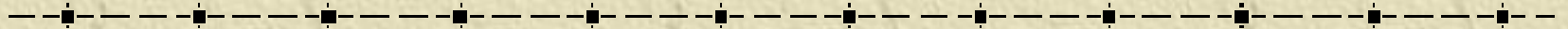
# Road Network Coverage



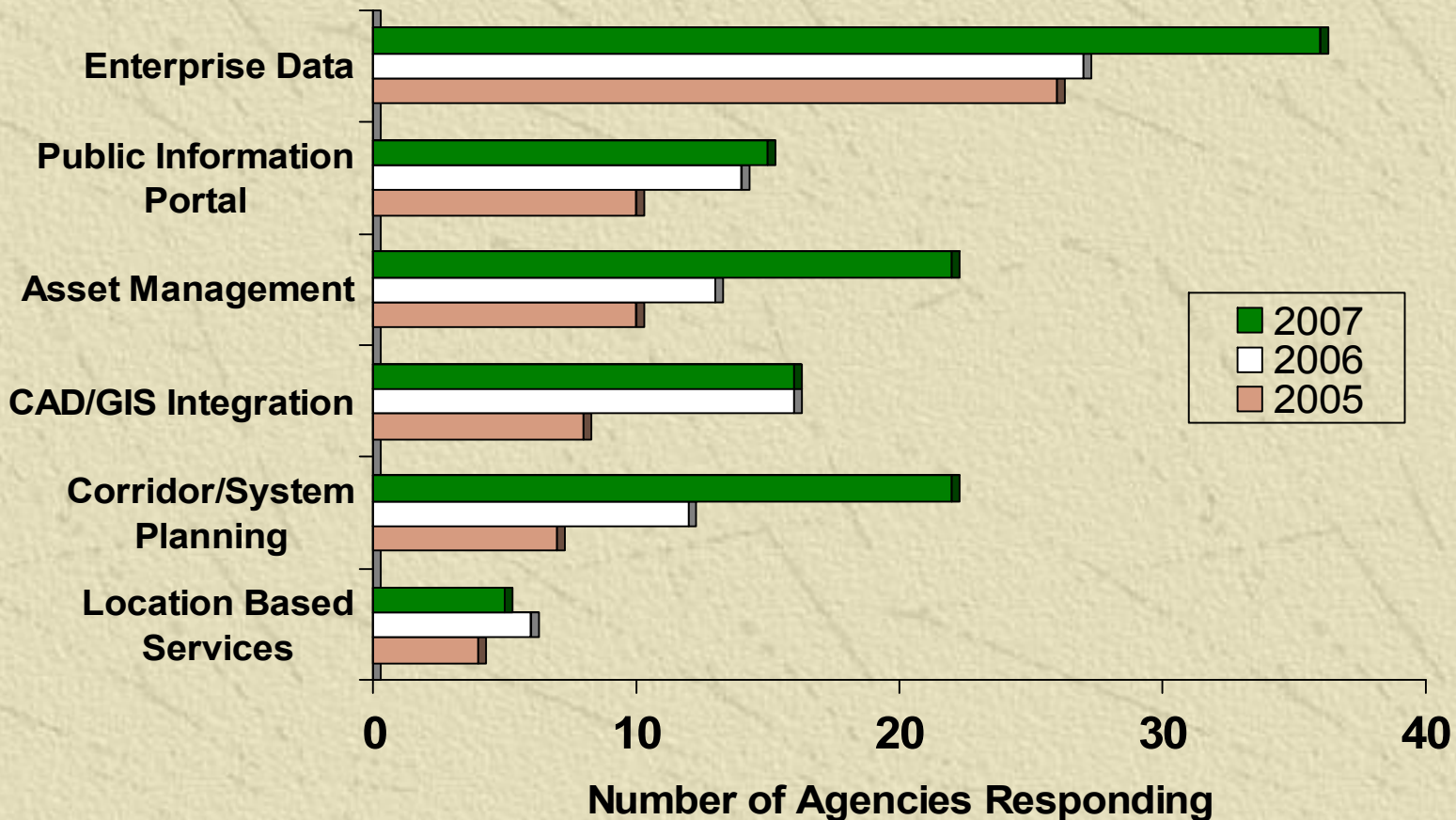
# Other Geo-Spatial Data



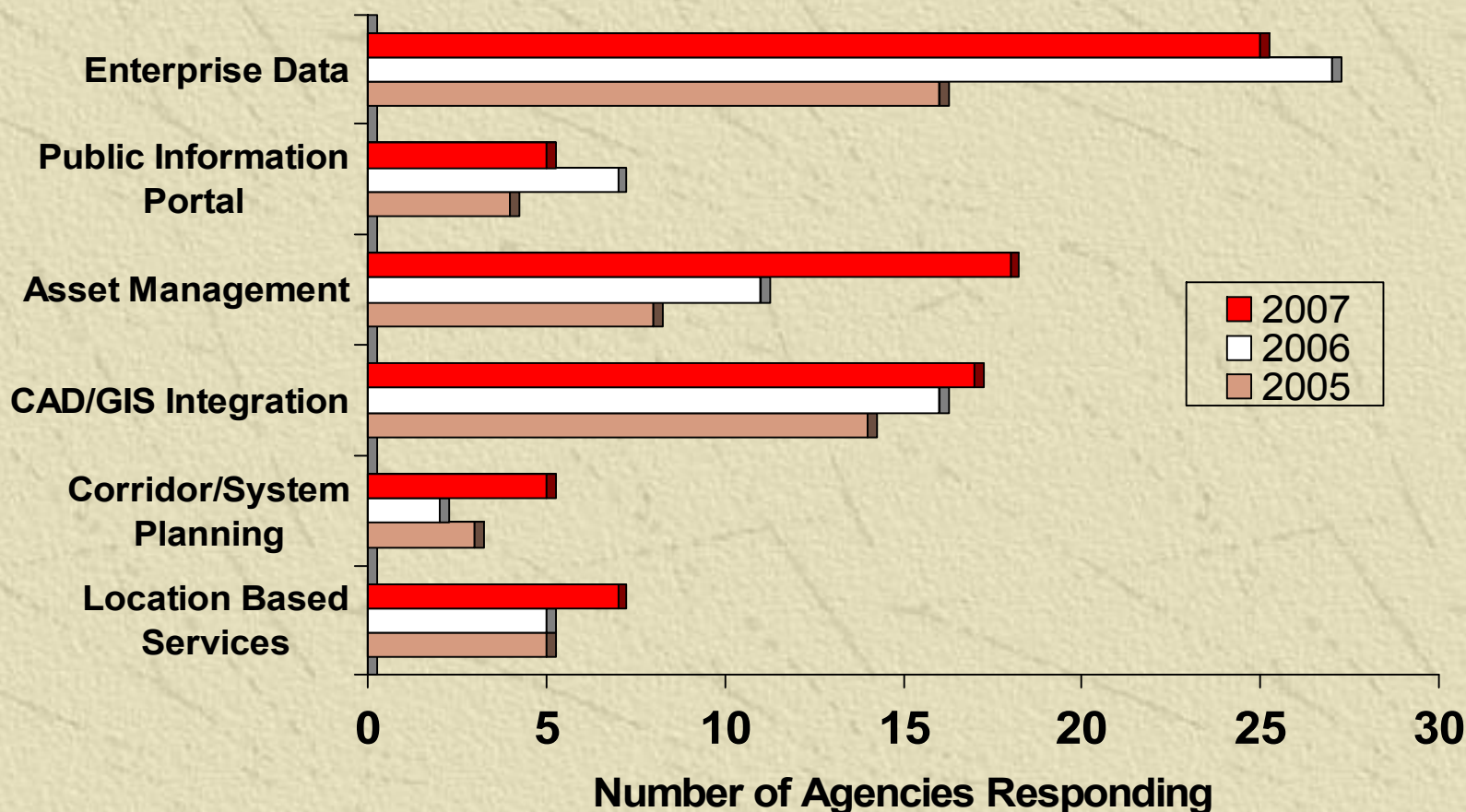
# Geo-Spatial Data Sources



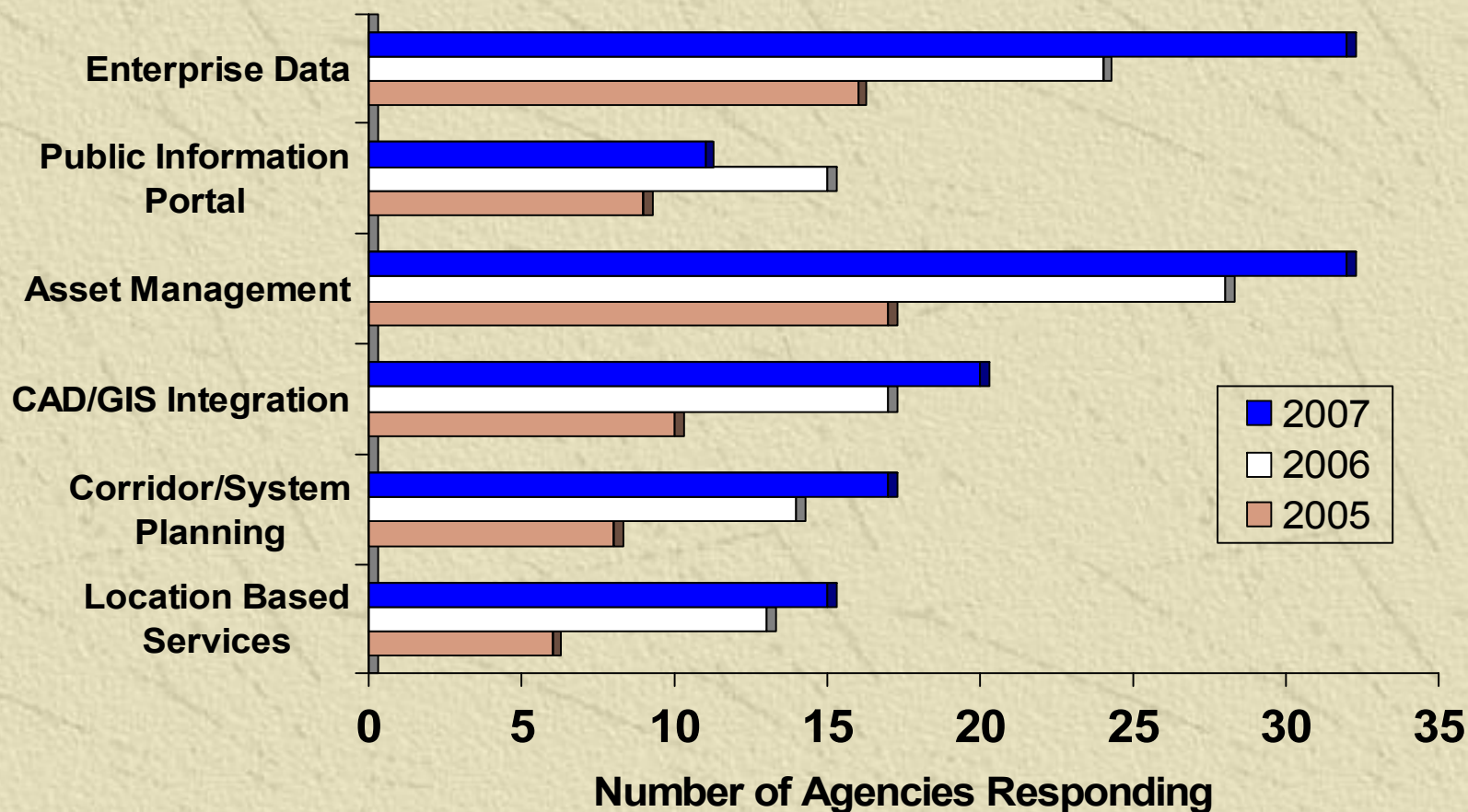
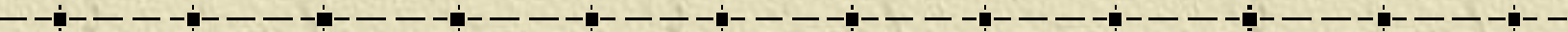
# GIS Technology: Greatest Current Benefits



# GIS Technology: Most Difficult to Implement



# GIS Technology: Expected Future Benefits



# Current GIS Staff Activities

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## ✦ Core Functions

- ◆ Develop web applications (31)
- ◆ Data warehouse / Enterprise GIS (16)
- ◆ Base map maintenance / updates (13)
- ◆ Location referencing (8)

# Current GIS Staff Activities

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## ✦ Other Activities

- ✦ Software / hardware migration (20)
- ✦ Map Production / Publication (10)
- ✦ Integrate Imagery data with GIS (10)
- ✦ Photolog / Videolog collection (9)

# Current GIS Applications

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- ✦ Road Inventory Management (15)
- ✦ Environmental Studies (12)
- ✦ Traveler Advisory / Information (8)
- ✦ Truck Routing/Permitting (7)
- ✦ Roadside Maintenance (7)
- ✦ ITS / Traffic Management (6)
- ✦ Project Management (6)
- ✦ Safety / Crash Analysis (5)
- ✦ Data Sharing Partnerships (5)

# GIS Activities: Summary

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- ✦ Web-based applications continue to grow.
- ✦ Significant activity in software updating and migration.
- ✦ Continued activity in integration of imagery data with road basemap
- ✦ Growth in selected application areas:
  - ◆ Environmental studies
  - ◆ Travel advisory / information
  - ◆ Roadside maintenance