Secondary Uses of ITS Data in Texas

Shawn Turner
Texas Transportation Institute
Case Study Examples

- Houston’s TranStar
  - AVI Probe Vehicle System
- San Antonio’s TransGuide
  - Loop Detector System
Houston Case Study Examples

- Quantifying HOV benefits
- Calibrating simulation models
- ITS Evaluations
- Developing O-D matrices
- Neural network algorithms
Houston’s AVI System

- Freeways, Tollways, and HOV Lanes
- 1 to 5 Mile AVI Reader Spacings
- Real-Time Information
AVI Data Source

1994
184 dir. miles of freeway/HOV coverage
35,000 daily travel time observations

1996
378 dir. miles of freeway/HOV coverage
150,000 daily travel time observations
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AM Peak Hour Speeds: IH-10
Daily Averages

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Travel Speed Reliability: IH-10

Confidence Interval

HOV

Freeway

April May June July Aug Sept Oct Nov
IH-10 Peak Hour Sample Sizes

Peek Hour Sample Size

Freeway

HOV

Other Houston AVI Examples

- Calibrating FREQ simulation models
  - Evaluating alternative scenarios
- ITS evaluations
  - Ramp metering
  - Selected corridors
- Developing O-D matrices
- Neural network algorithms
San Antonio Case Study Examples

- ITS DataLink System
- ITS Before-After Evaluations
- Support Model Deployment database design
- Supplementing HPMS counts
- Free internet access = numerous uses and users
TransGuide Phase One, San Antonio

- Over 300 loop detector stations on mainlanes and ramps
- 20-second polling pattern
  - volume, speed, loop occupancy
- 120 megabytes per day
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ITS DataLink System

- Oracle relational database (18 GB)
- Apache web server
- Gnuplot graphics software
- E-mail service

Data warehouse accessible through web browser
TransGuide Evaluations

- TTI Before-After Evaluations
  - Video from CCTV
  - Volume/speed data from loops
  - Travel time data from AVI
  - Incident response data

- MDI Evaluations
Other San Antonio examples

- Model Deployment database design
  - Effects of rainfall on average speeds

- Supplementing HPMS counts
  - Data validity and comparability

- Internet access to archived data
“The challenge . . . will lie not in finding facts but in interpreting them: it will be to find patterns, trends, anomalies, and relevant information from large databases.”

Jim Gray, Evolution of Data Management