GPS Activities at SHA

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How did we get to where we are?

- Road Inventory
- Centerline/Routes
- Highway Mapping
- Asset Management

"Look, officer. If we weren't lost, do you think I'd be asking you for directions to the national GPS convention?"
Road Inventory History

• Inventory all publicly maintained roads in Maryland

• Maintain a database of the roadway characteristics

• Field verify County and Municipal yearly updates
State Re-Inventory Cycle

- Counties were re-inventoried every five years
- All state roads are re-inventoried
- HPMS samples are re-inventoried
Roadway Characteristics

– Roadway type and width
– Number of lanes
– Auxiliary lanes
– Shoulder type, width, curbs
– Sidewalks
– Medians
Roadway Characteristics

• Intersecting Features
  – Publicly maintained roads
  – Bridges
  – Roundabouts
  – Ramps
  – Cultural features (schools, shopping centers, firehouses, parks, etc.)
  – Traffic signals
  – Stop signs, speed limits, begin/end maintenance
Yearly Improvement Cycle

- Municipalities and counties send in yearly updates

- State improvements determined by the following
  - Access permits
  - Newspaper articles
  - Construction notices
  - Traffic signal notices
  - Mapping and other departments
Before Modern Technology

- Manual Inventory
- Lots of Paper
Paper Inventory

- Straight Line Diagram
- Using DMI to get road length
What is Global Positioning?

- Satellites
- Base Stations
- GPS Receivers
Road Inventory Data Entry (RIDE)

- Reduced road inventory data collection time
- Reduced state re-inventory cycle
- Increases productivity in collecting and processing data
- Improved quality of data
Centerline/ Routes History

- Skeleton Files – 100k scale
- NetMaps – Network Maps – 24k scale
Data is only as good as.....

- GIS Event Mapping
- Building LRS
- Dynamic Segmentation
- Human Error
1996 Route System

- 22,830 arcs
- 4,488 routes
Centerline/Routes

• New Route Identifier
• Route measures calibrated with mile points
• Additional routes added, ramps and reverse direction
• Human Error still exist
2009 Route System

- 327,421 Arcs
- 90,957 Routes
- 359,983 Calibration Points
Centerline

• Centerline Status
  – SHA’s centerline data is one year behind the current calendar year
    • The current statewide centerline corresponds with the 2009 Federal Highway Administration submission.
  • The data is posted at

http://www.marylandgis.net/SHAdata/
Mapping History
Mapping History

- Digitized from Mylar and maintained in MicroStation
- Separate CADD centerline base
- 3 year update cycle
Concerns

• New mapping base
• New Software
• Old Dogs/New Tricks

"When do we learn how to refold maps?"
Highway Mapping

- 426 - Quarter Grids and 168 Town maps
- One Centerline base
- Maps now on 1year cycle
Asset Management

- Light poles, Guardrails, Signs, etc.
- Location, Condition, attributes of asset
Sidewalk Inventory

- State maintained sidewalks
- ADA Compliance
You get what you pay for

- Less Accuracy
- Limited Functions
- Increased office time

"I'm afraid your GPS device is working just fine."

"I told you not to buy that GPS on E-bay, but would you listen to me?"

NO-0-0-0...
What Fun

- Dislike change
- Unlimited possibilities
- Recreational examples
Aging System and Applications

- Concerns of availability
- Program platform supported
Questions?