Kansas Rural Transit ITS Evaluation
AVL/MDT/CAD

Dean Deeter
Athey Creek Consultants
Topics

• Project Background
• Evaluation Efforts To Date
• Next Steps
Background

- Kansas - 105 Counties
- 15 Coordinated Transit Districts
- Need for Dispatch Support
- Centralized ITS for Rural Transit
Background
Central ITS System

- Support Dispatch Throughout State
- Centralized Operations of Servers etc.
- Efficient Operations & Maintenance
Hutchinson, KS
-Operator Display
-Communication

Hays, KS
-Operator Display
-Communications

800 Mhz (2-Way)
KSDOT Central Facility (Topeka)

Hutchinson, KS
- Operator Display
- Communication

Hays, KS
- Operator Display
- Communication

800 Mhz (2-Way)

Remote Desktop

KSDOT Central Facility (Topeka)

AVL Server

CAD Server
Focus of Evaluation

• Benefits Recognized by ITS Systems
  – Benefits to Drivers, Dispatchers, Managers
  – Outside challenges of software, what are the rural benefits of this solution

• KDOT Software Characteristics
  – Is Migration to Internet Based Solution an Option
  – Costs, Timeframe, Impacts of Migration
Hutchinson, KS
Reno County Area Transit

- 3 Fixed Transit Routes
- Para-transit Service
- 6-10 Vehicles in Operation
- 1-2 Dispatchers on Duty
Hays, KS

- Primary Para-transit
- Limited Fixed Route
- 6-10 Vehicles
Initial Feedback

• AVL – Automated Vehicle Location
• CAD – Computer Aided Dispatch
• MDT – Mobile Data Terminals
• Report Generation
AVL (Automated Vehicle Location)
Initial Feedback - AVL

• Hutchinson:
  – Use Quite a bit!
  – Reduces the need to ask drivers’ location
  – Reduces talk over radio
  – Helps insert pickups for new reservations
  – Helps in response when callers call to ask where driver is.
Initial Feedback - AVL

• Hays:
  – Did not appear to use very much
  – Prefer if some dispatchers don’t look at it
  – Possibly distracting
  – Delay is a possible issue (Hays is a small town, even a 10-20 second delay can misrepresent a vehicle)
Computer Aided Dispatch
Initial Feedback - CAD

• Hutchinson:
  – Use the CAD quite a bit!
  – Reduced training time
  – Increases likelihood of dispatchers succeeding
  – Not always best route assignment / Some dispatchers disagree with it at times
Initial Feedback - CAD

• Hays:
  – Use Quite a bit! Very effectively
  – A lack of trust in automated assignment/routing
  – Limited use of automated trip assignment (at least in immediate ride requests)
  – Training still takes time to experience events
Mobile Data Terminals
Initial Feedback - MDT

• Hutchinson:
  – Use Quite a bit!
  – Drivers have come to love it / Originally apprehensive
  – Majority of the technical issues – Hard to Trace root of problems
  – Reduces talk over the radio
  – Drivers still do all paper logs!
Initial Feedback - MDT

• Hays:
  – Use it but also paper backups
  – Still verbal dispatch/confirmation
  – Lack of trust in MDT based on reliability issues
    • Frustration is no apparent pattern (or cause) to failures or downtime
  – Little reduction in paperwork
Initial Feedback – System Reports

• Hutchinson:
  – Little or no use of automated reporting
  – Partially comfort/familiarity factor with existing spreadsheets
  – Partially lack of trust in data
    • Funding based on ridership
Initial Feedback – System Reports

• Hays:
  – Reports are challenging to use
  – Can take considerable time to understand
  – Manually reconcile reports daily with drivers’ logs
  – When generated, reports are accurate and detailed
Benefits

• Hutchinson:
  – On-time Performance is Better
  – Pressure is off the Dispatchers
  – More consistent routing (less dispatcher deviations)
  – To Riders: More Reliable
  – Training is Quicker and Easier
  – Dispatchers more likely to succeed
Benefits

- **Hays:**
  - Overall the users like the system
    - When it works!
  - Feeling that the Riders receive better service
    - At times (automated routing can impact this)
  - System has helped allow additional services
    - Safe Rides (evening free service)
    - Fixed routes serving University
  - Additional Details in Record-keeping
Concerns (Technology or Training)

• Hutchinson:
  – More Layers when troubleshooting problems (CAD Vendor, MDT Vendor, KDOT (Topeka), Local)
  – Would have liked to host server
  – When System is down, it is Down!
Concerns (Technology or Training)

• Hays:
  – Reliability is major concern
  – There needs to be a trust in the system
  – No (or little) reduction in paperwork
  – Estimated 90% of problems are with data communications
Conclusion on Concerns

• About 5 Outages per month (weekly)
• Hurts credibility
• Paper backups done 100% of the time
• Reliability is critical
Remaining Steps

• Probe More into Reliability Problems

• Summarize Results this Winter