Public Transportation Division:
Technology and Transit

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November 15, 2017
Public Transit Then.
Transit Today.
DATA

INFORMATION

KNOWLEDGE
Technology Is A Tool

- Inputs
- Outputs

- Needs:
  - Owner or champion
  - Understanding of outputs
  - Goals and expectations
  - Simplification
  - Planning and implementing business practice changes
  - Integration
  - Training
  - Hiring the right skills
  - Daily attention
PTD Technology Program

• Started in 2000 with state funding
  • One vendor for paratransit
  • Focused on baseline (computer training, accounting software, …)

• Lessons learned:
  • Need local ownership
  • Local skillsets an issue
  • Business practices not in align with outputs
  • Collect once, use many mindset

• Pre-implementation
  • Performance Plan Review
  • MOU of expectations
  • # of trips dictated type of software eligibility
Technologies Implemented

**Statewide**
- Maintenance Software (Trapeze EMS)
- Electronic Grant Making (SAP EBS)
- Google Transit File Specification (GTFS) for all fixed routes (trip planner)

**Urban**
- Real Time Passenger Information – interfacing through web and apps
- Electronic fareboxes and other in vehicle technologies such as Automatic Voice Annunciation System (Cleaver Devices), Automatic Passenger Counters (UTA and Trapeze), cameras
- Runcutting and scheduling software (Hastus by Giro, Trapeze)
- Scheduling and dispatching software for paratransit and fixed route
- Tablets (MDCs)
- Interactive Voice Response (IVR) telephone systems – call in and call out features
- Priority treatment at signalized intersections
- Electronic fare payment
- Rail technologies

**Rural**
- Scheduling / Dispatching Software
- Tablets (MDCs)
- Interactive Voice Response (IVR) telephone systems – call in and call out features
- Cameras in all rural vehicles
Funding

Procurements:
- Lead agency bids with multiple vendors and required statewide reports
- Statewide bid of vehicle equipment

Vehicle Equipment on state contract – AVAS, APC, Fareboxes, digital signs, cameras, pre trip inspection, propane conversion kits

Technology focused staff at one of the Universities

Maintenance of regional ITS Architectures

2017 NCDOT Innovations in Public Transit Service Award

Selection Criteria:
• Problem identification
• Implementation of innovative transit service solution
• Documented results / outcomes

Evaluation Team
• Kai Monast, Sid Morgan, Randy Cantor, JD Stewart

Self Nominations Received:
• GoRaleigh – Real Time Arrival Signs
• Johnston County Area Transit System (JCATS) – Community Funded Transportation
• Land of Sky – Taxi Voucher Program
• Macon County Transit – QRyde Coordination Module
• Mountain Mobility – Going the Distance Award Program
• PAS-TRAN – Service Areas to Innovate
2017 NCDOT Innovations in Public Transit Service Award Winner

**Mountain Mobility** – Going the Distance Award Program

The tenants of the awards program were to:
(1) define success for vehicle operators,
(2) recognize successful vehicle operators,
(3) identify vehicle operators that need intervention or assistance on their path to becoming successful, and
(4) improve the performance of employees by providing them with a performance measure to meet.
Most important result - investment of the individual employees in the system’s performance.
What’s next?

Legacy systems will have hard time competing with millennial developers
- Splitting trips for coordination
- Solutions to on demand transit
- Passenger Facing Mobile App
- Cloud Based dispatching

Business Intelligence System (BI)
- Building and maintaining giant datasets
- NCDOT creating a Geographic Information System (GIS) BI – transit is at the table
Next Vehicle Technology?

Autonomous Vehicle

EcoPRT being built on NCSU campus

Alternative Fueled Vehicles in NC
• 2 cities committed to electric vehicles
• 1 city committed to CNG
• Propane conversion of rural vehicles
Thank you!

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