Session: “Technology and Transit”
Presenters: Debbi Howard, Alaska DOT & PF
Date: Wednesday, November 15, 2017
Time: 3:15 - 5:00 pm
2017 AASHTO – PTC Winter Meeting

Today’s Agenda

➢ Overview
➢ Partnerships
➢ Today’s Technology
➢ Technology’s New Future
➢ Conclusion
Overview

- Location: Known as “Golden Heart of Alaska”
- Founded: 1964
- Population: 97,581 (2010 Census)
  - Fairbanks – Alaska’s second largest city
- Area: 7,444 square miles (just smaller than New Jersey)
- Urban Area: Fairbanks and North Pole
Overview

Key Service Areas:

- University of Alaska
- Downtown Fairbanks
- North Pole
- US Army – Fort Wainwright
- US Air Force – Eielson AFB
- Fairbanks International Airport
- East Fairbanks Shopping District
- West Fairbanks Shopping District
- Downtown Fairbanks Transit Center
- Fairbanks Memorial Hospital
- Alaska Railroad Station (summer only)
Overview

Fairbanks NSB Transportation - Services:
- Metropolitan Area Commuter System (MACS) - Fixed Route services (urban area and Fort Wainwright)
  - 9 Fixed Routes, traveling 500,000 miles/year
  - Videos:
    - MACS: https://www.facebook.com/macstransit/videos/vb.500910383340884/628814827217105/?type=2&theater
    - AK Man: https://www.facebook.com/macstransit/videos/vb.500910383340884/852130154885570/?type=2&theater

- VanTran – ADA Complimentary Paratransit Services
  - Traveling approximately 130,000 miles/year and more than 130,000 unlinked passenger trips in 2016 services
Fairbanks NSB - Today’s Technology

Fairbanks NSB Enterprise Transit Management Platform
Fairbanks NSB – Today’s Technology

- **Single Application – Fixed and Demand**
  - Single Database
  - Single Integrated Mobile Data Interface
  - Single Traveler Information Solution

- **Enterprise Solution**
  - Fixed Route
  - Demand Response
  - In-Vehicle Peripherals
  - Real Time Passenger Information
  - Flexible & Highly Configurable
  - Open Architecture
  - Federally Compliant and Secure
  - Current: Hosted service/cloud available
Fairbanks NSB – Today’s Technology

Real-Time Service Management

- Automated Dispatching – direct connection to our Mobile Data System
- Vehicle Location
- Real Time Data Capture
- Real Time Alerts
- Real Time ETA
- AVL and Event Playback

Customizable and Advanced GIS and Location Based Tools

Integrated Google Earth Address Views

Automated Dispatching and Alerting

Automated Vehicle Tracking and Monitoring
Fairbanks NSB – Today’s Technology

Reporting

We Leverage Credible Verified Data for Many Reports:

- Operating statistics
- Vehicle miles & hours
- Passenger mile
- Passenger mile & pick-up charge
- Geographical zonal rate
- Revenue Mile (Revenue Hour)
- Flat Rate
- Shared revenue / shared mileage
- Units of service
- Reporting

- Trip Status Reports
- Billing Batch Identifier
- Tracking costs across funding sources
- GIS Distance calculation Trip cost (shortest path)
- Calculate total fare – percentage by funding source
Fairbanks NSB – Today’s Technology

Reporting

• **Standard Reports**
  - Operational
  - Billing, Performance Monitoring
  - NTD / S-10 / Others
  - Day To Day Management
  - Manifests (Detail Summary)

• **Report Builder**
  - Create Ad-hoc Query Based Reports

• **Report Formats / Exportable**
  - PDF, Word, CSV, (Data files Import / Export)
  - Print / E-mail / Alerts w/ Automation
Fairbanks NSB – Today’s Technology

Mobile Data System

Paratransit

Fixed Route
Mobile Data System

- **Automated Vehicle Location (AVL) – components:**
  - Speed, Heading & Idle Alerts
  - Track & Locate Vehicles within Seconds
  - Planned Route vs. Actual Route Comparisons
  - Vehicle / Driver Validation and Route & Event Playback

- **Mobile Data Computing (MDC) – components:**
  - Driver interface for all of our services!
  - Estimated Time of Arrival
  - Electronic Manifests
  - Dynamic Schedule Updates
  - Messaging: 2-way Communications
  - Real-Time Data Capture / Verification
  - Increase Data Accuracy / Reporting
  - Navigation aids – in/out of coverage
  - Operational Analysis (dwell times, break times, etc.)
  - Integrate with payment, onboard Wi-Fi, other services
Empowering the Passenger

- MACS/VanTran Website
- Social Media
- MACS:
  - Electronic Passenger Information (transit center LCD displays)
  - Google Transit
Empowering the Passenger

- **VanTran:**
  - **Online Trip Reservations & Response** - customer trip reservation request and confirmation
  - **Interactive Voice Response (IVR)** – customer call outs
Challenges

• **Inconsistent Internet and Limited Service Providers.** Several routes go in and out of Internet coverage while on route (specific to Fairbanks only).

• **Hosted Service - Hardware.** Outdated servers require constant updates (specific to Fairbanks only).

• **Time Difference.** This is an issue only during upgrades.
Lessons Learned

• **Technology** is only as good as your oldest component.

• **Support & Maintenance.** Annually budget to constantly update technology, such as tablets, modems, cell service, etc.

• **Fairbanks NSB** is learning this issue the hard way. We are still utilizing aging Toshiba tablets and do not have spare components on hand to repair.

• **Cell Service** continues to be an issue in our area as we do not have the same capabilities as the Lower 48.
**Technology’s New Future**

**Mobility App**
- Single Mobile Interface for multiple mobility options
- Personalize each ride
- Be informed – notifications
- Manage trips anytime!
- Streamline scheduling & dispatching
- Expands business hours
- Enhances customer service
- Integrates with fare payment

---

*Image of mobile app interfaces showing features such as booking a trip, managing trips, and service policies.*
Technology’s New Future

Automated Fare Collection

• Single Payment System
• Leverages mobile data system infrastructure
• Multiple fare payment options – mobile, card, tap, NFC, pre-paid account
• Online account management
• Reward Programs
• Beacons – Creating convenient bus payment options
• Interfaces with all other open technology systems
Questions & Comments
Thank You!

Debbi Howard
Alaska Transit Coordinator, AK DOT & PF
debbi.howard@Alaska.gov
(907) 465-2883

Michelle Felix
Transportation Manager, MACS Transit & Van Tran
Mfelix@fnsb.us
(907) 459-1196

Todd Allen
Director of Government & Community Relations
todd.allen@routematch.com
(919) 676-8327