



# U.S. DOT T3 Webinar Mobile Device Technology TCRP Synthesis 91

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Case Study

LeeTran – Lee County, FL

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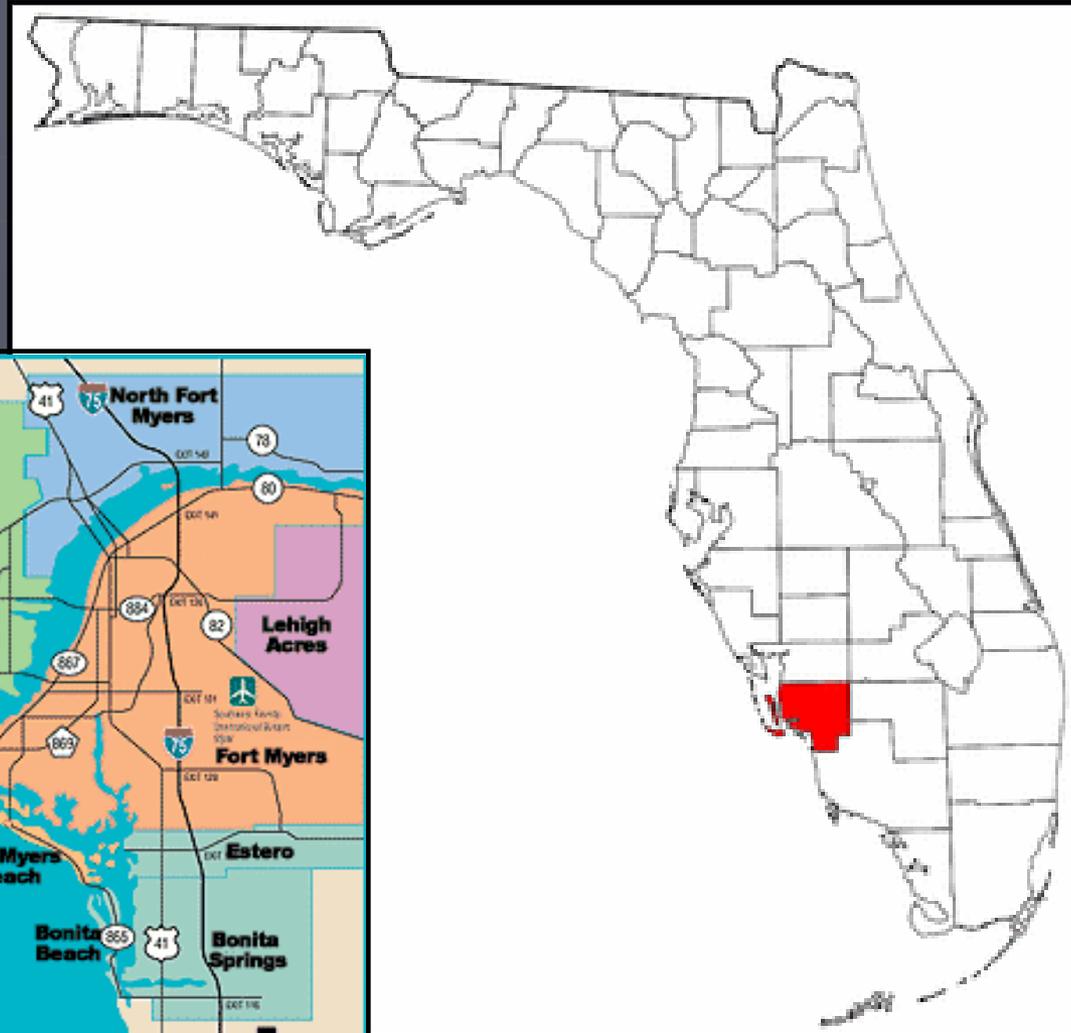
# Presentation Outline

- ▶ Lee County Background
- ▶ Situation and Need
- ▶ Identified Solution
- ▶ Technology Procurement and Installation
- ▶ Trouble-shooting
- ▶ Results and Benefits

# Who is LeeTran?

- ▶ Lee County Transit – Fort Myers, FL
- ▶ County-wide bus route network
- ▶ 18 bus routes
- ▶ Bus fleet of 61
- ▶ 3.1 million annual passenger trips
- ▶ Traditional transit rider and tourists

# Where is Lee County?



# Fort Myers Beach Dreaming...



# Fort Myers Beach Reality...



# Stakeholders

- ▶ Town of Fort Myers Beach
- ▶ Lee County Transit
- ▶ Lee County Department of Transportation
- ▶ State of Florida Department of Transportation



# Identifying the Problem

- ▶ Tourism Destination
  - Great beaches and warm, sunny winters
- ▶ Island Community with Limited Access
- ▶ Significant to Severe Congestion
- ▶ Limited Parking
- ▶ Driver Behavior
- ▶ Limited Transit



# Identifying the Needs

- ▶ Additional Passenger Information
  - Number one passenger request
  - Reduce the guessing
  - (When will the trolley be here?)
- ▶ Manage Congestion
- ▶ Give Transit the Advantage
- ▶ Reduce Road-Rage



# Packaging a Solution

- ▶ Intelligent Transportation Systems
  - Real-Time Passenger Information
  - First at stops, then mobile devices
- ▶ Increase Capacity by Reducing Headways
- ▶ Dedicated Transit Lane over Bridge
- ▶ Free Parking
- ▶ Marketing Campaign
- ▶ Luggage / Gear Racks



# ITS Requirements

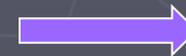
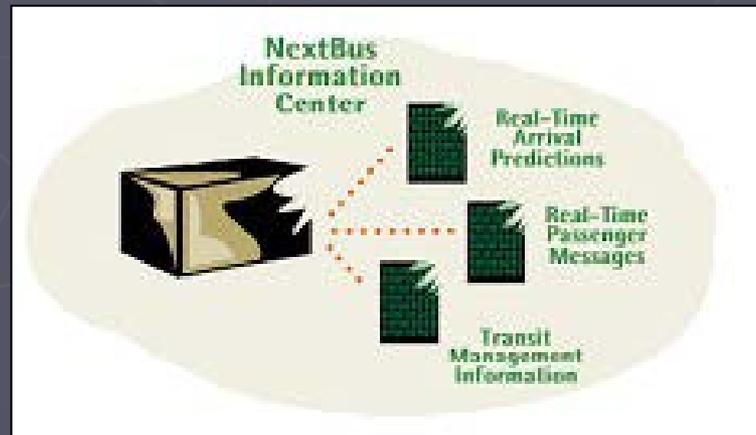
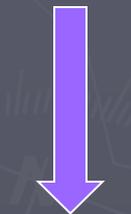
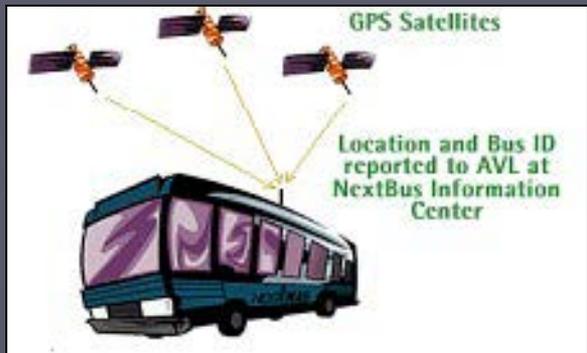
- ▶ Web-based and Cost effective solution
- ▶ Real-Time Information must be:
  - 80% accuracy for 10 minute predictions
  - 90% accuracy for 5 minute predictions
- ▶ Vendor support for changes and upgrades
- ▶ LED displays at four key stop locations
- ▶ Expandable to other routes, vehicles and information mediums

# Solution Procurement

- ▶ Solicitation - RFP
- ▶ Evaluation Criteria:
  - Stability
  - Recent Experience
  - References
  - Technical Proposal
  - Software Requirements
  - Price
- ▶ Initial 5 year contract with vendor



# Functional Diagram



# Installation and Testing

- ▶ Vehicle Installation
- ▶ LED Displays at Stations
  - Power Sources
- ▶ Initial learning period 1-2 months
  - Off-season time period
  - Quick accuracy
  - One route
- ▶ Test Launch and Monitor



# Initial Information Sources

- ▶ LED Displays
  - Arrivals and Current Time
- ▶ Internet
  - Arrivals and Interactive Map
- ▶ SMS (phase II)
  - Text



# Deployment

- ▶ Training
  - Dispatchers and Supervisors
  - Operators
- ▶ Marketing and Advertising
  - Brochures
  - Variable Message Boards
- ▶ Monitoring into Winter Season
  - Field Observations

# Reality

- ▶ Seasonal Congestion too Severe
- ▶ Software Miscalculations
- ▶ Vehicles "Dropping-out"
- ▶ Inaccurate Predictions
- ▶ Operational Frustrations
- ▶ Solar-powered Signs



# Fixing Reality

- ▶ Schedule-based Predictions
- ▶ Headway-based Predictions
  - "Loop Jobs"
- ▶ Accuracy Achieved



# Expansion

- ▶ Added Information via Mobile Device
- ▶ Two additional routes
  - Entire beach zone
- ▶ Entire dedicated fleet installation
- ▶ All stops
  - Stop ID numbers



# Pushback/Results

▶ "Our customers don't use smart phones"

▶ SMS Text messaging

▶ Website

▶ Smartphone

▶ Alerts



# Overall Improvements

- ▶ Improved Customer Satisfaction
  - No more guessing at 4 major stops
- ▶ Business Owner Satisfaction
  - Customer information
  - Extra business
- ▶ Accurate Real-time Information
- ▶ Positive customer feedback
- ▶ Ridership increase of 32%

# Additional Benefits

## ▶ Dispatch

- Vehicle location monitoring
- On-time performance

## ▶ Service Planning

- New travel time data source

## ▶ Additional Customer Information

- Service Advisories and Delays
- Planned service changes

# Cost, Time, Staffing, Budgeting

- ▶ Initial procurement of \$60,000
  - Hardware
  - Installation
  - First year operating costs
- ▶ Annual operating costs of \$12,000
- ▶ Lowered wireless costs after 5 years
- ▶ TIME!





# Thank You!

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