



UNITED STATES
DEPARTMENT OF TRANSPORTATION

Integrated Corridor Management Initiative

Evaluation of the Pioneer Demonstration
and

the Real-Time Transit Vehicle Data Demonstration

Lee Biernbaum

John A. Volpe National Transportation Systems Center

Research and Innovative Technology Administration

U.S. Department of Transportation

TransITech

March 30, 2011

Miami, FL

ICM Initiative National Evaluation

- ICM Initiative Evaluation of the Pioneer Demonstration
 - 9 Hypotheses
 - 8 Approaches to Answer them
 - National Evaluator: Battelle

- Evaluation Approach:
 - Before-and After
 - Qualitative and Quantitative

- Status
 - National Evaluation Framework in Review
 - Next up: Site-Specific Test Plans



National Evaluation: Hypotheses and Approaches

Hypotheses (ICM will...)	Approach
Improve Situational Awareness	Technical Assessment of the Capability to Monitor, Control, and Report on the Status of the Corridor
Enhance Response and Control	
Better Inform Travelers	Traveler Response Survey
Improve Corridor Performance	Quantitative Analysis of the Corridor Performance
Have Positive (or no) impact on Safety	
Have Positive (or no) impact on Air Quality	Air Quality Analysis
Have benefits Greater than Costs	Benefit-Cost Analysis
DSS will Provide a Useful and Effective Tool for ICM Project Managers	Evaluation of the DSS
<i>all of the above</i>	Institutional and Organizational Analysis



National Evaluation: Highlights for TransTech

- Diversion to Transit
 - Comparative Travel Times
 - Real-Time Information
- Traveler Behavior Survey- Transit User Subsample
 - Intercept Riders at Stations (or via license plates)
 - Travel Diary
 - Before and After Waves (at least one in each phase)
- Transit components in corridor mobility, air quality, DSS, and institutional/organizational issues



ICM Initiative Real-Time Transit Evaluation

- Evaluation of the ICM Real-Time Transit Vehicle Data Demonstration
 - 6+ Focus Areas
 - National Evaluator: Volpe Center

- Evaluation Approach:
 - Before-and After
 - Qualitative and Quantitative

- Status
 - Funding and Site Plans in Progress
 - Next up: Project Kickoff and Evaluation Plan



Real-Time Transit: Data Utility

- Logic Model of Transit Operations
 - Inputs ➡ Outputs ➡ Outcomes
 - Trace Potential Causes and Effects
- Allows Generation of Hypotheses
- Sets Outer Boundaries of Potential Improvements



Real-Time Transit: Data Quality

- Are the data sufficient to affect operations decisions?
- Quantitative and Qualitative Measurement of
 - Availability/Timeliness
 - Accuracy
 - Frequency
 - Fidelity



Real-Time Transit: Operational Impacts

- How have Operations Changed?
- Number of:
 - Buses Diverted
 - Breakdowns Avoided
 - Schedules Adjusted
- Tests the Logic Model
 - Suggests Refinements



Real-Time Transit: Benefit-Cost Analysis

- Benefits Quantified
 - Monetized
- Benefits Compared to Costs
 - Sensitivity Analysis
- Helps Decision-Makers
 - Identify Most Effective Solutions
 - Prioritize Among Collection of Good Projects
- All Projects Compete for Scarce Resources

Real-Time Transit: Policy Implications

- Identify Regulations Impacting the Demonstration
 - Preventing Achievement of Benefits
 - Where Additional Support Would Help
- Data-Sharing and Relation to other Programs
 - ICM
 - Cooperative Systems
- Professional Capacity Building



Real-Time Transit: Lessons Learned

- Identify Best Practices
- Good faith efforts that did not result in desired outcomes
- Unexpected Hurdles
- Preventable Issues
- Potential Risks



Real-Time Transit: Technology and System Performance

- **Conditional**

- If Deployment is not Sufficiently Successful

- Which components function as expected

- Which technologies require further development

- Feasibility of future operational tests

- After improvements
- Taking in Lessons Learned





UNITED STATES
DEPARTMENT OF TRANSPORTATION