



Meeting the Information Needs for Surface Transportation Operations

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Presentation Outline

- Background
- Need for National Investment
- Assessment of the Infostructure
- Vision of the National Infostructure
- Issues
- Summary

Background

- Improved Operations Is Critical to Maintaining Safe and Reliable Surface Transportation
- Information on System Condition and Performance Is Required for Improved Operations
- Our Recent Focus on Transportation Security Has Dramatically Increased The Focus on Operations and the Demand for Information
- Currently, We Are Virtually Blind in Terms of the Operating Condition of Our Transportation System

Need for National Investment

- Need National Investment in Highway and Transit System Monitoring That Will:
 - ◆ Improve Security of Surface Transportation System
 - ◆ Address Growing Congestion Problem
 - ◆ Support Improved Response to Weather Events
 - ◆ Facilitate National and Regional Traveler Information
- Focus Should Be on Supporting Local, and National Interests

Assessment of Infostructure

- Opportunities for Improved Operation
- Existing Infostructure
- Information Needs

Security Management

Opportunities

- Securing Critical Infrastructure
- Supporting Evacuation and Response
- Providing Traveler Information
- Supporting Long Term Operations



Existing Infrastructure

- Transportation Systems Currently Not Monitored for Security
- Limited Highway Surveillance Designed for Traffic Incident Detection and Signal Operations
- Transit Monitoring - AVL and Some Video
- Limited Transportation and Emergency Management Integration

Security Management Information Needs

- Reporting of Disruptions on Key Facilities Nationwide
- Real-Time Monitoring of Traffic and Transit Operations in Major Metropolitan Areas
- Surveillance of Critical Infrastructure
- Surveillance of Other Locally Critical Facilities
- Sharing of Information

Congestion Management

Opportunities

- Managing Traffic
- Responding to Incidents
- Managing Work Zones
- Providing Traveler Information



Existing Infrastructure

- <25% of Urban Freeways Under Surveillance
- Little Arterial Surveillance
- Only a Third of Our Largest Transit Systems Have Deployed AVL

Congestion Management Information Needs

- Reporting of Capacity Restricting Events (Accidents, Incidents, Weather, Construction) Nationwide
- Monitoring of Traffic and Transit Conditions in Major Metropolitan Areas
- Monitoring of Other Locally Determined Facilities
 - ◆ Smaller Metro Areas
 - ◆ Key Interstate Links
 - ◆ Special Event Facilities

Weather Management



Opportunities

- Improving Ice and Snow Management
- Supporting Hurricane Evacuation
- Providing Hazard Warnings
- Providing Traveler Information

Existing Infrastructure

- Regional Forecast From the Weather Service
- One Road Weather Station per 133 NHS Miles
- Isolated Fog Detection
- No Real Evacuation Route Monitoring



Weather Management Information Needs

- Improved Nationwide Forecasting
- Monitoring of Other Locally Determined Facilities
 - ◆ Snow and Ice Routes
 - ◆ Hurricane Evacuation Routes
 - ◆ Fog-prone Areas
 - ◆ Flood-Prone Areas

Traveler Information

Opportunities

- Support Improved Safety, Security and Mobility
- Improve Travel Reliability
- Build Base for Private Enterprise



Existing Infrastructure

- >300 Phone Services and 200 Traveler Information Websites
- Most Large Metropolitan Areas Have Some Sort of Private Information Services
- Services are Limited by Poor Coverage/Data

Traveler Information Needs

- Accurate and Timely Information on:
 - ◆ Incident Location and Duration on All Highways
 - ◆ Travel Times or Travel Speeds on Key Highway Links
 - ◆ Weather and Road Condition Information on All Highways
 - ◆ Arrival Times of Transit Vehicles and Status of Stations

National Transportation Infostructure

Short Term Vision

- Statewide Reporting of Incidents
- Monitoring of Freeways and Principal Arterials in Major Metro Areas
- Monitoring of Major Rail and Bus Transit Systems in Major Metro Areas
- Surface Transportation Specific Weather and Road Condition Information
- Monitoring of Other Key Facilities

National Transportation Infostructure

Long Term Vision

- Vehicle Probe Data System-wide
- Advanced Surveillance on Arterials/Intersections
- Transit Monitoring Standard
- National Surface Transportation Weather Observation and Forecasting
- Transportation Security Systems

Issues Effecting Infostructure Deployment

- Costs
- Reliability
- Purpose vs. Utility
- Ownership
 - ◆ Systems
 - ◆ Information
- Technology

Summary

- Operating a 21st Century Surface Transportation System Requires Real-time Information on System Conditions
- Currently Our Ability to “See” What Is Happening on the System Is Limited
- A National Initiative Is Needed to Provide Critical Information for Security Management, Congestion Management, Weather Response, and Traveler Information
- This Initiative Will Support Both National and Local Transportation Management Needs