Agenda

• Briefing Objective and Overview
• Statement of the Problem
• Moving Towards a Sustainable TIM Program
• Action Plan
Overview of Traffic Incident and Event Management

- Effective TIM programs form the basis for preparedness for other transportation emergencies
- All effective programs include close coordination with public safety officials
Overview of Typical Traffic Incident Management Activities

<table>
<thead>
<tr>
<th>TIM Strategic Activities</th>
<th>TIM Tactical Activities</th>
<th>TIM Support Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Staffing/Resourcing</td>
<td>• Agency Notification</td>
<td>• Data Collection</td>
</tr>
<tr>
<td>• TIM Teams</td>
<td>• Resource Dispatch</td>
<td>• Data Integration</td>
</tr>
<tr>
<td>• Policies and Procedures</td>
<td>• Scene Setup</td>
<td>• Data Sharing</td>
</tr>
<tr>
<td>• Training</td>
<td>• Device Activations</td>
<td>• Traveler Information</td>
</tr>
<tr>
<td>• Vehicle Purchases</td>
<td>• Traffic Diversions</td>
<td>• After Action Reviews</td>
</tr>
<tr>
<td>• System Deployment</td>
<td>• Queue Monitoring</td>
<td>• Cost Management</td>
</tr>
<tr>
<td>• Software Deployment</td>
<td>• Investigative</td>
<td>• Cost Recovery</td>
</tr>
<tr>
<td>• Asset Purchases</td>
<td>Procedures</td>
<td></td>
</tr>
<tr>
<td>• Asset Typing</td>
<td>• Victim Extrication and transport</td>
<td></td>
</tr>
<tr>
<td>• Resource Typing</td>
<td>• Vehicle Clearance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• HAZMAT Mitigation</td>
<td></td>
</tr>
</tbody>
</table>
Background

• Current legislation enabling first responders to collect fees is enacted at the local level.

• An opportunity to recover costs is with modification to state statues that stipulate recovery of costs for damages to infrastructure.
  – Tactical TIM costs should be viewed as part of the recovery process, including first responder costs.
Statement of the Problem

• TIM will continue to be required
  – Over 5 million reported crashes in 2009
  – Nearly 31k fatalities and over 1.5 million injured

• A minimum response of police, fire/rescue and towing with coordination with transportation
Statement of the Problem

• Fiscal impacts of TIM will continue
  – Tactical costs can exceed $200k
  – There are no tabulations of costs associated with strategic and support activities

• Other costs such as insurance, responder training, lost wages by injured first responders and other societal costs are unknown
Cost Recovery Defined

- Reimbursement received from outside sources
- Examples: Federal grant sources, MPOs, or private interest
- Cost recovery vs. cost substitution
Cost Management Defined

• There are four fundamentals of cost management
  – Cost Planning
  – Cost Tracking
  – Cost Analysis
  – Evaluation and Decision
Cost Management Defined

• There are four fundamentals of cost management
  – Cost Planning
    • Estimating future costs
    • Budgeting
Cost Management Defined

- There are four fundamentals of cost management
  - Cost Tracking
    - Discrete coding of activities
      - Timesheets
      - Vehicle mileage
      - Supply purposes
    - Cost tracking represents an opportunity to use NIMS for TIM
Cost Management Defined

• There are four fundamentals of cost management
  – Cost Analysis
    • Data processing
      – Trends over time
      – Per-unit measures
      – Output performance measures
Cost Management Defined

- There are four fundamentals of cost management
  - Evaluation and Decision
    - Future programming considerations
    - Information for cost planning
    - Resource allocations
    - Asset management
Cost Management
Case Study – South Dakota

• Implemented an ABC system as part of a management performance program known as Collaborative Performance Management
• Helps the department run its operations more efficiently
• Results
  • Lower the lifetime cost of ownership and operation of specific assets.
  • Allows monitoring of the effectiveness of the department’s transportation services.
  • Maintains the knowledge base as staff retires.
  • Prepares performance-based business plans and budgets.
Cost Management Defined

• Costs can be categorized in three ways
  – Fixed costs
  – Variable costs
  – Mixed costs
Moving Toward TIM Program Sustainability

- Implement accounting procedures that allow for a true understanding of all TIM Costs
- Consider activities that allow costs to be recovered
A Roadmap for TIM Cost Management

• Asset Utilization
  – Consists of the process to understand costs of devices, facilities and other physical, non-human TIM program elements
Asset Utilization & Management

- Assets are defined as quantifiable physical objects, and resources are defined as people and time.
- A decision-making framework focused on the purchase, construction, maintenance, replacement, and retirement of fixed assets.
# Asset Utilization

## Policy Goals and Objectives, Performance Measures

Examples: Transportation System Performance (including Customer Perceptions), Economic, Social/Environment

## Planning and Programming

Options, Project Evaluations, and Tradeoff Analyses Across (Examples)

<table>
<thead>
<tr>
<th>Asset Classes</th>
<th>Investment Categories</th>
<th>Funding Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavement</td>
<td>System Preservation</td>
<td>Capital</td>
</tr>
<tr>
<td>Bridge</td>
<td>Operating Efficiency</td>
<td>Operations</td>
</tr>
<tr>
<td>ITS Components</td>
<td>New Capacity</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Transit</td>
<td>Safety</td>
<td></td>
</tr>
<tr>
<td>Rail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Decisions on Allocating Agency Resources*
Examples: Financial, Human, Information

## Program Delivery

Examples: Inter-Government Agreements, Outsourcing, Procurement Options

## Systems Monitoring and Performance Results

### Quality Information and Analysis
Examples: Inventory, Condition, Performance
A Roadmap for TIM Cost Management

- **Resource Utilization**
  - Consists of the process to understand costs associated with personnel (including both in-house and consultant) situations
Resource Utilization

Transportation TIM Resource Management

- Strategic
  - Studies/Evaluations
  - Planning/Program Management
  - TIM Teams

- Tactical
  - Field Operations
  - TMC Operations
  - ITS Deployment

- Support
  - After Action Reviews
  - Cost Management
  - Cost Recovery
A Roadmap for TIM Cost Management

- **Performance Measurement**
  - Consists of understanding what benefit assets and resources are providing to the system or what implications that lack of assets and resources are having on overall performance.
Performance Measurement

- FHWA has been researching and developing information on TIM performance measures
  - A knowledge base has been developed or use by practitioners

# A Roadmap for TIM Cost Management

<table>
<thead>
<tr>
<th>Category</th>
<th>Start-up Plan</th>
<th>Transition Plan</th>
<th>Established Program</th>
</tr>
</thead>
</table>
| **Asset Utilization**     | • Determine TIM Inputs for asset management  
                          • Collect baseline requirements                                                   | • Complete TIM system inventories  
                          • Maintain maintenance costs and operating costs for historical reference               | • Use asset life-cycle and replacement cost estimates to plan for costs on an annual basis |
| **Resource Utilization**  | • Determine discrete TIM functions by discipline and by position  
                          • Determine shared resources and interdependent resources                           | • Baseline employee capabilities versus each identified discrete function  
                          • Identify gaps in functions provided  
                          • Develop resource training lifecycle  
                          • Include systems to include discrete coding functions for direct and indirect       | • Use cost center accounting to track and analyze TIM resource costs  
                          • Assign a charge code for TIM strategic, tactical and support activities           |
| **Performance Measurement** | • Determine how the NUG should be measured  
                          • Determine what input and output gaps exist for NUG reporting                     | • Implement a NUG Performance Measurement Program  
                          • Collect baseline information to establish a performance index                     | • The performance measures from other sections                                       |
Options for Recovering Costs

• Seek and support legislative actions that enable recovery
• Examine opportunities for public-private partnerships
Types of Legislation

- **Emergency Medical Services** – costs associated with response and patient transport.
- **Fire** – costs associated with response and recovery activities. Actions essential to the survival of the vehicle occupants, such as extrication.
- **HAZMAT** – costs associated with the emergency response and recovery efforts due to the release of hazardous materials from responsible parties.
Types of Legislation

- **Infrastructure** – costs associated with the repair or replacement of the roadway or roadway components from liable drivers.
- **Law Enforcement** – costs associated with response and/or crash investigation from involved parties or insurance companies.
- **Transportation** – costs associated with response and traffic control.
**Legislation Awareness**

- It is important to use caution when discussing cost recovery legislation.

<table>
<thead>
<tr>
<th>Proponent Viewpoints</th>
<th>Opponent Viewpoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>The alternative is to reduce service</td>
<td>Constitutes double taxation</td>
</tr>
<tr>
<td>Represents a true user fee</td>
<td>Increases insurance rates</td>
</tr>
<tr>
<td>Taxes are for making the resource available only</td>
<td>Is ineffective</td>
</tr>
<tr>
<td>The reduction in property and other tax revenues has placed additional stress on the emergency response community</td>
<td>Increases citizen financial stress</td>
</tr>
<tr>
<td>Education can change the viewpoint of the public</td>
<td>Re-victimizes those affected by vehicle crashes</td>
</tr>
<tr>
<td>Responder and motorist safety can be compromised</td>
<td>Could cause motorists not to seek emergency services</td>
</tr>
<tr>
<td>There are no alternatives</td>
<td>Is not successful</td>
</tr>
<tr>
<td></td>
<td>Creates a negative public opinion of government</td>
</tr>
</tbody>
</table>
Public-Private Partnerships

• Many transportation agencies already use these partnerships with safety service patrol programs

• Expand TIM cost considerations and seek these types of partnerships:
  – The sale of traffic data to private vendors
  – Implementation of HOT lanes and the inclusion of TIM costs as a part of the calculated costs
Planning for TIM

• Include the outcome of a formalized TIM program into a planning for operations strategy
  – Alternative Improvement Strategies
  – Evaluation and Prioritization of Strategies
  – Development of Transportation Plans
  – Project development process
  – Systems operations
  – System Performance
Planning for TIM

• Connecting TIM with State and Regional Transportation Improvement Plans
  – Congestion Mitigation and Air Quality
  – National Highway System
  – Surface Transportation Program
Planning for TIM

• Creating Local Line Items
  – Helps anticipate costs
  – Helps administration, politicians and public account for and acknowledge TIM
  – Helps with performance measurement
Action Plan

• Support and Execute TIM programs that have strategic direction and multi-disciplinary participation
• Implement the Cost Management Roadmap
• Coordinate with DOT executives and industry points of contact to identify and vet cost recovery methods