Roles of TMCs in Incident Management on Managed Lanes

INTRODUCTION AND OVERVIEW

MICHAEL TANTILLO
VHB
Agenda

- Introduce Topic and Guidebook
- Definition of Managed Lane
- Importance of TIM in Managed Lanes
- Managed Lane Operating Environment
- Unique aspects of TIM in the Managed Lane Environment
Topic Introduction

- Narrow topic – nexus of:
  - Roles of Transportation Management Centers
  - Incident Management
  - Managed Lane Environment
Managed Lane Definition

- **Formal Definition** - Highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions.

- **Guidebook’s Definition** - Freeway managed lanes with actively managed operations and access restrictions that co-exist adjacent to non-managed general purpose lanes.

  - A “Freeway within a Freeway”
Importance of TIM in Managed Lanes

- Incidents affect high priority vehicles within the transportation network
  - Transit vehicles, buses, vanpools, & carpools
  - Drivers who place a high monetary value on time

- Higher vehicle occupancies → greater number of people affected by an incident

- Reliability is the key to success of managed lanes
Operating Environment - Physical Separation

- Continuous Access
- Shoulder
- Painted Buffer
- Electronic “Invisible” Barrier
- Plastic Post Barrier
- Permanent Physical Barrier
- Movable “Zipper” Barrier

Source: FHWA
Operating Environment - Access Control

- High Occupancy Vehicle (HOV)
- Express Toll Lane (ETL)
- High Occupancy / Toll (HOT)
- Bus / Transit
Unique Aspects of TIM in Managed Lanes

- Enhanced Traffic Management Capabilities
- Enhanced Operational Control
- Physical Access Constraints
- Interagency Coordination
- Financial Considerations
Traffic Management Capabilities

- Managed Lanes typically have enhanced TMC capability and functionality to enable proactive management
  - Cameras & Detection
  - Dedicated Personnel
  - Faster detection → faster response
Enhanced Operational Control

- Managed Lanes may have operational tools that can be controlled by the TMC
  - Variable speed signing
  - Lane control signs
  - Zipper barriers
  - Ability to adjust/suspend tolls
  - Ability to adjust/suspend eligibility requirements
  - Access gates for closure/diversion
Physical Access Constraints

- Separation between “two freeways”
  - Painted barrier
  - Movable barrier
  - Permanent physical barrier

- Barrier may impact responder access

- Barrier may impact establishment of diversion
Interagency Coordination

- Multiple agencies operating within the right-of-way
  - Two public-sector agencies
  - Private operator of managed lanes
- Close coordination is needed for...
  - Design and Construction
  - Normal Operations
  - Routine Maintenance
  - Traffic Incident Management
- Incidents may affect both general purpose and managed lanes
Some TIM strategies have financial implications:

- Suspension of tolls and opening facility to all
- Denying access to toll-paying vehicles not meeting occupancy threshold
- Complete closure
- Adjusting toll rates to discourage use during incident

All priced managed lane operators have financial obligations to meet

Financial needs must be balanced with TIM needs
Privately Operated Managed Lanes

- Strong incentive to minimize downtime
- Protection of proprietary information
- May not have long-standing relationships with response agencies
- Operator should negotiate agreements in advance
Case Study: I-495 Express Lanes

- Privately operated HOT lane facility adjacent to Virginia DOT-maintained general purpose lanes
- Separate TMCs
- Operator and Virginia DOT negotiated a detailed operating agreement
  - Covers a wide variety of potential scenarios
  - Communication protocols in place
Case Study: I-495 Express Lanes

- Agreement also covers...
  - Protocols for suspension of tolling in emergency
  - Ability to override DMS messages
  - Unified Command Team for serious incidents
  - Structure and protocol for non-critical communications