Regional Concept of Transportation Operations:
The Hampton Roads Experience

Presented by: Camelia Ravanbakht, PhD

Talking Technology & Transportation (T3) Webinar
July 25, 2007
Overview

• Regional Background
• RCTO and the Planning Process
• Building an RCTO for Incident Management
• RCTO Development Process
• Data Analysis
• RCTO Successes/Challenges
• Next Steps
The Hampton Roads Region

- Located in SE Virginia
- 10 cities and 6 counties, including Virginia Beach, Norfolk, and Williamsburg
- Over 1.6 million residents
- Economy driven by the military, ports, and tourism
- Connected by bridges/tunnels
The Hampton Roads Region

- Military and non-military peak periods
- Incidents in tunnels and on bridges tend to cause major delays/backups
- Large number of special events
- Heavy dependency on travel by personal vehicle
- Key Eastern Seaboard evacuation routes pass through region
**Congestion Management Process**

**DATA**
- **VDOT TED**
  - 15-min volumes
  - Permanent stations
  - Temporary stations
  - Classification
  - Crash data
  - roadway data
- **ADMS**
  - Volumes
  - Incident data
- **Tunnels**
  - Volumes
  - Incident data
- **Localities**
  - Volumes
- **HRPDC**
  - Travel time
  - Future volumes
  - Future lanes

**STRATEGIES**
- **ITS/Operations**
- **TDM**
- **Transit**
- **Capacity**

**PROJECT SELECTION**
- **TIP**
- **RSTP/CMAQ**
- **Long Range Plan**

**Performance Evaluation**
Operations Planning

- Over 50% of CMAQ funds allocated to ITS/Operations
- $152 million in Long Range Plan for ITS/Operations
- ITS Strategic Plan
  - First completed in 1995
  - Updated in 2000 and 2004
  - Expands Hampton Roads ITS program from a jurisdictional approach towards an integrated regional program
  - Regional architecture
Operations Planning

• Hampton Roads Smart Traffic Center
  – Traffic, incident, and emergency management
  – Regional clearinghouse for traffic and traveler information collections and dissemination
  – Communications backbone for regional coordination and integration

• City STCs
Multi-car accident on a major commuter bridge...
Building an RCTO for Incident Management

• Motivation
  – High profile incidents at tunnels and bridges causing major delay.
  – MPO Board requested staff and VDOT to improve incident management.

• Structure
  – Expanded ITS Stakeholders to public safety and emergency management.
  – Combined members of both ITS and Highway Incident Management committees.
  – Created RCTO Working Group.
  – Developed RCTO Charter.
Participants in RCTO Working Group

- Hampton Roads MPO
- Virginia Department of Transportation
- Virginia State Police
- Local fire & rescue
- Local traffic engineers & Public Works
- Local law enforcement
- Environmental & HazMat
- Local emergency medical services
- Towing & recovery (to be included)
Endorsed by MPO in October 2005.
Guide region’s stakeholders in providing well-coordinated traffic incident management.
Expand stakeholder group.
Increase awareness of quick clearance principles.
Provide cross-agency training
Conduct post-incident reviews.
RCTO Objectives

• Derive an RCTO document through a series of collaborative activities.
• Describe the desired state of transportation operations in Hampton Roads
• Formalize several existing regional Traffic Incident Management (TIM) initiatives
Guiding Principles

- Broaden Operational Coordination
- Elevate Quick Clearance Principles
- Expand and enhance existing MOU
- Battle congestion caused by crashes and other disabled vehicles.
**RCTO Performance Measures**

- Diversion Response – How are motorists responding to information
- Clearance Time – by incident type
- Lane Blockage – Tracking the number of lanes blocked through the timeline of an incident
High Incident Locations

Top Ten Interstate segments with the most incidents, 2006
Safety Service Patrol Assistance by Type

- Disabled, 574, 75%
- Accident, 70, 9%
- Abandoned, 57, 7%
- Debris, 37, 5%
- Other, 14, 2%
- CBA, 4, 1%
- Unfounded, 5, 1%
- Special Event, 0, 0%
- Vehicle Fire, 2, 0%
- Med Emergency, 2, 0%

Source: VDOT
Incident Duration, 2006

Source: VDOT
Incident Clearance

Source: VDOT
ITS/Operations Funding in TIP

- Over 50% of CMAQ funds allocated to ITS and Operations projects
- In current TIP, over $30 million of CMAQ funds allocated to:
  - RCTO
  - CAD Integration
  - Incident diversion plan
  - Data Research Partnership with Universities
  - AVL for Emergency Service Vehicles
  - Several signal systems & other ITS-related projects
**RCTO Successes**

- Workshop with high-level management in state police, fire/rescue, local law enforcement, VDOT, and MPO
- Post-incident review meetings
- Peer-to-peer exchange with Arizona
- HazMat reporting document
- Planning joint outreach for Move it Law
- National Highway Institute class on traffic incident and roadway emergencies
- CMAQ Funds for RCTO document development
Challenges

- Educating policy level officials and stakeholders
- Competing for funding with other projects
- Project deployments and cost overruns
- Institutional issues
- Technical standardization
- Data quality
- Evaluation tools
Next Steps

- Continue monthly RCTO Working Group meetings
- Continue quarterly reporting to MPO and elected officials
- Complete RCTO Document
- Training
- Coordinate arterial/freeway operations
- Continue the work on “Bringing Planning and Operations” together.
For More Information:

Camelia Ravanbakht, PhD
Hampton Roads Planning District Commission
723 Woodlake Drive
Chesapeake, VA 23320
757.420.8300
email: cravanbakht@hrpdcva.gov
website: www.hrpdc.org