VDOT’s Operations Program

Stephany Hanshaw
Statewide TOC Program Manager
Operations Division
Establishing the Operations Division

• Operations and Security Division renamed to: OPERATIONS DIVISION

• Security and ITS remain essential components of VDOT’s Operations program, but focus is on the overall OPERATIONS of Virginia’s roadway network

- Mr. Gregory Whirley, VDOT Commissioner
  - Mr. Charlie Kilpatrick, Chief Deputy Commissioner
    - Mr. Garrett Moore, PE, Chief Engineer
      - Mr. Mohammad Mirshahi, PE, Deputy Chief Engineer
        - Mr. Dean Gustafson, PE, PTOE, State Operations Engineer
Operations Division
Key Drivers for Change

• Alignment with Regions
• Statewide TOC and ATMS RFP
• Prioritize Tunnel Investment Plan recommendations
• Develop a Moveable Bridges Investment Plan
• Enhance the Systems Operations Research Advisory Committee (SORAC) products by developing operations-specific proposal
• Prepare Highway Safety Improvement Plan funded project lists with Traffic Engineering that invest in safety features
• Develop an ITS Project Cost Estimating System
• Develop and formalize the ITS Architecture training program
• Finalize Statewide ITS Master Plan
FY 13 Business Plan
Operations Deployment

• Award a statewide ITS design on-call contract
• Advertise regional ITS construction on-call contracts
• Design over $1 M worth of ITS Projects on-the-shelf
• Recommend investment of approximately $15 million to upgrade and/or replace ~150 DMS statewide by June 2013
• Assist with the I-66 Active Traffic Management project on I-66
• Display real-time travel times in major corridors in Northern Virginia & Hampton Roads
FY 13 Business Plan – Field Operations

• Support continued use of safety service patrols along major interstate corridors

• Develop and deliver incident-management courses to first responders around the Commonwealth to improve quick clearance of incidents

• Re-establish the VDOT Situation Room to provide statewide 24/7 situational awareness and coordination of resources
VDOT’s Statewide Operations Program

TOC Components

Five Regions and TOCs

- Northern (Fairfax)
- Eastern (VA Beach)
- Central (Richmond)
- Northwest (Staunton)
- Southwest (Salem)

Transportation Operations Center

Advanced Transportation Management System (ATMS)

- Hardware
- Software
- Communications Equipment

Cameras

Message Signs

Portable Message Signs

Weather Stations

Shoulder/Lane Control

Traffic Detectors

Ramp Meters

HOV Gates

Overheight Detection

Highway Advisory Radio (HAR)
VDOT’s Statewide Operations Program
Transportation Operations Centers (TOCs)

• Five TOCs – one per VDOT Region

• Primary hub for all traffic management and emergency response activities including moveable bridge, tunnel, and reversible travel lane operations

• Houses 24/7 mission critical systems supporting VDOT Operations

• Provides information and situational awareness to VDOT management and public

• Will facilitate future technology initiatives such as Active Traffic Management and Connected Vehicles
VDOT’s Statewide Operations Program
TOC Devices and Supporting Assets

Transportation Operation Centers rely on three key components

- **Advanced Transportation Management Systems (ATMS)**
  - Complex system of hardware & software at TOCs that control field devices and manage information

- **Telecommunications**
  - VDOT owns extensive fiber optic networks in NOVA & Hampton Roads (338 miles)
  - Rural Regions rely heavily on leased telecommunications
  - Fiber optic resource sharing used when beneficial

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<tr>
<th>TOC</th>
<th>CCTV</th>
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<th>HAR</th>
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VDOT’s Statewide Operations Program
Operations Statistics

- **System Mileage**
  - Interstate – 1,120
  - Primary – 7,996
  - Secondary - 48,809
- **7 Tunnels**
- **8 Moveable Bridges**
- **2 Ferries**

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<tr>
<th>TOC</th>
<th>Incidents*</th>
<th>Weather Events*</th>
<th>Planned Events*</th>
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* Source: VA Traffic, 2011
VDOT’s Statewide Operations Program
Supporting Programs

Safety Service Patrols

• 50 patrol routes covering 503 miles of Interstate
  • 30 routes and 250 miles are 24/7
• Reduction in congestion and incident clearance times.
• Strong customer service image for VDOT
• Reduces secondary accidents

Weather Management

• Contracts for surface meteorological forecasting services
• Deployment of RWIS and mobile ITS units
• Established evacuation plans and supporting contracts/equipment
Transportation Video & Data (TVD) Services

VDOT’s New 511 Program

• New 511 service launched May 18, 2012

• New website offers free streaming video to the public
  – www.511Virginia.org

• Service disseminates traffic info through several outlets:
  – Web and mobile applications (iPhone and Droid)
  – Interactive Voice Response (IVR) phone system
  – Information displays at Welcome Centers
  – Twitter and email alerts
  – Travel Time road signs in Hampton Roads
Transportation Video & Data (TVD) Services
Key Business Goals

- Obtain innovative solutions from the private sector to improve VDOT’s traveler information system
- Comprehensive approach: provide all 511 services, and video and data distribution services
- Award long-term contract (up to 9 years) to encourage sponsorship opportunities
- Simplify the Video and Data Distribution architecture at each TOC
- Generate revenue from 511, sponsorship, other opportunities
Transportation Video & Data (TVD) Services

Key Features

511 Phone Service (IVR)
- New voice recognition engine
- Directional recognition
- Travel times

511 Website & Mobile App
- Redesigned site
- Live streaming video (15 frames/sec)
- Mobile app with live traffic information
- Travel times

Video / Data Sharing
- Free video access through web service
- Includes attribution to VDOT
- Operations data publicly available

511 Highway Signs
- Sponsorship acknowledgements will be added to 511 signs
Statewide TOC / ATMS Procurement

In 2012, VDOT released a Request for Proposals for a single, statewide service contract that includes:

• Financing, developing, implementing, operating, and maintaining a new state-wide ATMS platform

• Establishing interoperability across the TOCs

• Maintaining ITS/IT field devices and communications systems

• Operating TOC systems, dispatch services, incident management programs, and emergency operations using consistent procedures

• Managing the operations of VDOT’s Safety Service Patrol (SSP) program
Statewide TOC / ATMS Procurement
Objectives and Key Deliverables

- Interoperability of 5 TOCs
- Increase operational efficiency & safety
- Qualified team under one contract
- Consistent statewide operating procedures while accommodating regional characteristics
- Performance/Outcome based contract
- Implement sponsorship and revenue generation opportunities
- Provide contracting flexibility for new innovations, new deployments and initiatives
- Protect and enhance current asset value/investment
Statewide TOC / ATMS Procurement
Proposed Project Structure

Virginia Department of Transportation
State Program Oversight
Day-to-Day Management at Regional Level

Contractor

1. TOC Floor Operations
2. ITS Field Maintenance
3. Safety Service Patrol
4. ATMS and Technology Support
5. Program Management
6. Operation Support Services
### Statewide TOC / ATMS Procurement
### Proposed Project Schedule

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<th>Procurement Phase</th>
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<td>Issue Request for Information (RFI) document</td>
<td>January 18, 2012 (Completed)</td>
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<td>RFI questions submitted</td>
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Questions

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