



## **Joint Commission on Transportation Accountability**

### **Presentation on VDOT's Tunnel Facilities**

**November 30, 2010**

**Charlie A. Kilpatrick  
Constance S. Sorrell**

# Topics

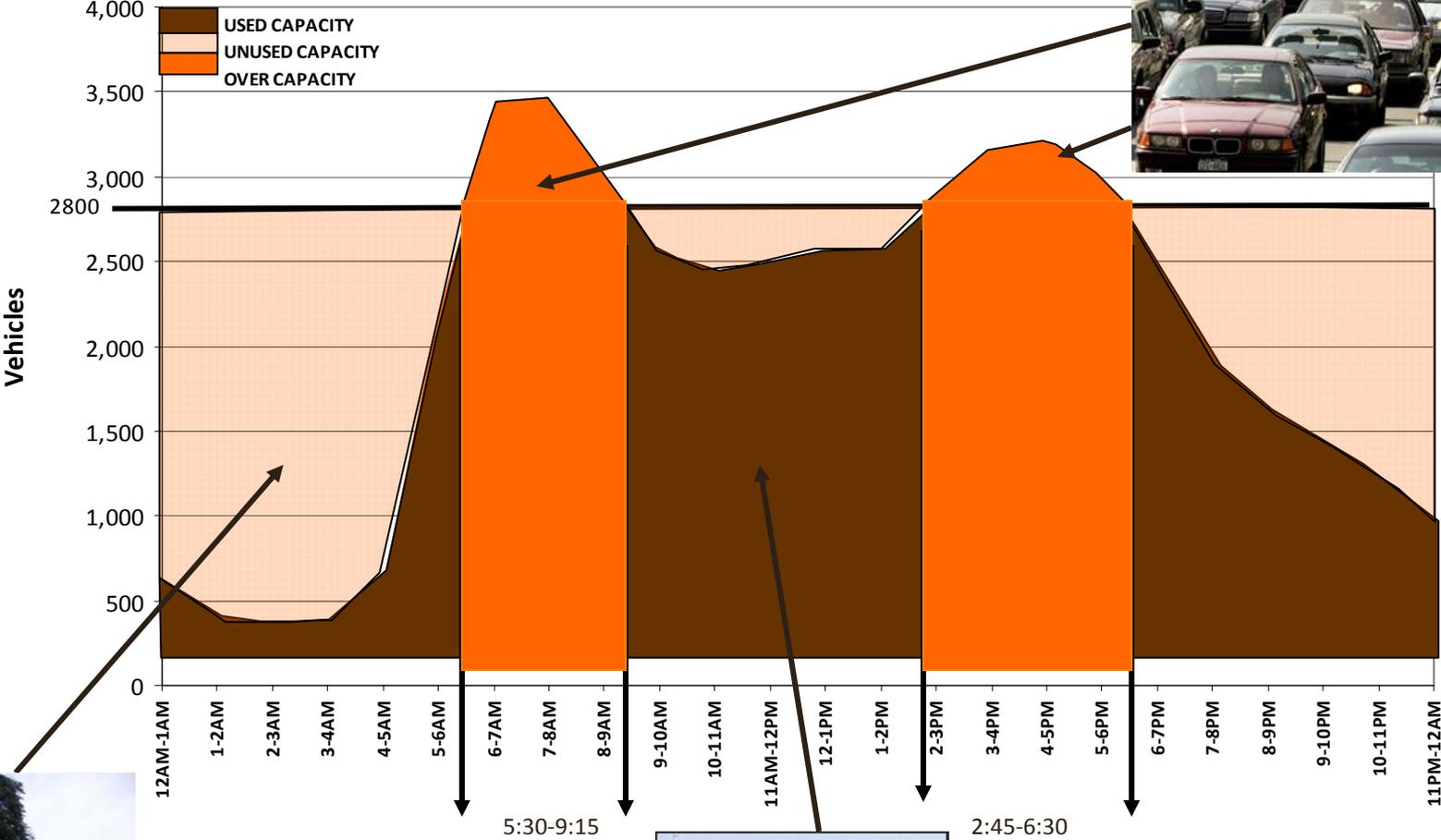
- **HRBT Tunnel Capacity**
- **Tunnel Operating & Maintenance Costs**
- **Tunnel Signage**
- **Hampton Roads Traveler Information**

# Hampton Roads Tunnel Capacity

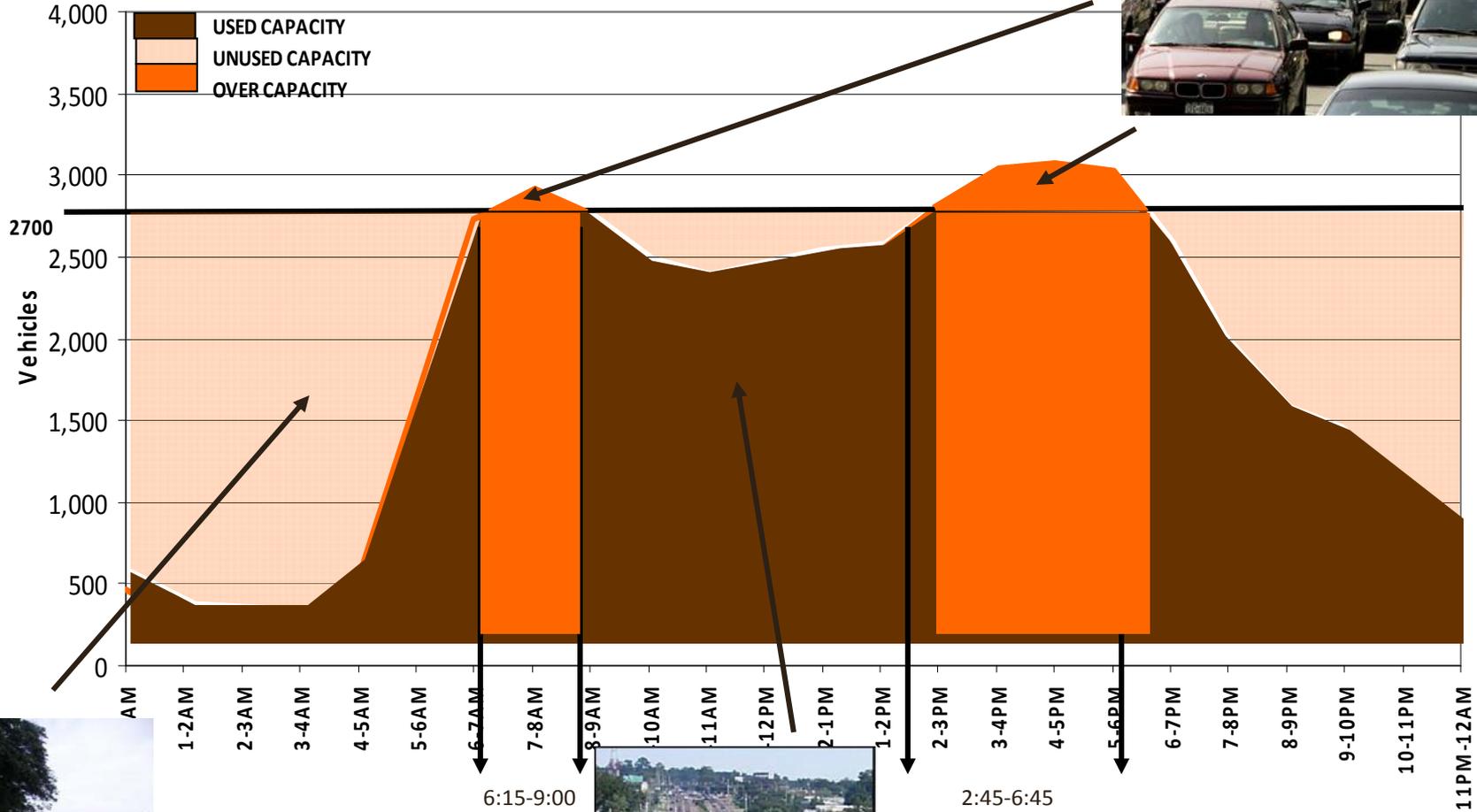
- 1350 – 1400 vehicles per hour per lane is optimal throughput rate without any incidents
- During high peak times, capacity greatly exceeds availability
- HRBT tunnel capacity\*
  - VPH = 2800 average breakdown point EB
  - VPH = 2700 average breakdown point WB
- EB approaching 4-hour daily peak window period in both AM (5:30 AM – 9:15 AM) & PM (2:45 PM – 6:30 PM)
- WB 4-hour daily peak window period in PM (2:45 – 6:45 PM)

\*Speed and traffic volume average data represents a years worth of averaged weekday traffic. Breakdown points were derived from analyzing a weeks worth of data.

# Annual Average HRBT Eastbound Weekday Traffic Counts



# Annual Average HRBT Westbound Weekday Traffic Co



# Tunnels Needs Assessment

- 2009 Biennial Report “On the Condition of and Investment Needed to Maintain and Operate the Existing Surface Transportation Infrastructure for FY 2011 and FY 2012” [House Document 238 (2009)]
  - **Based on an asset management methodology as required by §33.1-13.02 of the Code of Virginia**
  - **Identifies the investment needed to maintain and operate the network for which VDOT is responsible**

# Tunnel Needs Assessment

- **Identified approximately \$63 million for all 6 tunnel facilities in September 2009 for asset investment work (major rehab/restoration)**
  - **Does not include capital improvement projects**
- **Fire, Life, and Safety Replacements & Upgrades**
  - **Includes other major mechanical and industrial system rehabilitation work, such as replacing 30 year old communications lines and software systems, replacing ceiling tiles, lighting fixtures, and valves, and installing new drives**
- **Ongoing inspection of the tunnels are separate budget items and performed by the Structure and Bridge staff**
  - **Additional needs are identified through these inspections**
- **Work is being planned and scheduled for all tunnel facilities over the next two years based on the following budgeted amounts:**
  - **FY 2011 – \$44 Million**
  - **FY 2012 – Under Development**

# VDOT Underwater & Mountain Tunnels FY2011 Budget

- **FY 2011 Operations Budget**

- Big Walker Mountain Tunnel – \$1,535,819
- East River Mountain Tunnel – \$1,535,819
- ERT Downtown – \$5,209,976
- ERT Midtown – \$3,078,376
- Hampton Roads Bridge Tunnel – \$4,857,236
- Monitor-Merrimac Memorial Bridge Tunnel - \$3,806,124
- Rosslyn Tunnel – \$212,000
- TOTAL – \$20,235,350

- **FY 2011 Tunnel Investment Budget**

- Big Walker Mountain Tunnel – \$400,000
- East River Mountain Tunnel – \$400,000
- ERT Downtown – \$4,830,068
- ERT Midtown – \$897,930
- Hampton Roads Bridge Tunnel – \$13,876,075
- Monitor-Merrimac Memorial Bridge Tunnel – \$4,176,415
- TOTAL – \$24,580,488

# HRBT Comparison to Baltimore Harbor Tunnel (Approximation)

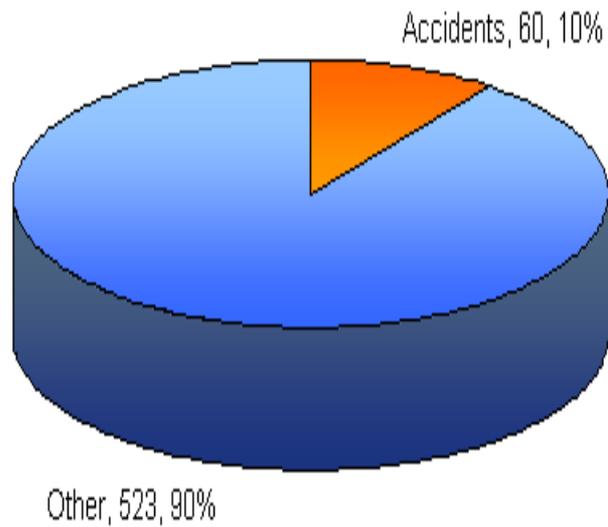
- **HRBT (4 Lane Tunnel / 2 Tubes)**
  - **FY11 Operations Budget = \$4,857,236**
- **Baltimore Harbor (4 Lane Tunnel / 2 Tubes)**
  - **Division of Operations (Baltimore Harbor Tunnel Only) = \$9,050,465**
    - Includes toll operations
    - Labor costs include union wage rates

# Update on Tunnels Baseline, Risk Assessment, and Tunnels Investment Plan Project

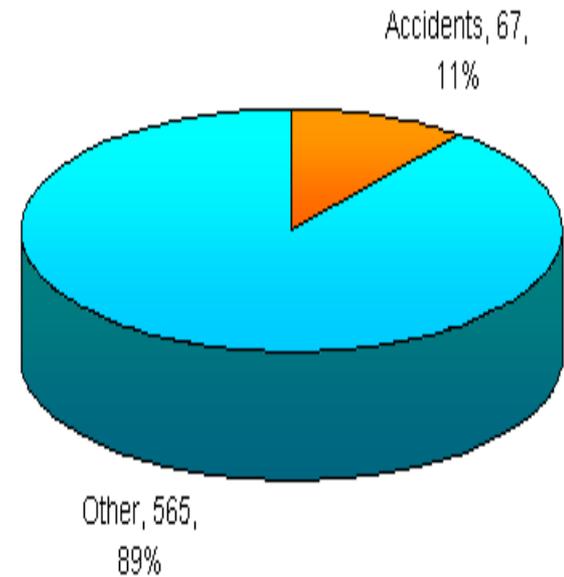
- **Phase 1 (Tunnels Baseline Review and Information Collection) Start Date December 15<sup>th</sup>**
- **Phase 2 (Risk Assessment) - Outcome of risk assessment will be a recommendation of the most cost-effective solutions that would be utilized to develop tunnels investment program**
- **Phase 3 (Investment Plan) - Tunnels Investment Plan will provide updated listing of recommended tunnels projects**
- **Target Completion Date for Phase 1, 2, and 3 is August 2011**

# HRBT Traffic Stops

HRBT 2009 Eastbound Traffic Stops



HRBT 2009 Westbound Traffic Stops



# Potential to Utilize Signage in Tunnels to Direct Motorists Involved in a Minor Incident

- Request to place signs at HRBT to tell motorists to move to islands

- Fender Bender signs already deployed

  - Over 25 signs installed around region

- HRBT, MMMBT and Downtown Tunnels

  - 2 signs at each tunnel facility (one on each approach in each direction)



## Fender Bender Sign Locations:

- I-64 EB at the Denhigh Blvd Overpass
- I-64 EB & WB Approaching J Clyde Morris Blvd
- I-64 EB East of Military Hwy (Airport) Interchange
- I-64 WB Prior to Indian River Rd Interchange
- I-264 WB East of Military Hwy (Military Circle) Interchange
- I-264 WB East of Brambleton Ave Interchange
- I-264 EB Between Newtown Rd and Witchduck Rd Interchanges
- I-264 WB Between Laskin Rd and Lynnhaven Pkwy Interchanges
- I-464 NB Between Poindexter St and S. Main St Interchanges
- I-564 WB Prior to Terminal Blvd Interchange
- I-664 NB Adjacent to Inspection Station
- I-664 SB at 35th St Ramp

# Changeable Message Signs (CMS) Near the Tunnels

- **VDOT reviewed request to put date/time stamp on CMS Signs**
  - CMS only has the capacity to have three lines for text
  - Tunnel CMS do not allow “free texting” (communication upgrades would be required)
- **Improved Traveler Information Initiatives**
  - Instituted more aggressive monitoring of traffic and updating of messages by the Transportation Operations Center
  - Marketing of 511 traveler information services, including *511Virginia.org* website, 511 Virginia Phone System, and Traveler Alerts to Electronic Devices
  - Upgrading CMS functionality to report travel time

# Improved Traveler Information Action Plan

- Initiative to upgrade / repair 44 CMS from I-64 at Denbigh Blvd to I-64 Indian River Road to provide enhanced information including travel time
- Project is funded and contract is expected to be underway mid January 2011
- After 60 day ramp-up, contractor can retrofit up to 10 signs per month
- Estimated completion: Mid-September 2011
- Travel time will be posted through the corridor

# Questions?