REGIONAL BRIDGE AND TUNNEL ANALYSIS

Presented by:

Keith Nichols

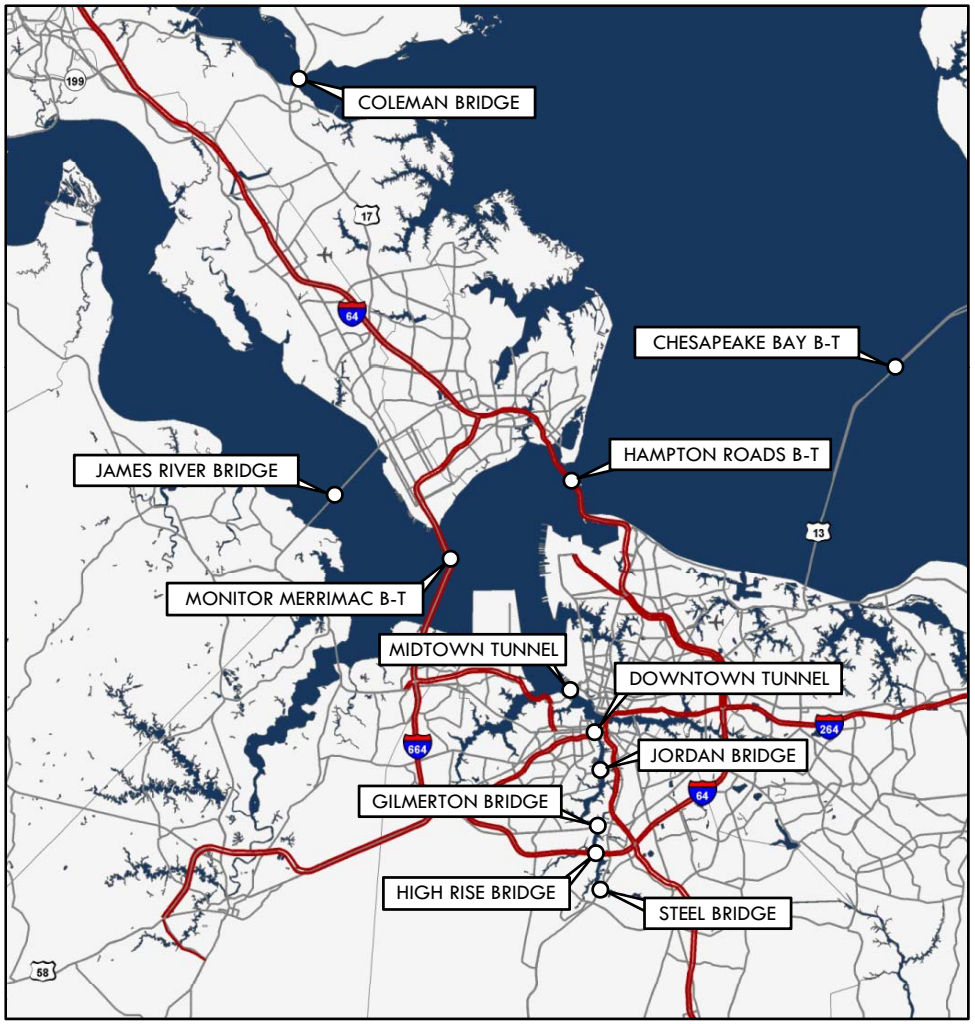
Transportation Technical Advisory Committee Meeting
June 3, 2009

CMP TIMELINE

- November 2008 – State of Transportation
- Today – Regional Bridge and Tunnel Analysis
- Summer 2009 – Regional Level of Service Analysis
- Throughout FY 2010 – Congestion Mitigation Strategies, Final Report

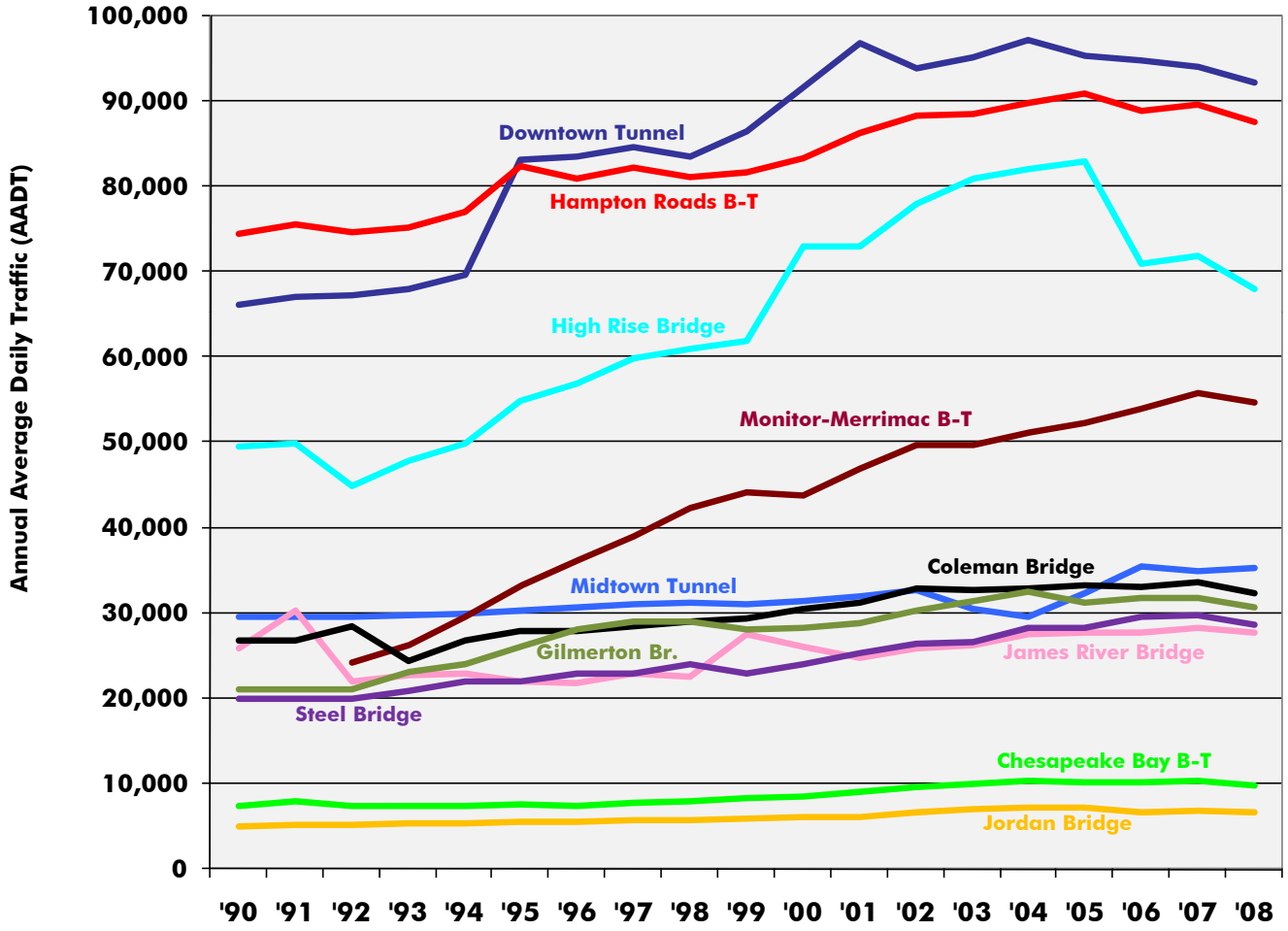
BRIDGES & TUNNELS MAP

Major Regional Bridges and Tunnels



ANNUAL VOLUMES

Annual Average Daily Traffic Volumes at Major Bridges and Tunnels, 1990 - 2008



Average Annual Growth Rates, 1990 to 2008

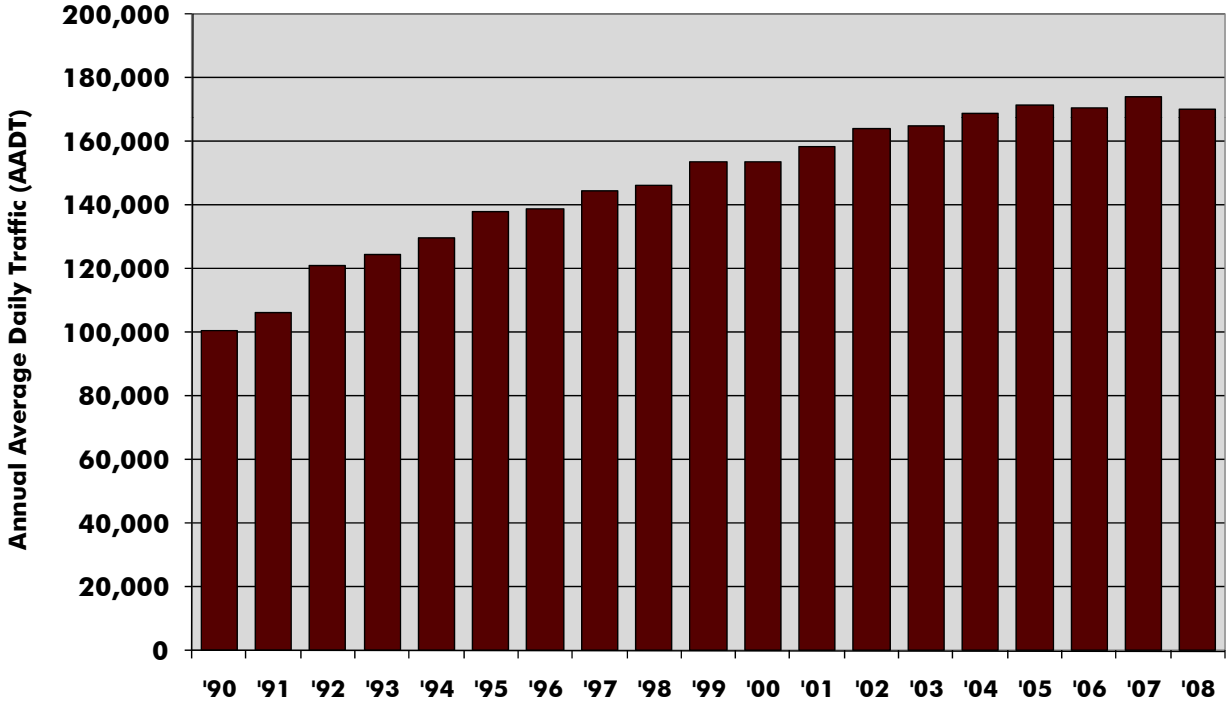
Monitor-Merrimac B-T*	5.2%
Gilmerton Bridge	2.1%
Steel Bridge	2.0%
Downtown Tunnel	1.9%
High Rise Bridge	1.8%
Jordan Bridge	1.6%
Chesapeake Bay B-T	1.5%
Coleman Bridge	1.1%
Midtown Tunnel	1.0%
Hampton Roads B-T	0.9%
James River Bridge	0.3%

Data Sources: VDOT, CBBT.
* - Monitor-Merrimac values represent growth rates from its opening in 1992 to 2008.

HARBOR CROSSINGS

- The volume of vehicles crossing the Hampton Roads harbor increased 69% from 1990 to 2008.

Annual Average Daily Traffic Volumes Crossing the Hampton Roads Harbor, 1990 - 2008

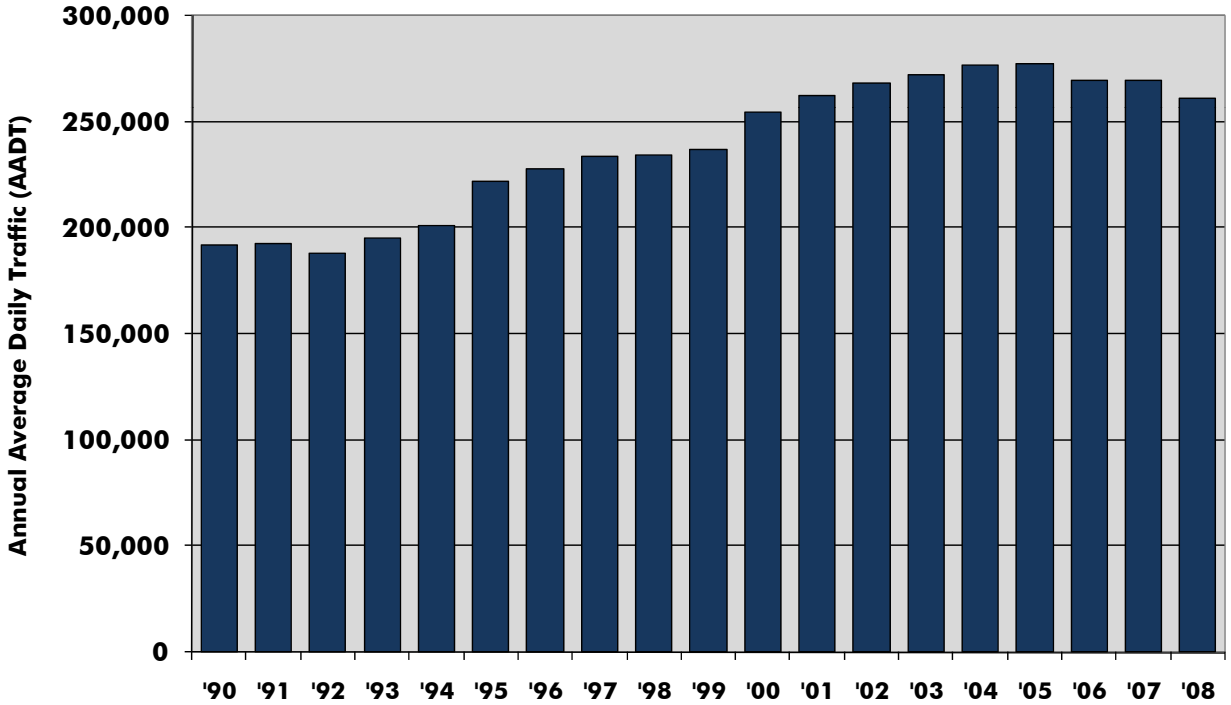


Data Source: VDOT. Hampton Roads Harbor crossings include the Hampton Roads Bridge-Tunnel, Monitor-Merrimac Memorial Bridge-Tunnel, and the James River Bridge.

ELIZABETH RIVER CROSSINGS

- The volume of vehicles crossing the Elizabeth River increased 36% from 1990 to 2008.

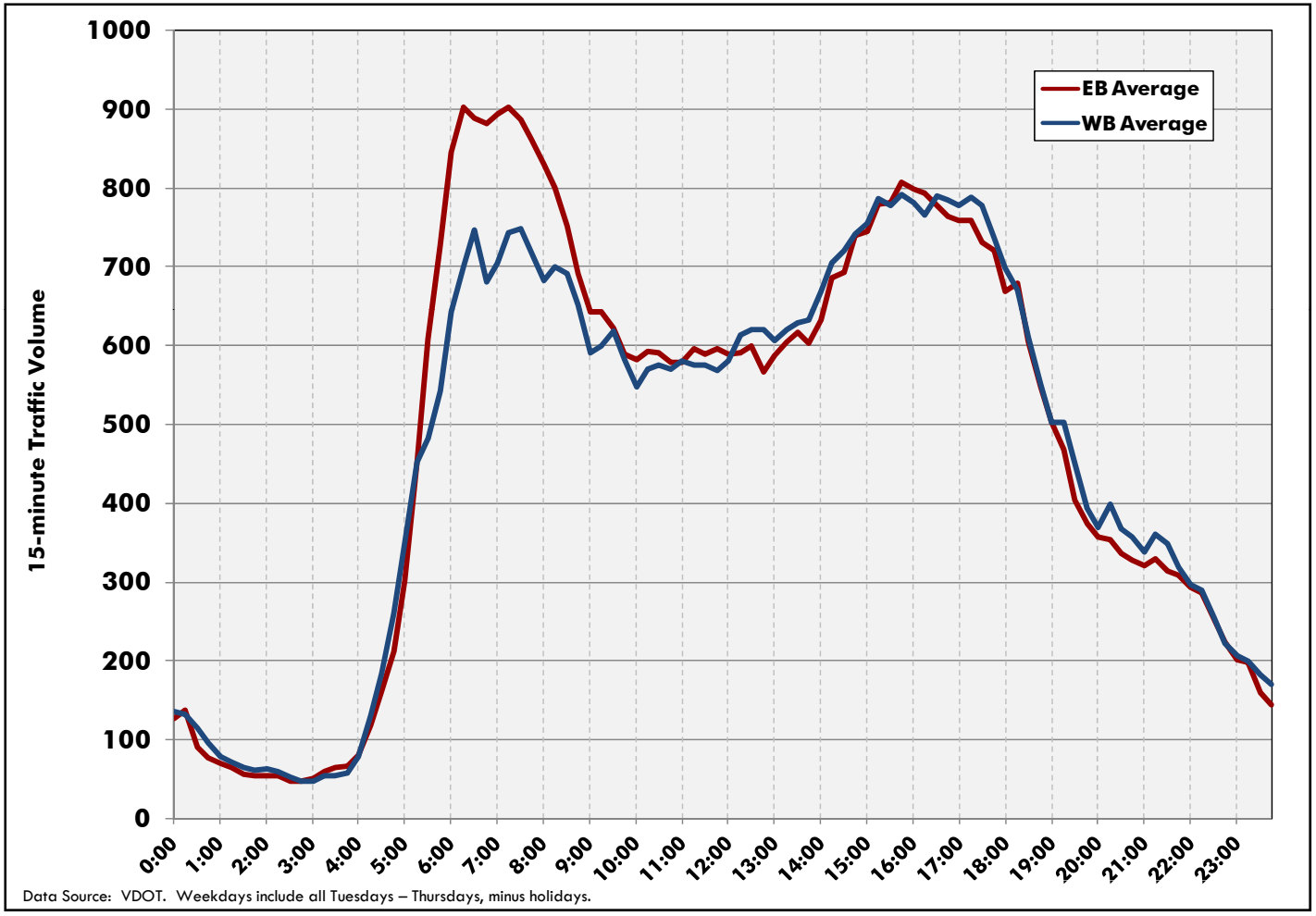
Annual Average Daily Traffic Volumes Crossing the Elizabeth River, 1990 - 2008



Data Source: VDOT. Elizabeth River crossings include the Midtown Tunnel, Downtown Tunnel, Jordan Bridge, Gilmerton Bridge, High Rise Bridge, and Steel Bridge.

VOLUMES BY TIME OF DAY

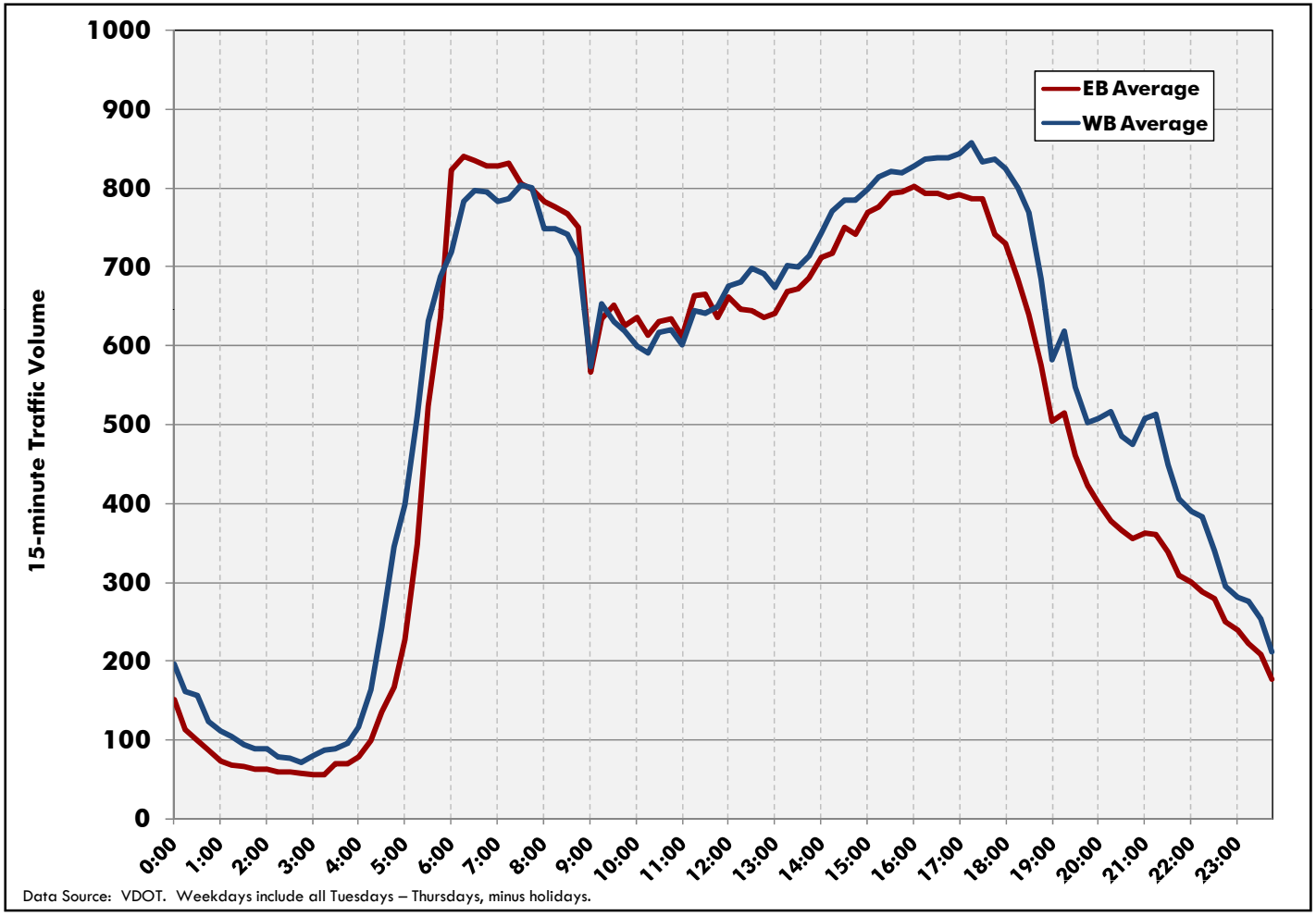
Average Volumes by Time of Day at the Hampton Roads Bridge-Tunnel, 2008 Weekdays



Data Source: VDOT. Weekdays include all Tuesdays – Thursdays, minus holidays.

VOLUMES BY TIME OF DAY

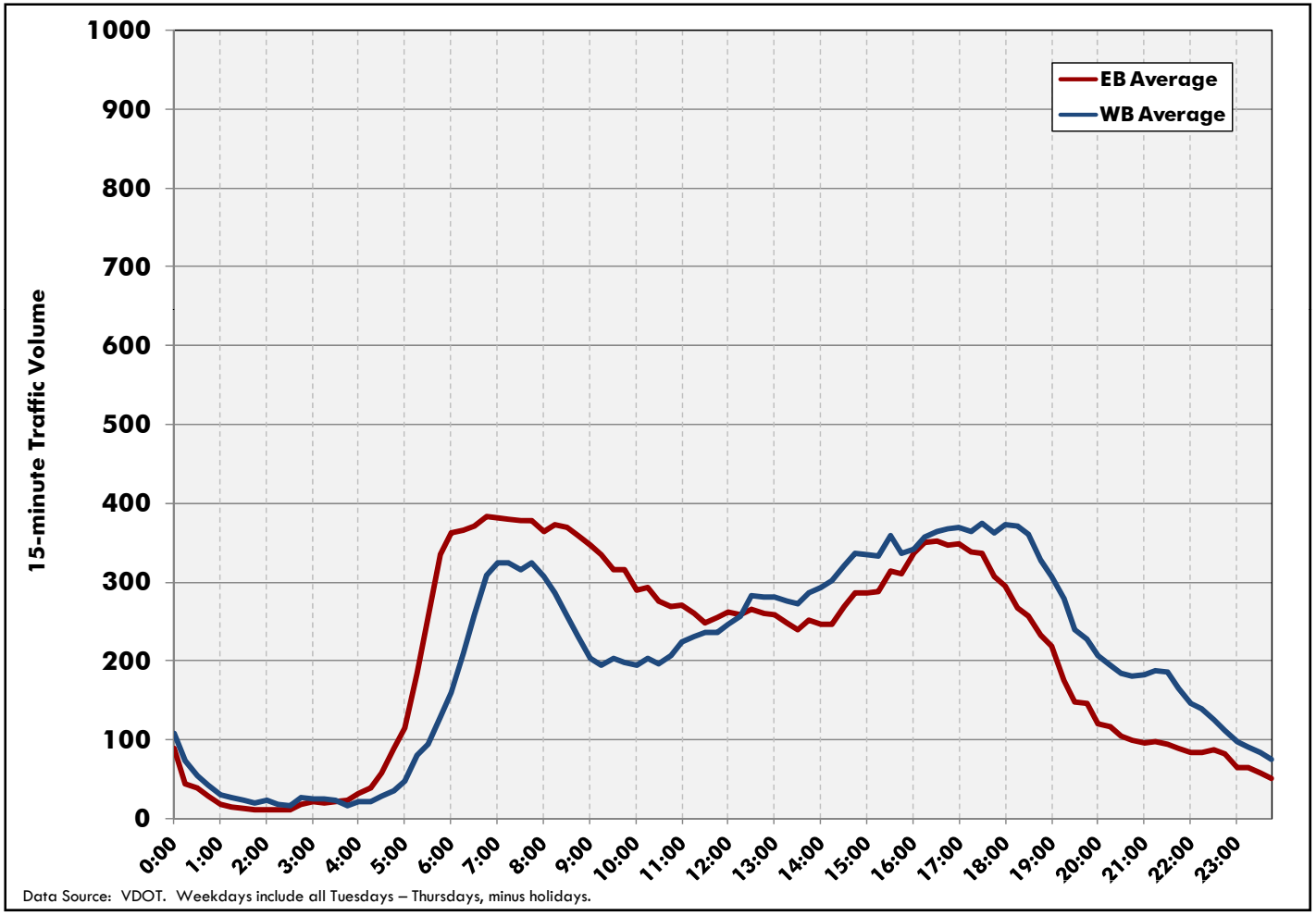
Average Volumes by Time of Day at the Downtown Tunnel, 2008 Weekdays



Data Source: VDOT. Weekdays include all Tuesdays – Thursdays, minus holidays.

VOLUMES BY TIME OF DAY

Average Volumes by Time of Day at the Midtown Tunnel, 2008 Weekdays



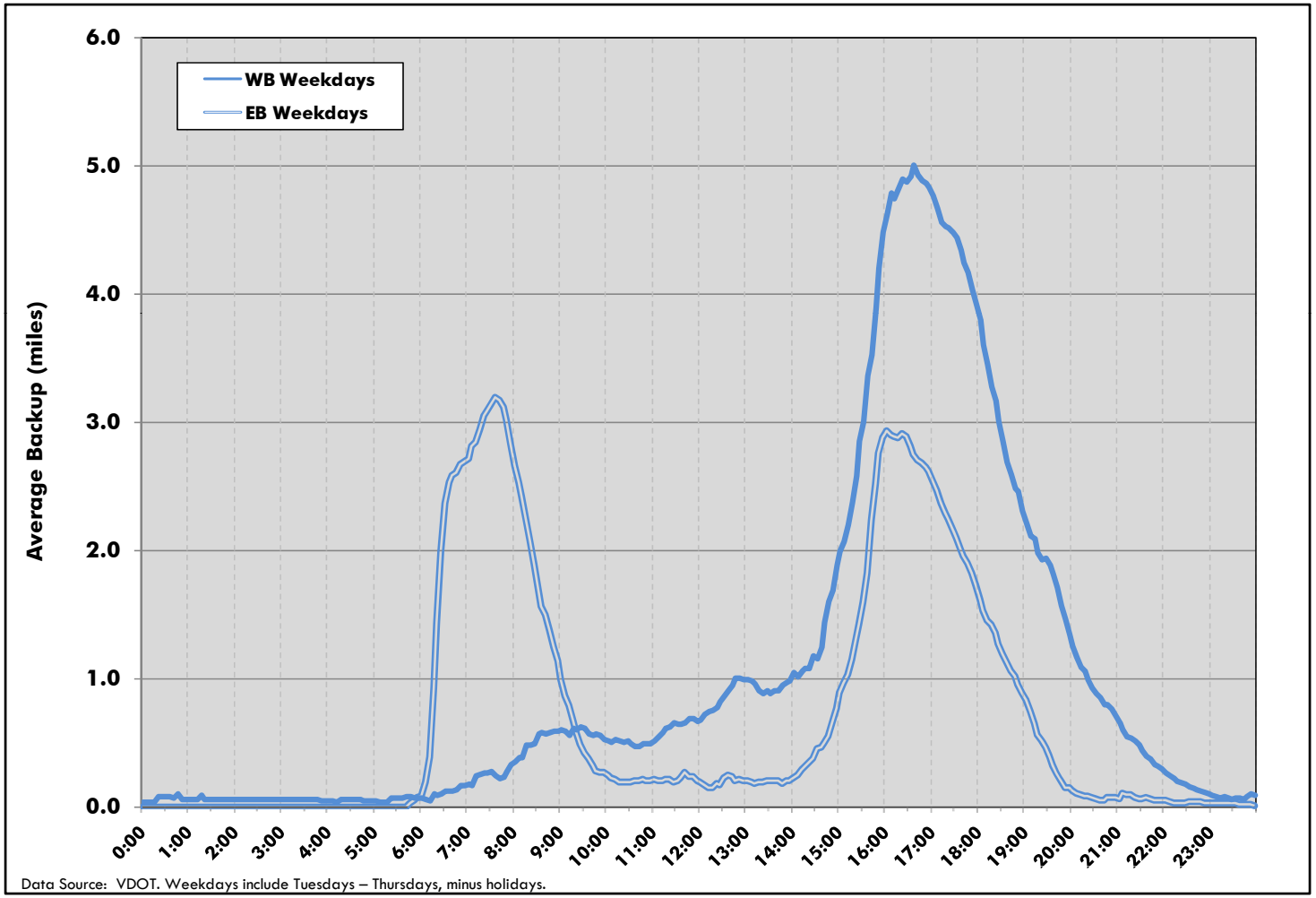
Data Source: VDOT. Weekdays include all Tuesdays – Thursdays, minus holidays.

HRBT DELAYS

- This section analyzes backups at the HRBT by using VDOT Hampton Roads TOC changeable message sign data for all of 2008.

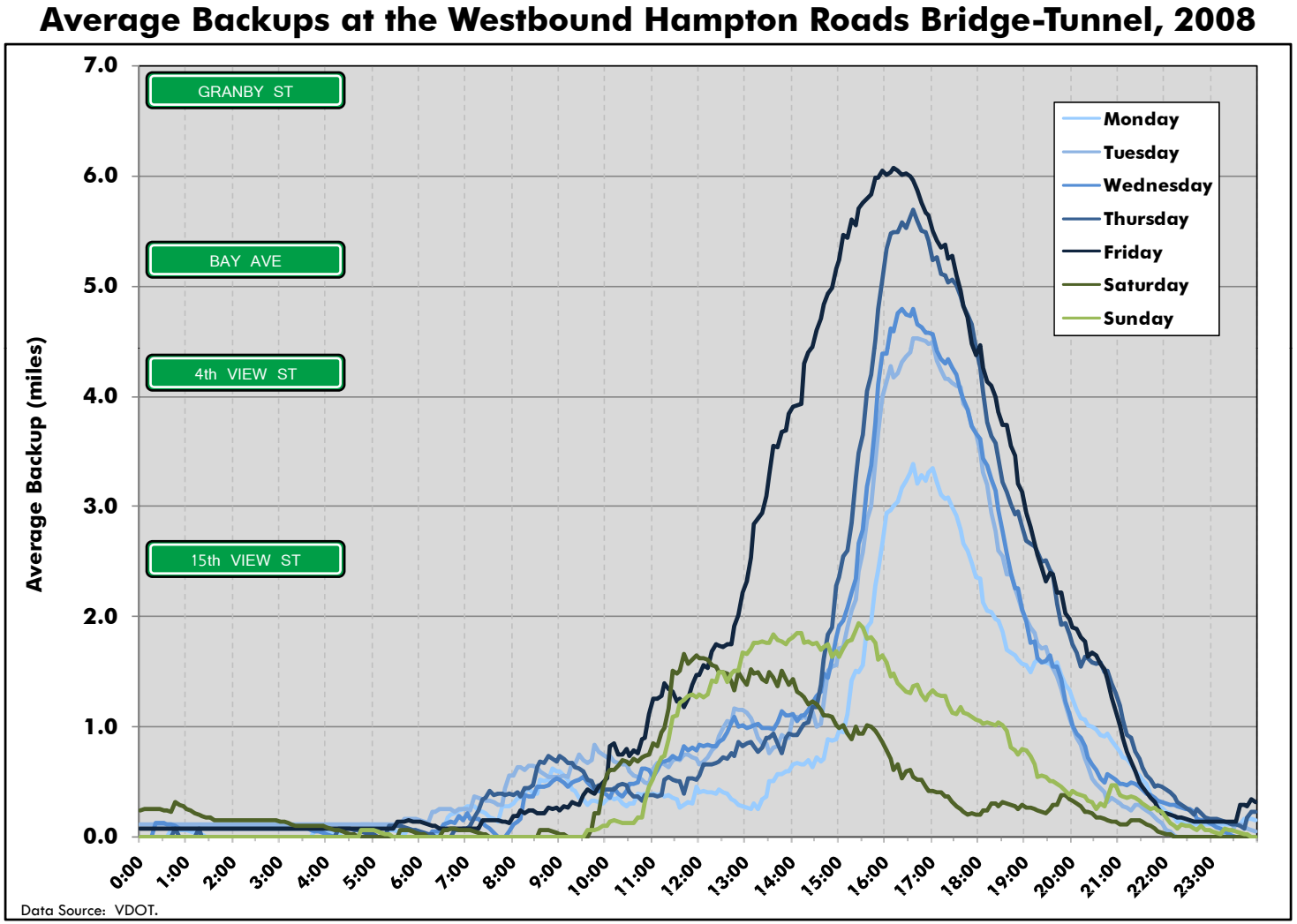
HRBT DELAYS – BOTH DIRECTIONS

Average Backups at the Hampton Roads Bridge-Tunnel by Direction, 2008 Weekdays



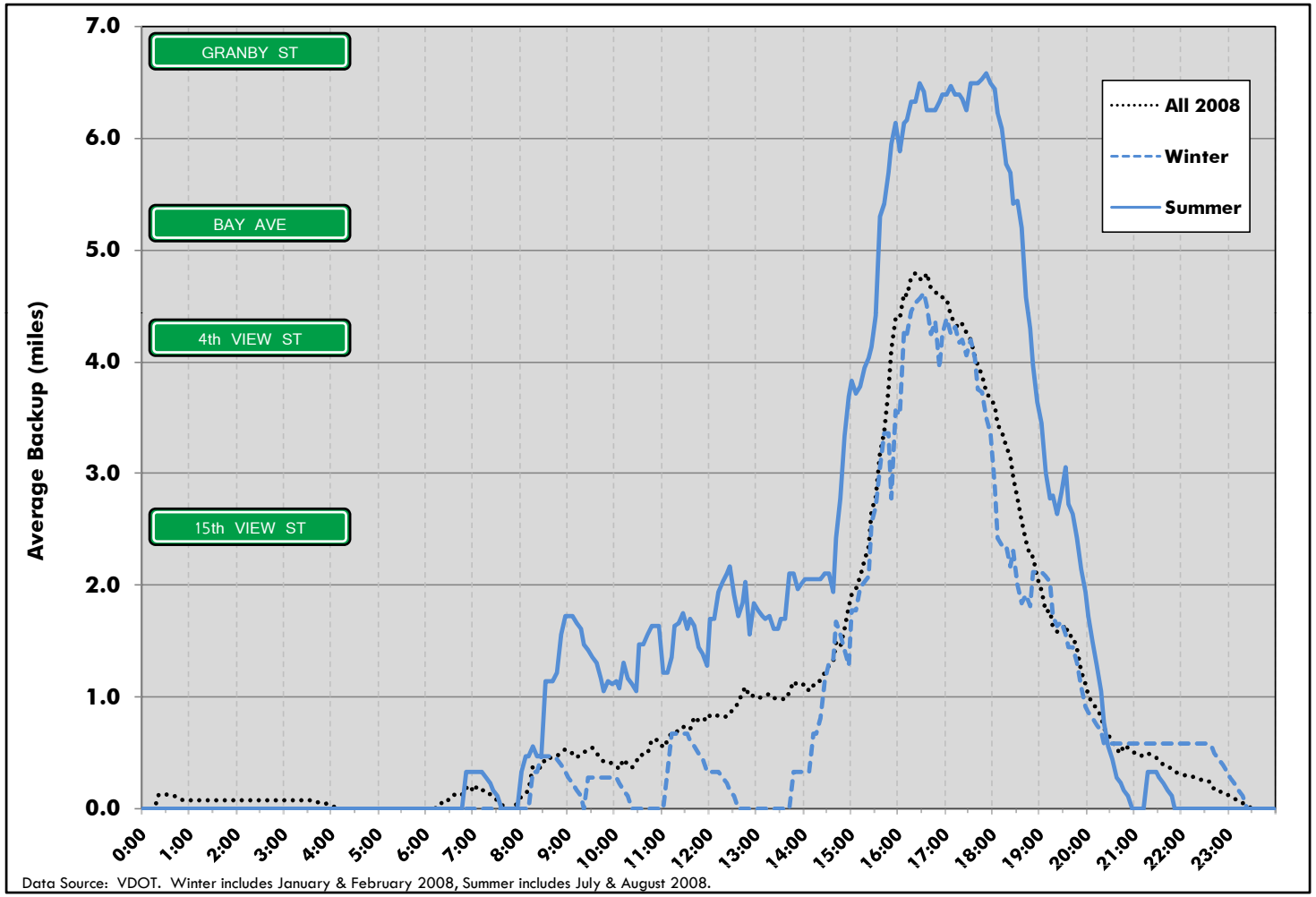
Data Source: VDOT. Weekdays include Tuesdays – Thursdays, minus holidays.

HRBT DELAYS - WESTBOUND



HRBT DELAYS - WESTBOUND

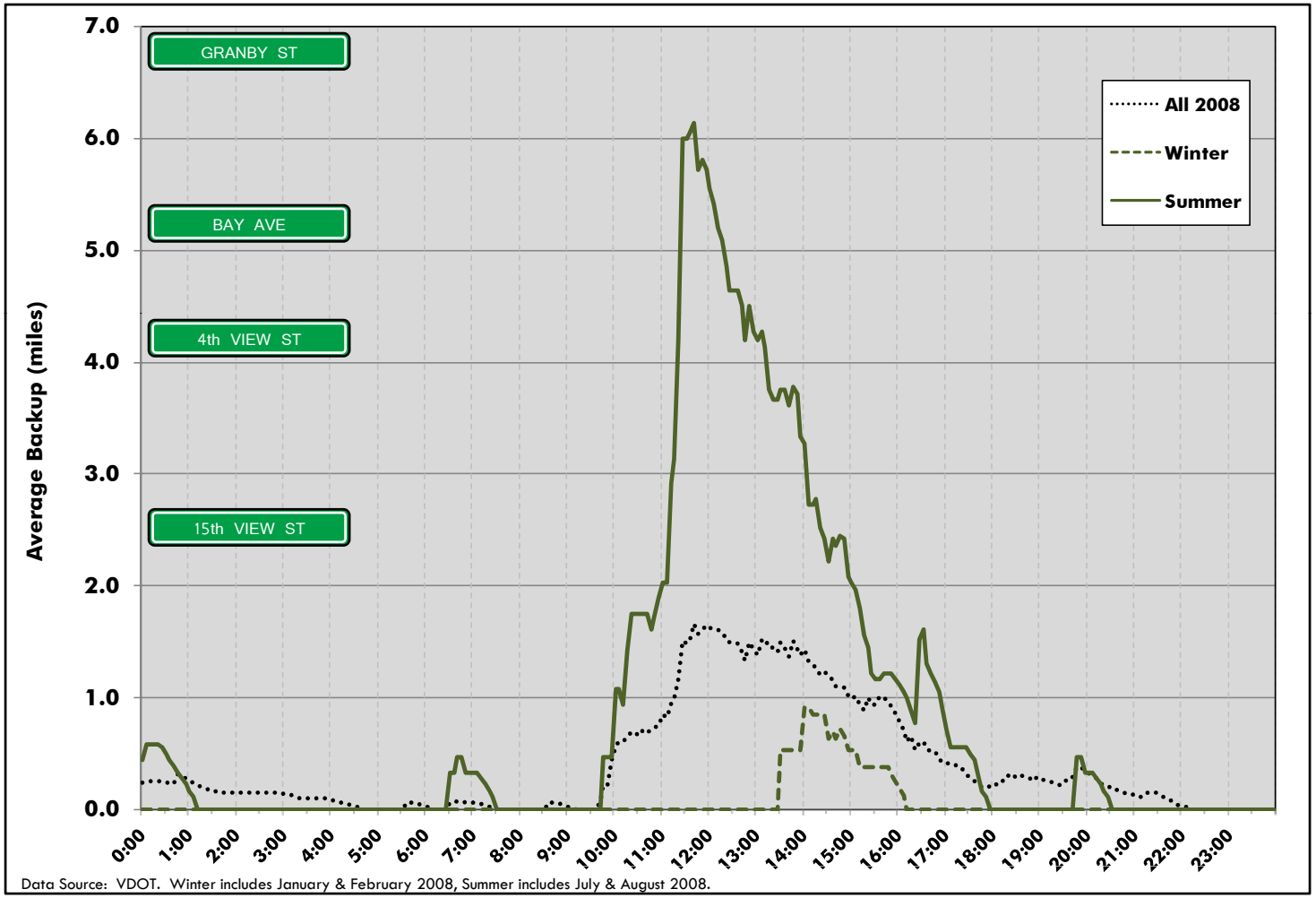
Average Backups at the WB Hampton Roads Bridge-Tunnel, 2008 Wednesdays



Data Source: VDOT. Winter includes January & February 2008, Summer includes July & August 2008.

HRBT DELAYS - WESTBOUND

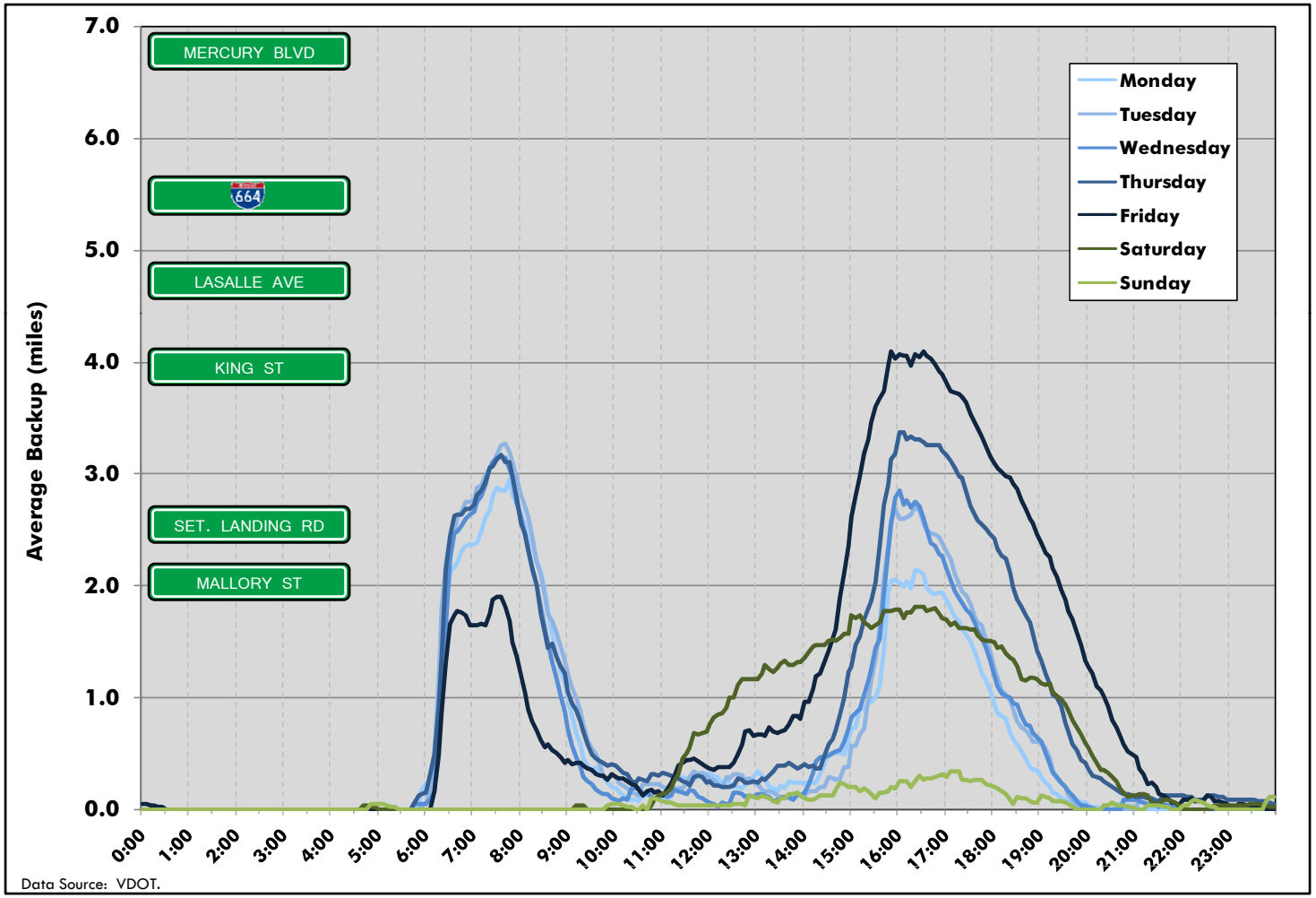
Average Backups at the WB Hampton Roads Bridge-Tunnel, 2008 Saturdays



Data Source: VDOT. Winter includes January & February 2008, Summer includes July & August 2008.

HRBT DELAYS - EASTBOUND

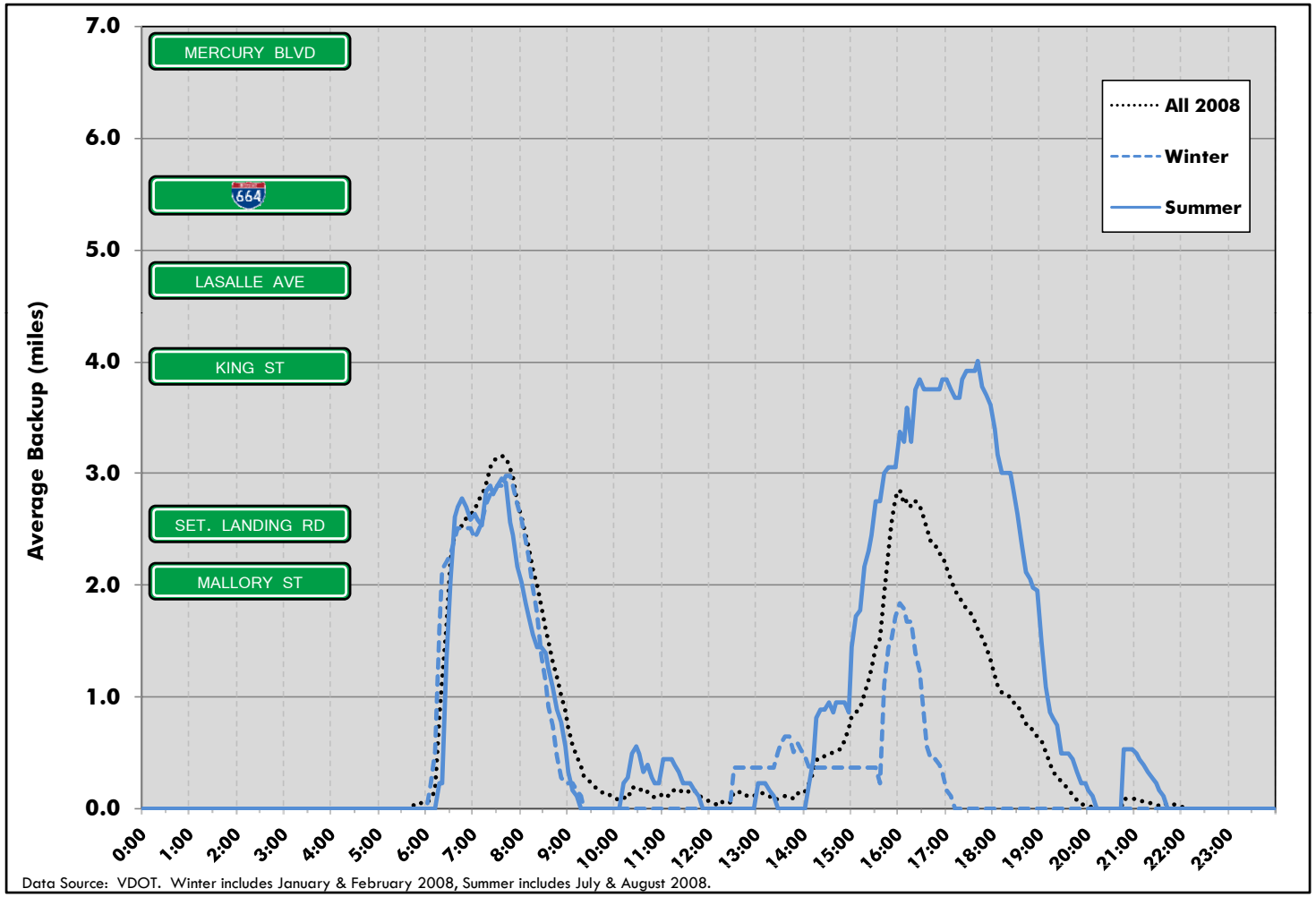
Average Backups at the Eastbound Hampton Roads Bridge-Tunnel, 2008



Data Source: VDOT.

HRBT DELAYS - EASTBOUND

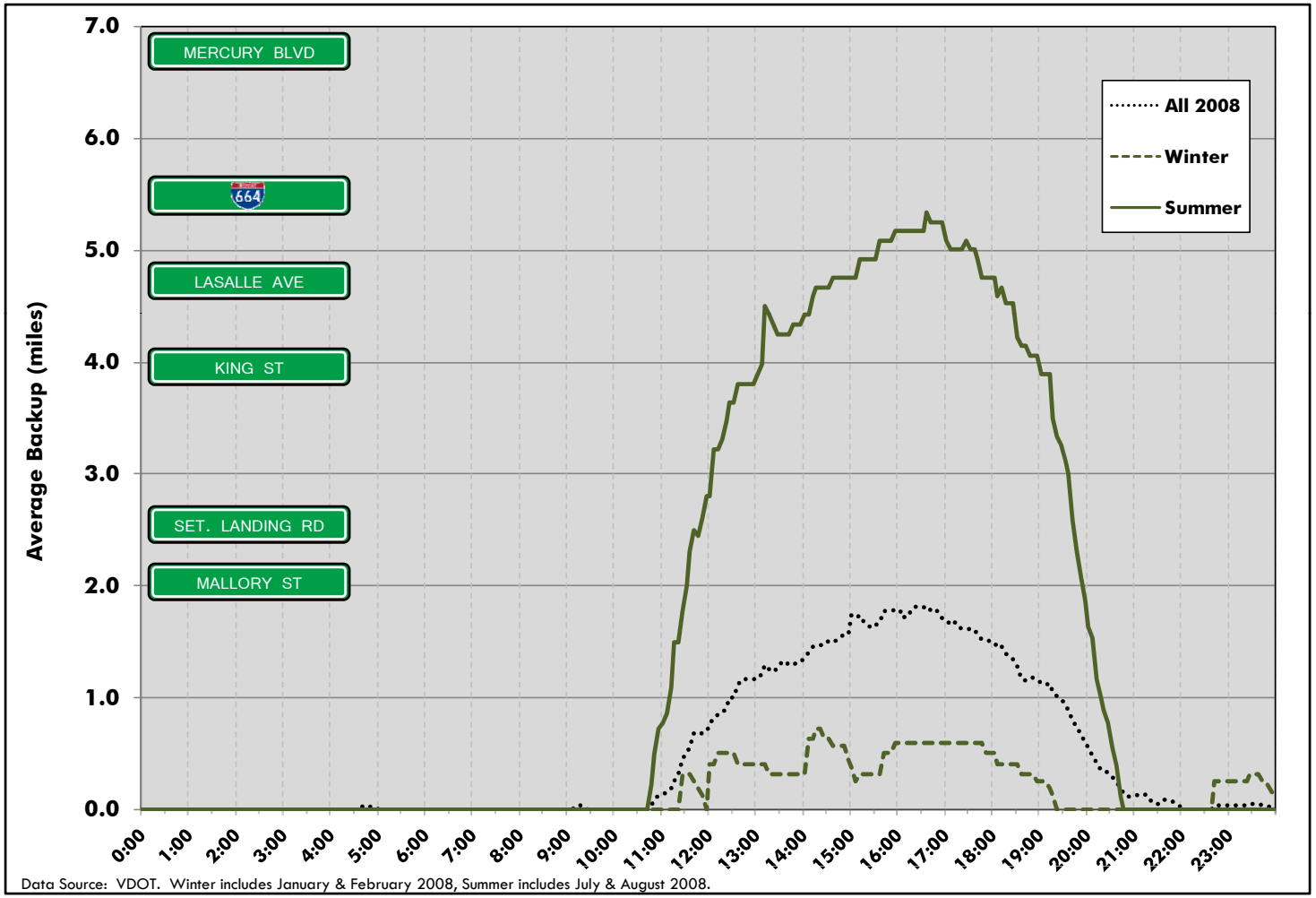
Average Backups at the EB Hampton Roads Bridge-Tunnel, 2008 Wednesdays



Data Source: VDOT. Winter includes January & February 2008, Summer includes July & August 2008.

HRBT DELAYS – EASTBOUND

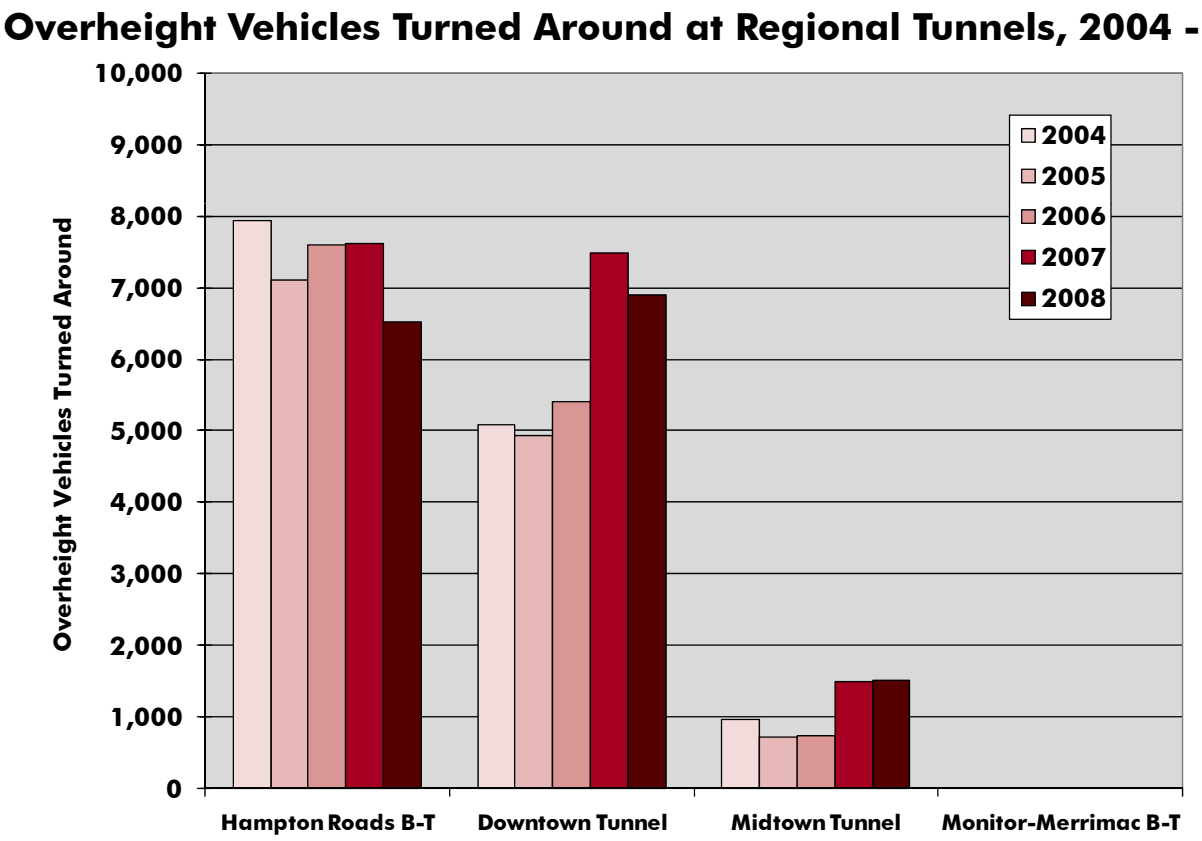
Average Backups at the EB Hampton Roads Bridge-Tunnel, 2008 Saturdays



Data Source: VDOT. Winter includes January & February 2008, Summer includes July & August 2008.

OVERHEIGHT VEHICLES

- Nearly 15,000 overheight vehicles were turned around approaching the region's tunnels in 2008.

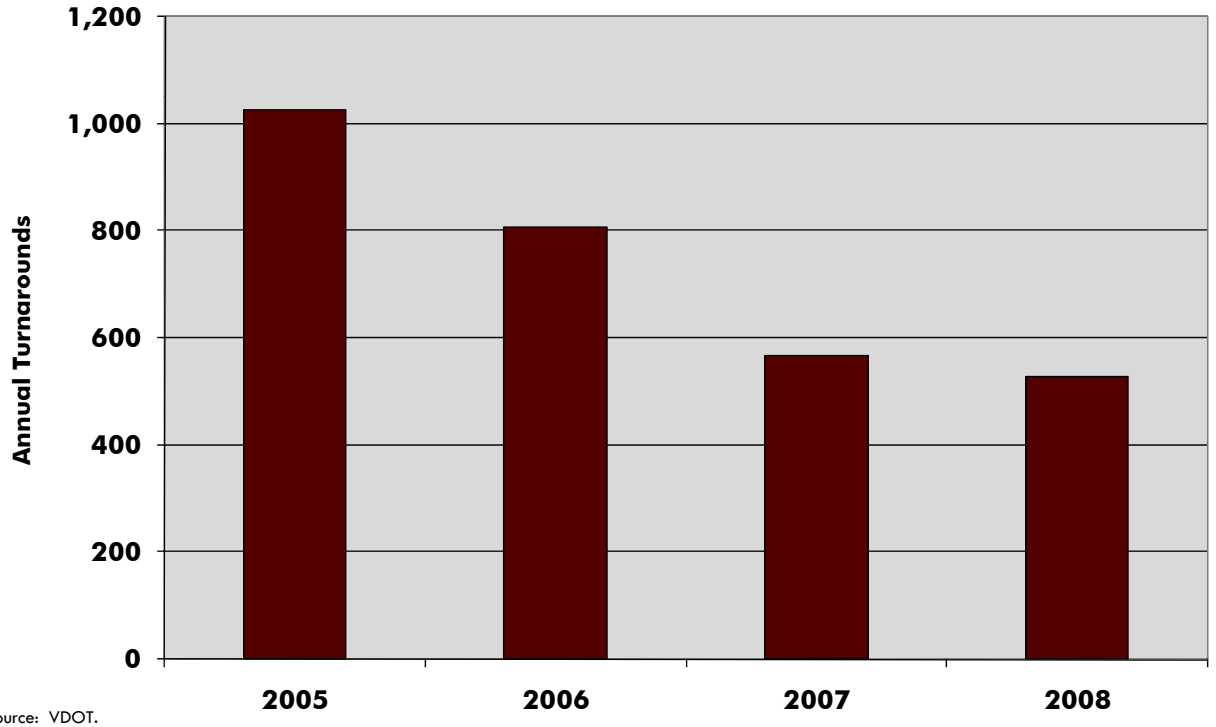


Data Source: VDOT. Includes overheight vehicles turned around at both tunnel inspection stations and at the tunnel entrances.

OVERHEIGHT VEHICLES

- The number of overheight vehicles turned around at the HRBT tunnel entrances decreased 48% from 2005 to 2008.

Annual Turnarounds at the HRBT North or South Islands, 2005 - 2008



Data Source: VDOT.

CONCLUSIONS

- The growth in traffic volumes crossing the Hampton Roads harbor was three times higher than the growth in regional travel from 1990 to 2008.
- Average weekday backups at the HRBT peak at 5 miles in the WB direction and 3 miles in the EB direction during the PM peak period. During the AM peak period EB backups peak at over 3 miles.
- New fines and signage have helped reduce the number of overheight vehicles being turned around at the HRBT entrances.

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