

# Congestion

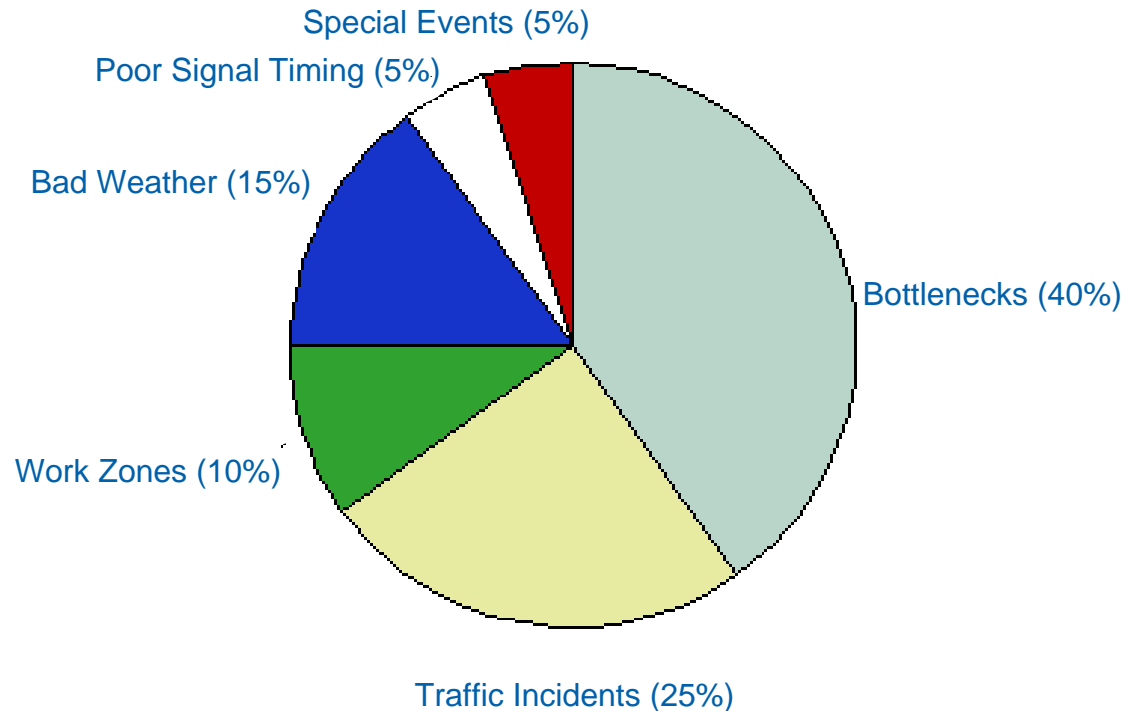
**Prepared for the Office of Intermodal Planning and  
Investment**

**June 2009**

**Prepared by Cambridge Systematics, Inc.**

## Congestion:

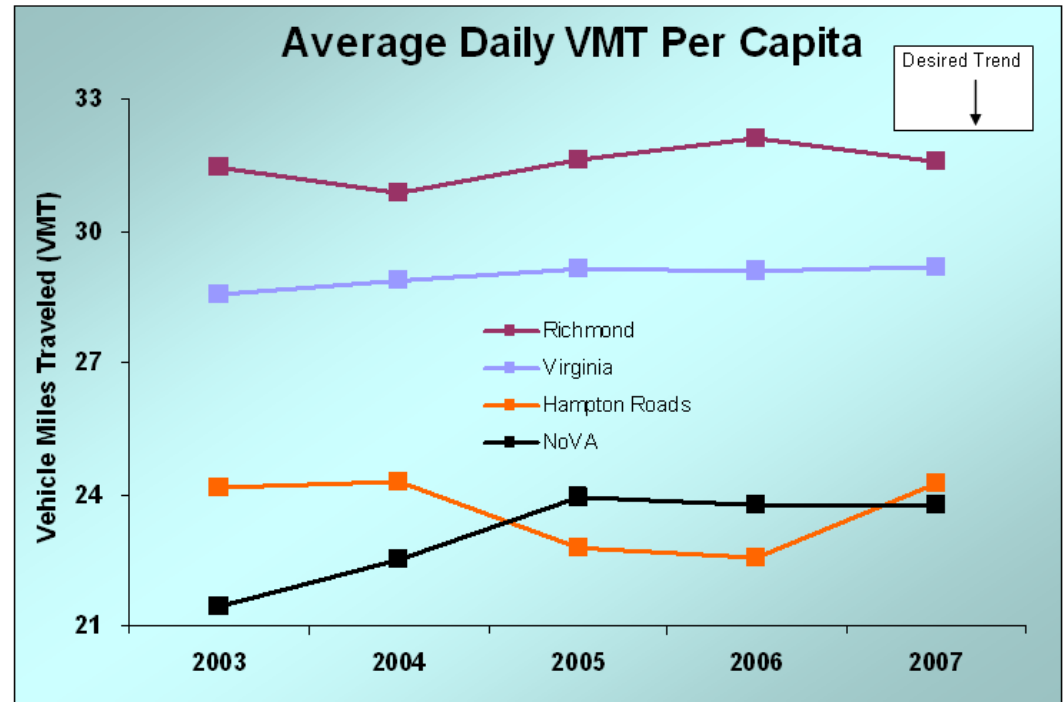
- Demand for use of a given transportation facility is greater than the available capacity
- Can affect all modes of travel
- Highly subjective
- Causes are varied
- Non-recurring congestion accounts for 60% of delay



- **Urban Congestion**
  - Costs of congestion have risen
  - More than half of congestion is non-recurring
  - Environmental impacts are substantial
- **Rural Congestion**
  - Congestion not just an urban problem
  - Seasonal congestion affects routes to tourist and holiday destinations
  - Some rural corridors (e.g., I-81) experience congestion due to freight traffic
- **Deficiencies exist for all modes**
  - Crowded Metrorail trains, station parking in NoVa
  - Port of Virginia faces growth in freight traffic

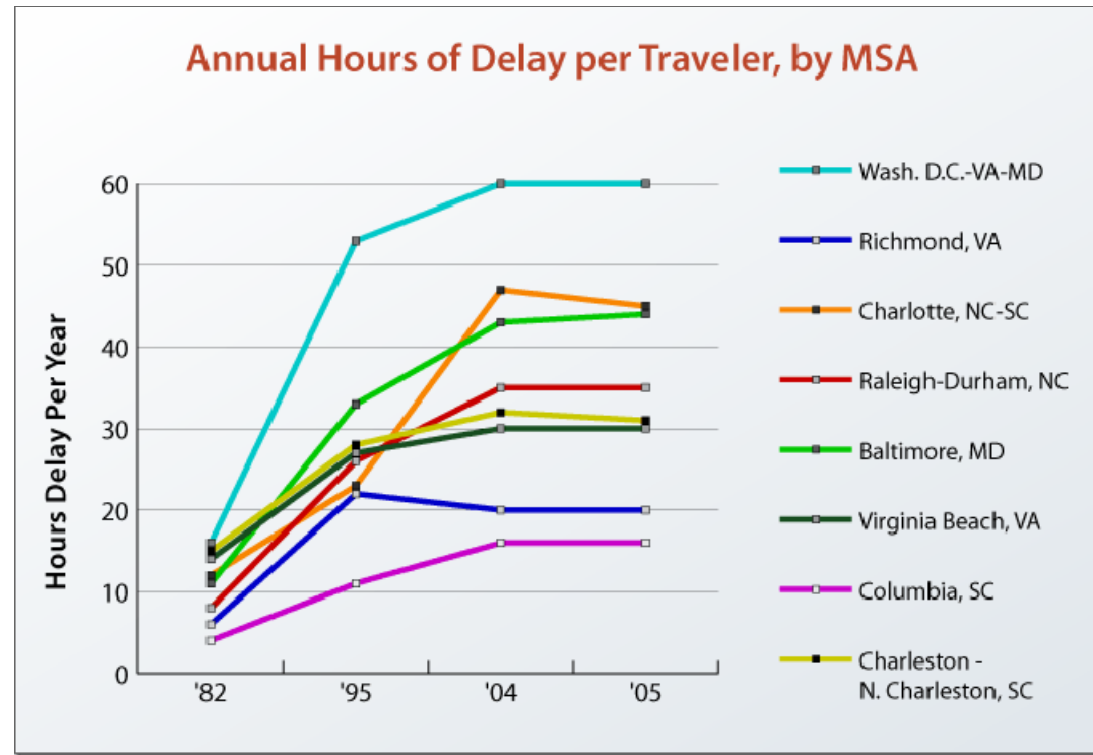
**Historically, increases in road capacity have not kept pace with growth in Vehicle Miles Traveled (VMT)**

**Growth in VMT abated in 2007, and likely declined in 2008**



**Travelers faced delay in Northern Virginia, Hampton Roads, and Richmond\***

**Virginia's average commute time to work in 2006 was the 6<sup>th</sup> highest in the country (26.9 minutes; national average 25 minutes)**



\*Texas Transportation Institute *Urban Mobility Study 2007*; Data for 2005

- **Congestion contributed to increased cost for travelers:**

**Northern Virginia:        \$1,094**

**Virginia Beach:            550**

**Richmond:                  362**

*... But it could have been worse*

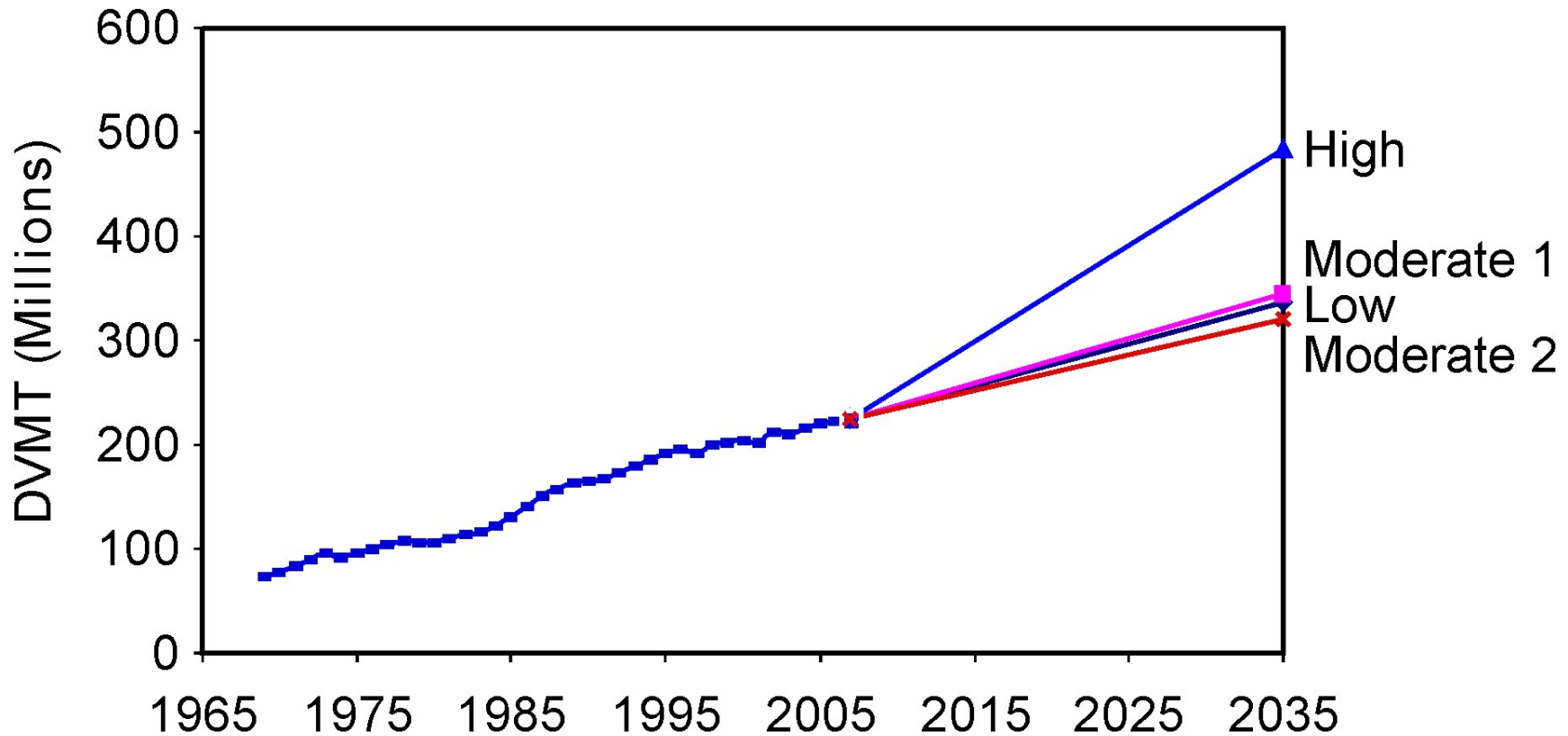
- **Operations treatments saved travelers significant amounts of time**
  - HOV lanes
  - Ramp meters
  - Signal coordination
  - Incident management
  - Service patrols
- **Public Transportation also contributed**

- **Population growth forecast at 28% to 36%**

	<b>2010</b>	<b>2035</b>
<b>Population (VEC)</b>	<b>8.01 M</b>	<b>10.28 M</b>
<b>Population (NPA)</b>	<b>8.06 M</b>	<b>10.93 M</b>
<b>Employment</b>	<b>5.21 M</b>	<b>7.75 M</b>
<b>Household Size</b>	<b>2.62</b>	<b>2.54</b>



## Forecasts of travel demand vary



- **Volumes at the Port of Virginia will increase by 100% by 2020 and by nearly 300% by 2040**
- **Twelve of the 227 freight bottlenecks in the U.S. occur in Virginia**
- **Construction projects and work zones will contribute to congestion in Northern Virginia**

- **Virginia's extensive High Occupancy Vehicle (HOV) system in Northern Virginia and Hampton Roads save travelers time**
- **Virginia will construct a major new network of High Occupancy Toll Lanes**

- **Advanced Traveler Information Systems provide much needed traffic and transit information**
- **Transit Oriented Development (TOD) has concentrated higher density development in Metrorail transit corridors**

## State of Washington Puget Sound area

- Operations Measures and Intelligent Transportation Systems (ITS)
- Value Pricing
- “Do something and measure it”
- Ramp Metering had significant impact



SR 167 HOT Lanes

### California

- LA converting 85 miles of HOV lanes to HOT lanes
- High capacity CNG fueled buses will operate in HOT lanes
- Sustainable Communities Strategy - reductions in VMT
- Sustainable regional transportation systems



### Texas

- Metropolitan Mobility Plans
- Information about beneficial impacts of additional funding

### New Jersey

- **New Jersey’s Future in Transportation (NJFIT)**
- **Comprehensive and cooperative approach to transportation and land use planning**
  - Downsizing alternatives
  - increasing transportation options
  - lowering design speeds
  - pedestrian-friendly streetscapes
- **“Toolbox” of strategies**
  - Traffic calming measures
  - transit-oriented design,
  - environmental sensitivity, and
  - mix of land uses

- **Hierarchy of strategies:**
  - Reduce need for travel or shift time of day
  - Encourage use of alternate modes (transit, biking, walking)
  - Shift trips into higher occupancy vehicles (ridesharing)
  - Improve operations to carry vehicles more efficiently
  - Increase capacity



- **Address Jobs-Housing Balance**
- **Encourage Transit-Oriented Development**
- **Implement Travel Demand Management (TDM) Programs**
- **Expand Travel Options/Alternate Modes**

- **Expand high occupancy vehicle (HOV) and high occupancy toll (HOT) facilities**
- **Extend “Smart Highways” Program (Technology)**
- **Continue to Pursue Public-Private Partnerships**