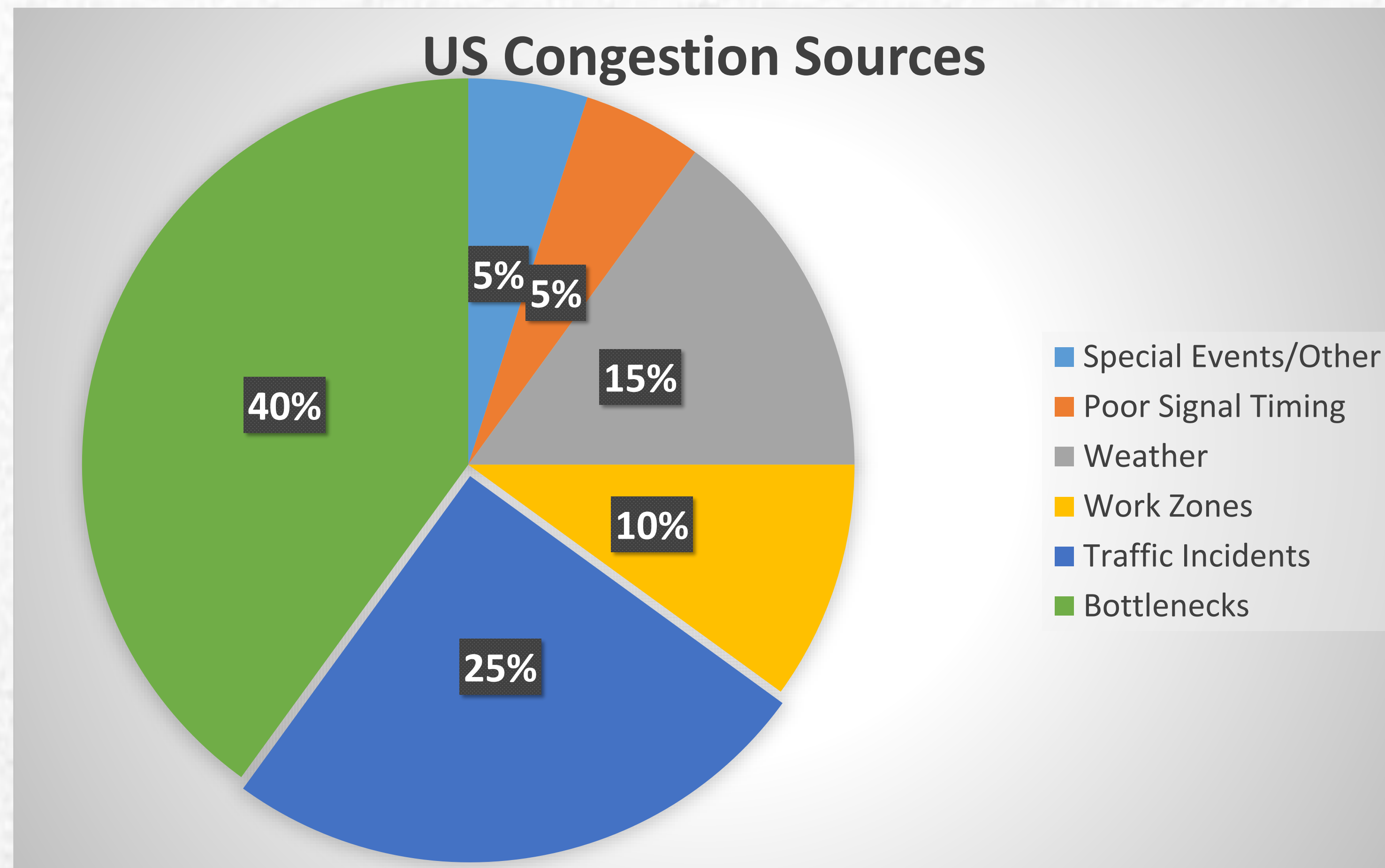


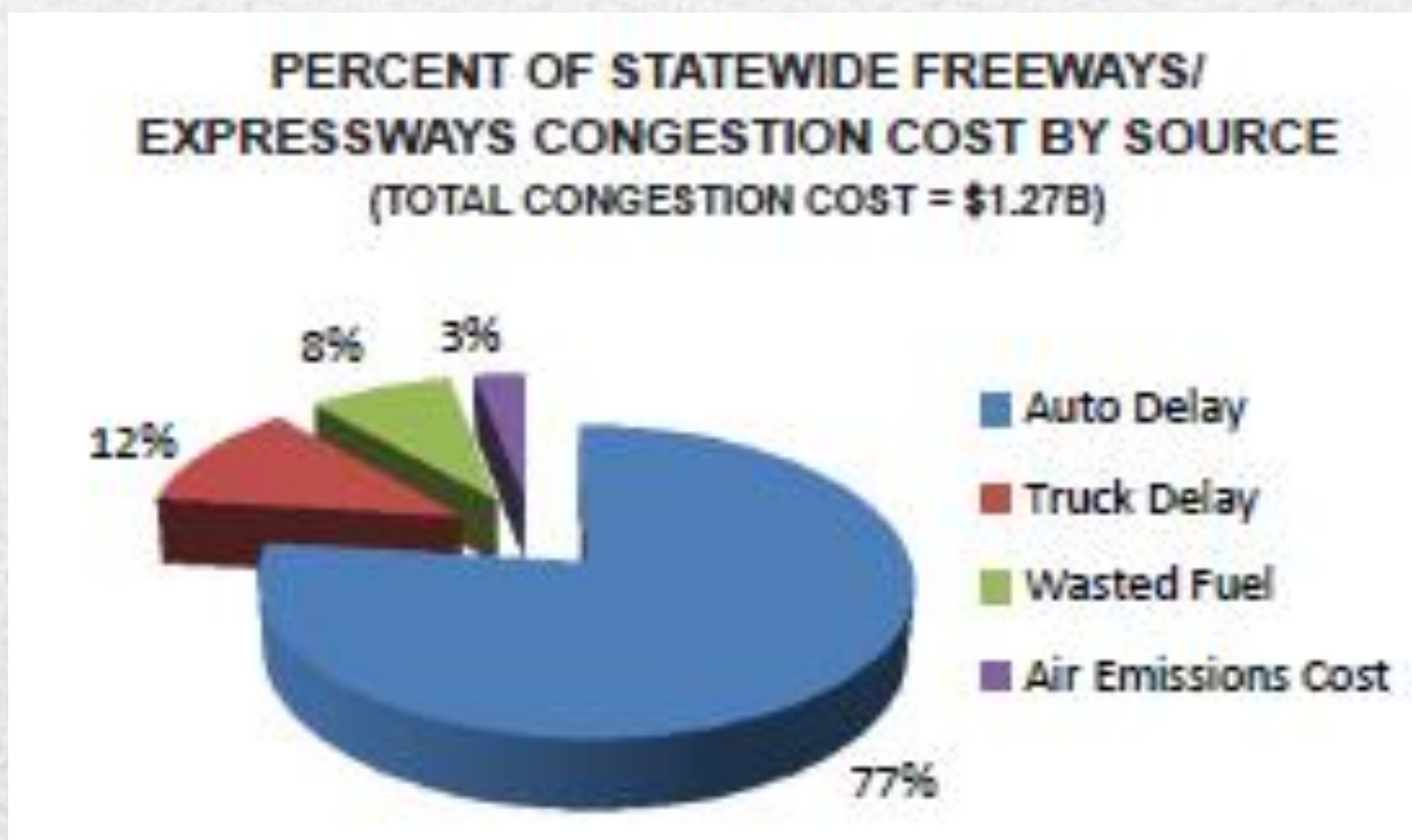
## Relation to Economic Competitiveness

Economic Costs of Congestion

National: \$121Billion, \$818 per commuter



State of Maryland:



The metropolitan Washington, D.C. region ranked as the most congested city in the us in 2011.

## Related Work at NTC@Maryland

Quantifying the Cost Effectiveness of Freeway Service Patrol Programs



Integration of Variable Speed Control and Travel Time Information to Minimize Recurrent Highway Congestion

HOV Lane Performance Monitoring System



## Congestion Mitigation Strategies

**Connected and Automated Vehicles**

**Active/Integrated Traffic Management**

- Advanced Traffic Signal Control
- Variable Speed Limits
- Managed Lanes
- Traveler Information Systems

**Demand Management Strategies**

- Tele-Working and New Technology
- Flexible Work Hours
- Car-pooling
- Increased Public Transportation
- Dynamic Tolling



Data Collection of Freeway Travel Time Ground Truth with Bluetooth Sensors

Integrated Management of Maintenance and Traffic

