

HOMES: Highway Operation Monitoring and Evaluation System

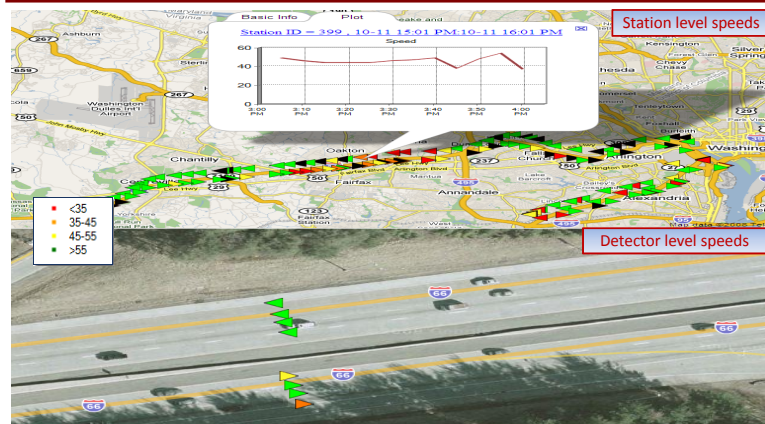
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PROJECT INTRODUCTION

Increasing population, high fuel costs, and stricter environmental policies have all contributed to the greater demand for improved roadway safety and efficiency. In the **Washington Metropolitan** region, congestions has cost an estimated **90.8 million gallons/yr in wasted fuel**, **127 million hours/yr in productivity loss**, and **\$2.3 billion/yr**. Congestion also puts the **public safety at risk** as it debilitates the region's ability to quickly transport people and resources.

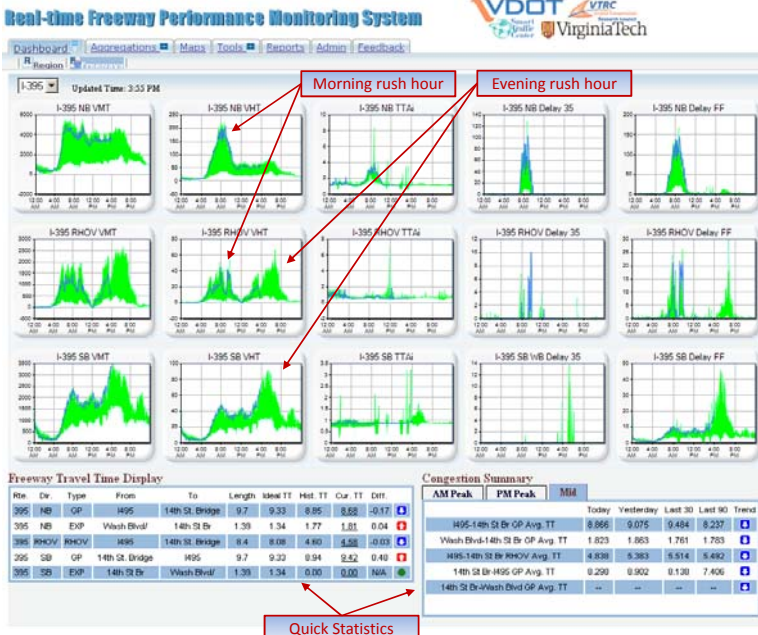
Virginia Tech's Spatial Data Management group has developed **HOMES**, an advanced traffic information system that helps to **improve the efficiency and safety** of the roadway network. HOMES enables the **detection, monitoring, and analysis** of trends, patterns, and abnormalities in traffic flow to provide decision support to **Virginia Department of Transportation (VDOT)**.

TRAFFIC MAP



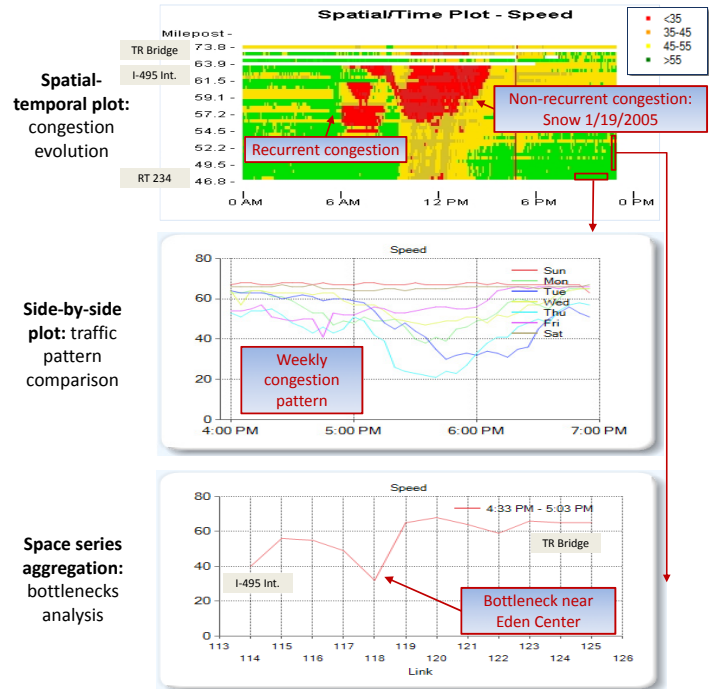
Traffic maps: high level evaluation + drill-down functions

REGIONAL DASHBOARD



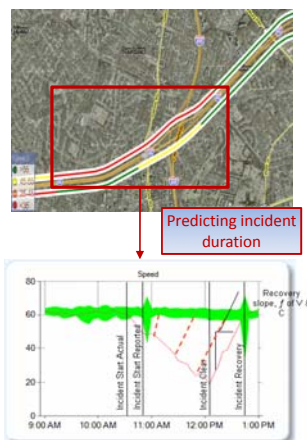
Regional/Freeway dashboard: traffic snapshot (travel time and congestion summary for landmarks); quick observation and decision making

CHART VISUALIZATIONS

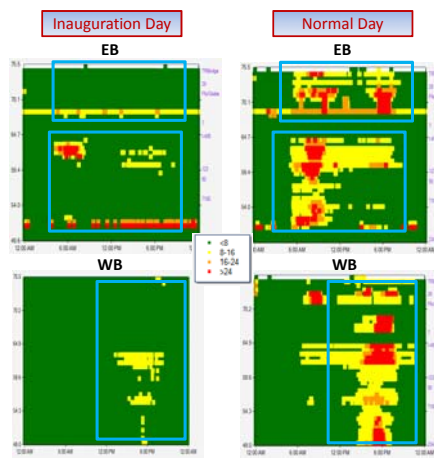


CASE STUDIES

Traffic incident: I-66 westbound on February 5, 2008 10:50 AM (Reported)



Inauguration Day : I-66 traffic



SYSTEM ARCHITECTURE

