Preliminary Analysis of Proposed Connections Between Tysons and Dulles Toll Road

Presented to:

PC Tysons Committee

April 15, 2010

Goal

Identify the minimum number of new ramps and other improvements necessary to accommodate estimated 2030 traffic

Methodology

- Analyze existing conditions
- Analyze no-build option with 2030 volumes
- Determine improvements - look at:
  - Intersections closest to interchange
  - Distribution of traffic
  - Merge of traffic entering DTR

Intersections Closest to Interchanges

At Rt. 7 and Tyco Road

- Congested presently
- Severe congestion in 2030 (with no improvements)
- Spot improvements will alleviate most congestion

Intersections Closest to Interchanges (continued)

At International and Spring Hill

- Congested presently
- Severe congestion in 2030 (with no improvements)
- Spot improvements will alleviate congestion in p.m. peak, a.m. peak requires additional measures

Distribution of Traffic

Findings – no build:

- The estimated traffic to be accommodated by two interchanges is too high (4,000 vph in p.m. peak, 2030)
- The distribution of traffic between the grid and the DTR is not efficient

Recommendation:

- One additional inbound ramp and one additional outbound ramp is nearly enough

Traffic Entering DTR

Findings

- Estimated traffic volume (p.m. peak) cannot be accommodated on the existing 4 lanes of the DTR

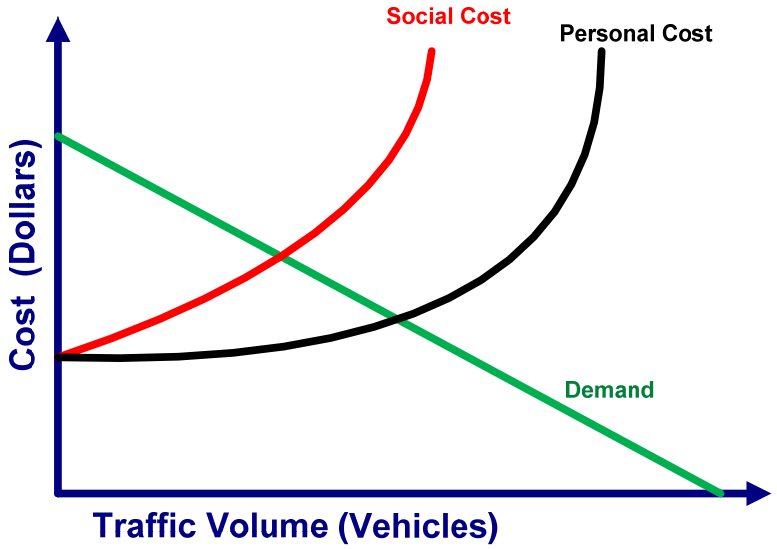
Recommendation

- Add an additional lane on the DTR in the westbound direction OR
- Implement an aggressive traffic management program

Traffic Management

- Open Road Tolling – Peak Period Variable Pricing
- Active Traffic Management (ATM) – Main Line Speed Harmonization
- Ramp Capacity Leveling

Peak Period Variable Pricing



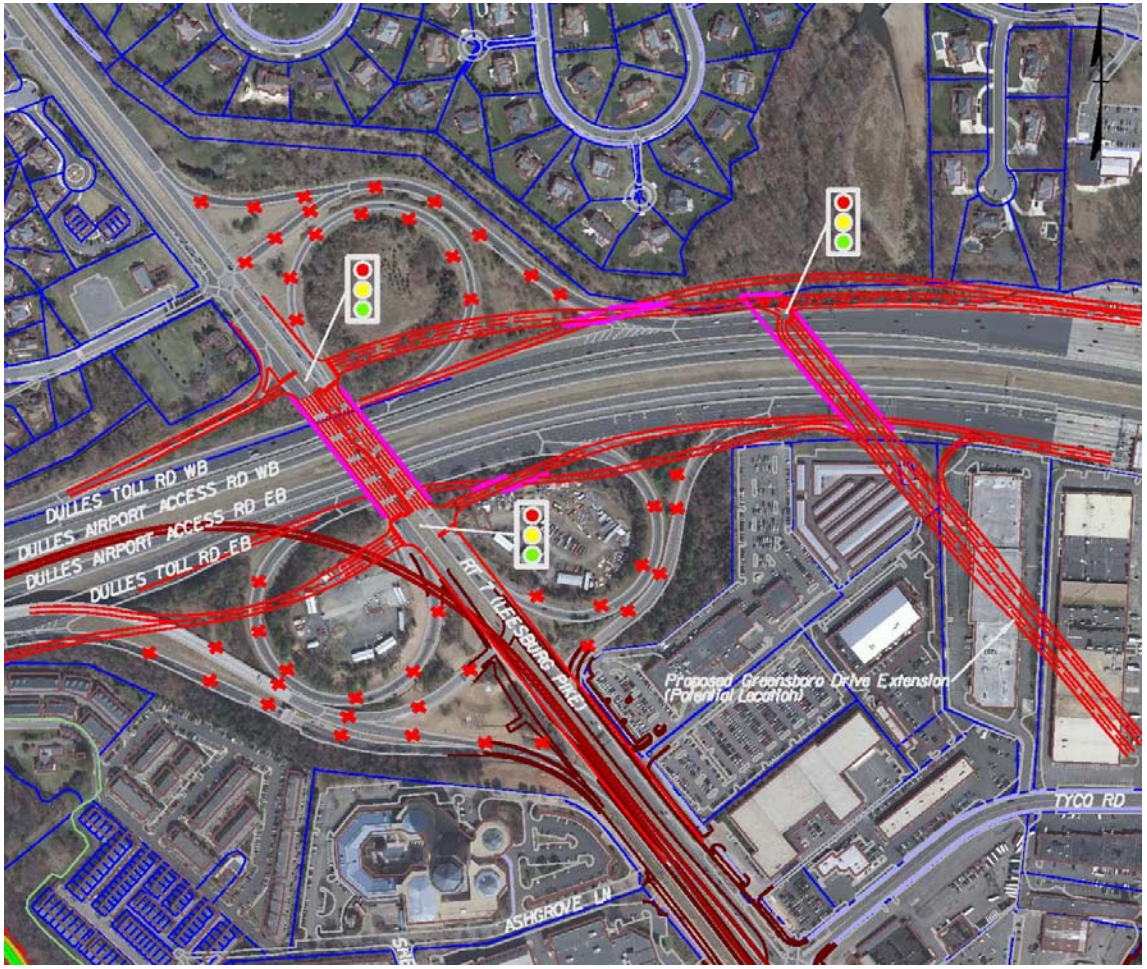
- Increase toll in peak, fee savings in shoulder hours

A 10% to 20% reduction in peak period traffic

Active Traffic Management (ATM) – Main Line Speed Harmonization

Ramp Capacity Leveling

- Informing motorist of where the available capacity exist
- Traveler information for route alternatives
- Variable Messages Signs
- Radio Traffic Broadcasts
- PDA Alerts
- Ramp capacity leveling spreads traffic evenly over all available ramps


DULLES TOLL RD WB
DULLES AIRPORT ACCESS RD WB
DULLES AIRPORT ACCESS RD EB
DULLES TOLL RD EB
RT 7 LEESBURG PIKE
Proposed Greensboro Drive Extension
(Potential Location)
TYCO RD
ASHGROVE LN

Overall Conclusions

- One additional ramp into and one additional ramp out of Tysons can accommodate traffic. Traffic management is required
- An aggressive peak period variable pricing program is required to avoid an additional lane in the westbound direction of the DTR
- The additional ramps can be accommodated at Greensboro Drive or at a connection to Jones Branch Drive or a combination
- The accommodation of the additional ramps at Boone Blvd. is unlikely