



495 AND 95 EXPRESS LANES

DYNAMIC FREEWAY MANAGEMENT APPLICATIONS

ITSVA TRANSPORTATION ROUNDTABLE

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VIRGINIA 495 AND 95 EXPRESS LANES



495 Express Lanes



95 Express Lanes



HOW THE VIRGINIA EXPRESS LANES WORK

- Carpools, buses and motorcycles travel toll-free
- Other drivers have new option to pay a toll for a faster trip
- Dynamic tolls adjust based on real-time traffic to keep drivers moving in the Express Lanes
- Toll prices displayed on signs before entry points
- Maintains highway speeds and federal required performance standards
- E-ZPass Flex features HOV-3 and Toll modes



VIRGINIA EXPRESS LANES - OVERVIEW OF PROVIDING A PREDICTABLE TRIP

EXPRESS LANES OPERATIONS CENTER

We collect real-time roadside data from within the Express Lanes corridor. The information is fed into a toll pricing algorithm, which calculates the tolls drivers see on pricing signs and ensures travel speeds of at least 55 mph in the Lanes.



MANAGING TRAFFIC

Because there is a requirement to maintain minimum average speeds on the Express Lanes, there is no toll cap. The dynamic toll on the Express Lanes helps ensure the requirements are met.

While tolls during off-peak hours aren't always necessary to manage demand, they cover on-going operational and maintenance costs.

TOLL PRICES

On-road technology collects data from more than 20 small segments within the Express Lanes corridor to price specific trips on the Lanes.

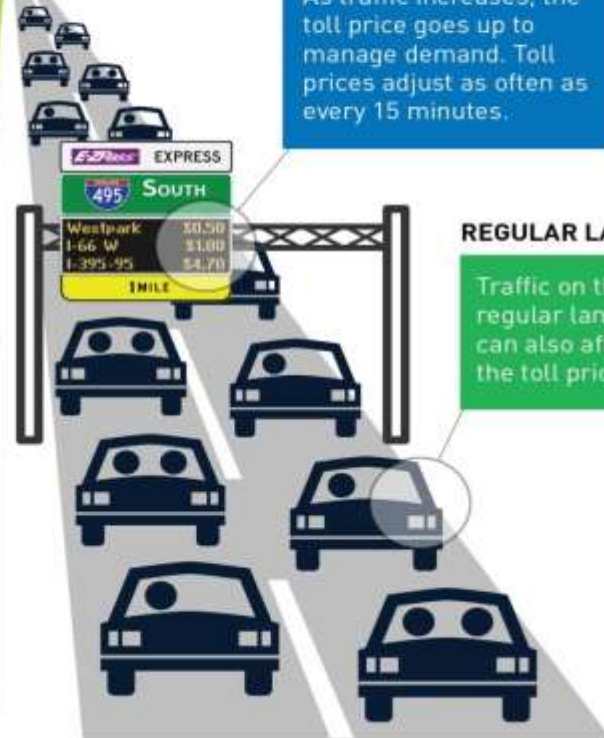
As traffic increases, the toll price goes up to manage demand. Toll prices adjust as often as every 15 minutes.

SENSORS

Sensors are located every 1/3 mile along the Express Lanes corridor and measure traffic volume and speed to calculate density. Density is how crowded the Lanes are.



EXPRESS LANES



REGULAR LANES

REGULAR LANES

Traffic on the regular lanes can also affect the toll price.

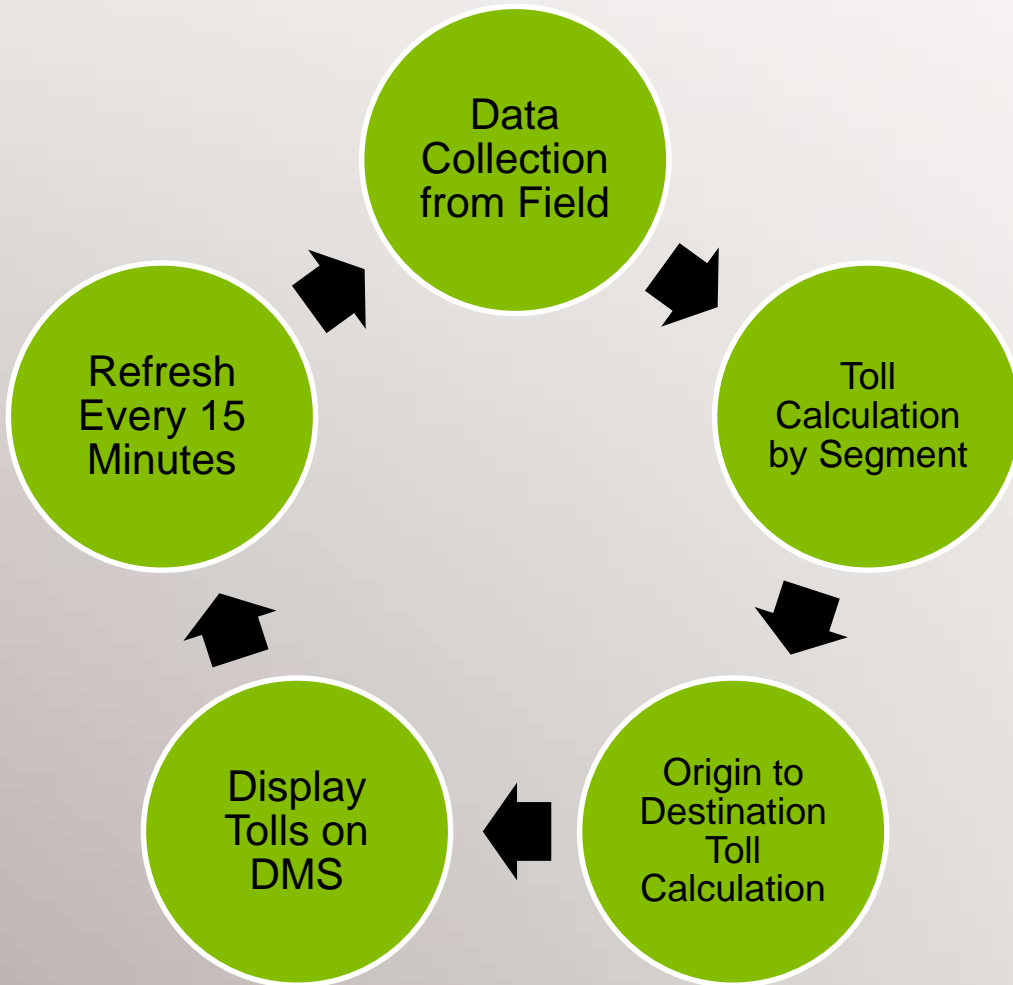
EXPRESS
495 SOUTH
Westpark \$0.50
I-66 W \$1.00
I-395-95 \$4.70
1 MILE

DYNAMIC USER INFORMATION SYSTEMS



1. Dynamic Message Signs (Toll Pricing and On-Road Motorist Information)
2. Lane Use Management Signals (LUMS)
3. Variable Speed Limit Signs (VSLs)
4. Static Signage

DYNAMIC TOLLING PROCESS

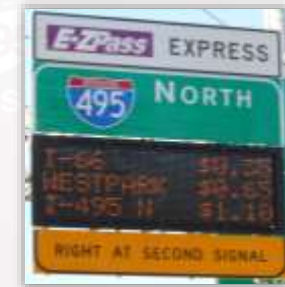


- Tolls are responsive to real-time traffic conditions
- Uses traffic and speed data from roadside microwave vehicle detectors
- Highly configurable toll rates and analysis tools

DYNAMIC AND STATIC SIGNAGE OVERVIEW

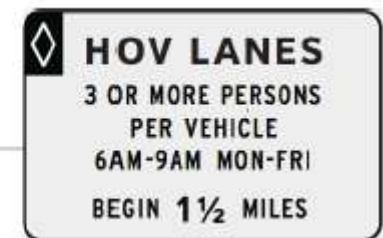
Both 495 and 95

- DMS with maximum three exits displayed (short, medium, long)
- Same regulatory signage

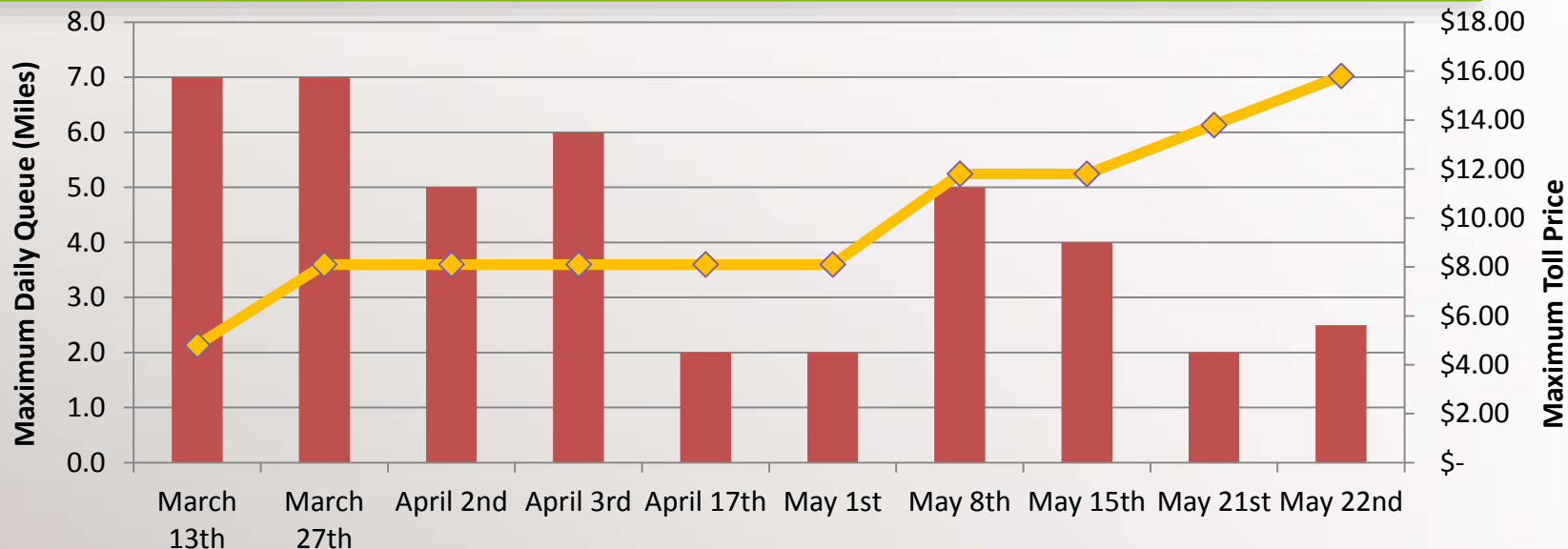


95 Express Lanes

- DMS signs over Express Lanes (zone pricing)
- Slip ramp exits listed on DMS
- Express to HOV and HOV to Express



DYNAMIC SYSTEMS APPLICATIONS



Press Releases

MAY 20, 2015

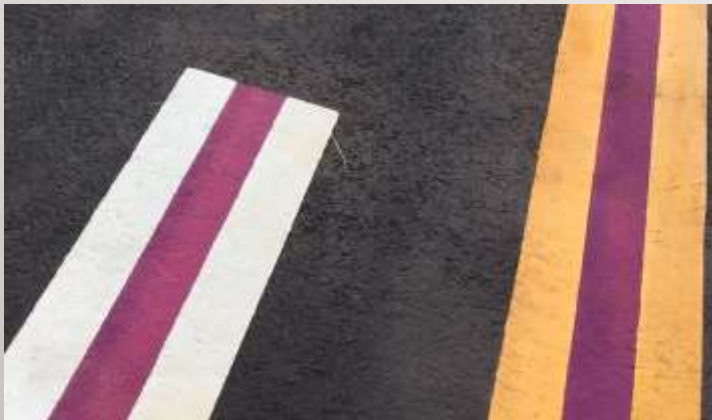
HEAVY TRAVEL EXPECTED ON EXPRESS LANES MEMORIAL DAY WEEKEND

Delays Possible Friday During Peak Travel Times



- Toll prices are used to manage congestion
- Website and media press releases targeted to customers during high travel periods
- Real-time DMS communication for toll pricing, and on-road conditions

STANDARD FREEWAY MANAGEMENT TACTICS



- Installation of warning flags on 95 Express Lanes gates reduced strike events by 50%
- Experimental and traditional pavement markings used to inform motorists
- Overhead flashing beacons installed at a key decision point prior to the 495 Express Lanes