

# Express Toll Lanes and Their Proposed Use on the Capital Beltway

## Open Houses

### Montgomery County

**Location:**

Walter Johnson High School  
6400 Rock Spring Drive  
Bethesda, MD 20814

**Times:**

5:00 PM to 8:00 PM

**Date:**

Monday, May 17, 2004

### Prince George's County

**Location:**

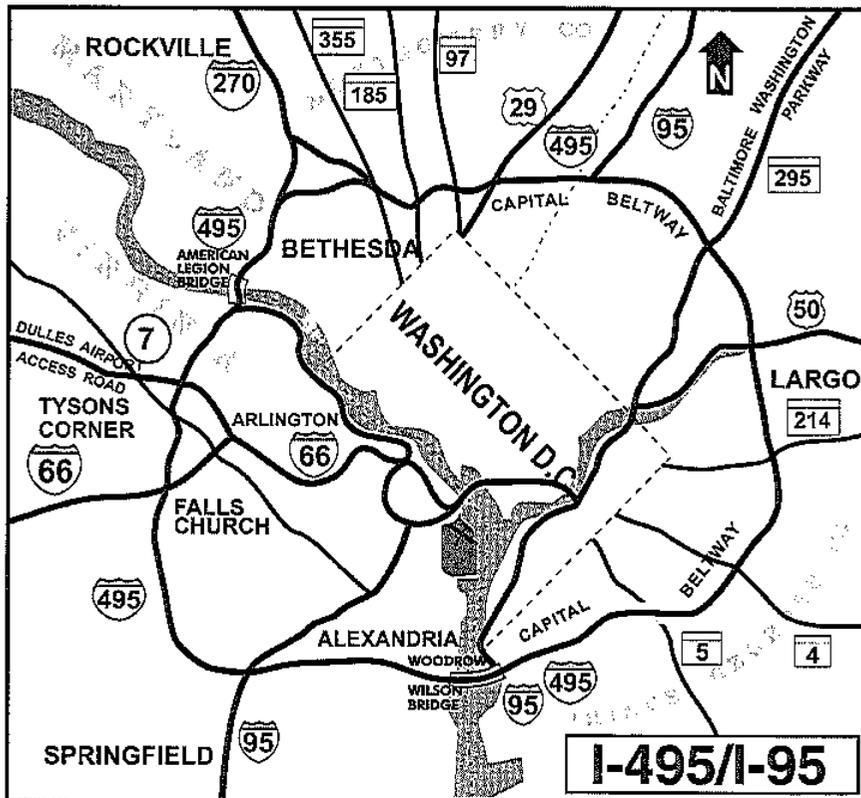
Largo High School  
505 Largo Road  
Upper Marlboro, MD 20774

**Times:**

5:00 PM to 8:00 PM

**Date:**

Tuesday, May 18, 2004



U.S. Department of Transportation  
FEDERAL HIGHWAY ADMINISTRATION

# Express Toll Lanes and Their Proposed Use on the Capital Beltway

## Project Planning Team

If you have questions about this project, please feel free to contact one of the persons listed below or access the project website at [www.marylandroads.com](http://www.marylandroads.com).

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## Introduction

The Maryland State Highway Administration (SHA) is proposing Express Toll Lanes on I-495/I-95 (the Capital Beltway). Alternates considered and SHA's current thinking on each are presented in the displays at this Open House. We appreciate your taking the time to read this material and attend the meeting.

## Purpose of the Open House

The purpose of this Open House is to reinitiate public involvement activities and to update the public on the status of the study and to receive public input on the alternates that are under consideration. The open house format allows each participant to conduct a self-paced review of important study information. Displays depicting study information will be available between 5:00 PM and 8:00 PM. Please note that there will be no formal presentation.

## Purpose of the Study

The purpose of the study is to improve regional mobility, provide increased safety, maximize travel operational efficiencies, and address current and forecasted travel demand in the Capital Beltway corridor while supporting the area's economic growth and the environment.

## Your Comments

The public is encouraged to participate at the Open Houses, as public input is a key factor in the decision-making process. SHA staff will be available to receive comments and answer questions.

A postage-paid return comment card is included in this brochure for your use.

The brochure comment card can also be used to add your name to the project mailing list. You may also add your name by signing in with the meeting receptionist located at the front door or by sending an email to the project manager at [srajan@sha.state.md.us](mailto:srajan@sha.state.md.us). Input at any time during the study process can be provided in written form, by telephoning or emailing a member of the Project Planning Team listed on the first page of this brochure. Information on the project can also be obtained from the PROJECTS section on the SHA website at [www.marylandroads.com](http://www.marylandroads.com).

## Program Status

The project is included in the Interstate Development and Evaluation portion of the Maryland Department of Transportation's (MDOT) Consolidated Transportation Program (CTP) for 2004-2009. Funding is programmed for the Project Planning phase only. At the present time, funds for final engineering, right of way acquisition, and construction are not programmed.

## Project History and Background

1990s	Maryland Department of Transportation-SHA initiated the Capital Beltway High Occupancy Vehicle (HOV) Lane Study to investigate the feasibility of introducing HOV lanes on Maryland's 42-mile section of the Capital Beltway from the American Legion Bridge to the Woodrow Wilson Bridge.	(HOV), and Transit including options for heavy rail, light rail, and express bus.
1994	The study was reinitiated with a new focus on multimodal transportation improvements.	1996-98 Public workshops held to update the public on the continued development of the alternates.
1995	An introductory public workshop was held to discuss the "Purpose and Need" for the project and to present the proposed alternate strategies. Public/agency involvement and input following that workshop resulted in the refinement of the initial strategies into four distinct alternate packages: No-Build, Transportation System Management/Transportation Demand Management (TSM/TDM), High Occupancy Vehicle Lanes	2000 An Alternates Public Workshop was held.
		2001 The SHA and the Maryland Transit Administration (MTA) conducted more detailed evaluations which resulted in recommendations that the HOV and rail transit studies be divided into two separate studies: the Capital Beltway Study and the Purple Line Study (now called Bi-County Transitway).
		2003 The SHA project team began to develop more cost-effective alternates, called Express Toll Lanes.

## Project Need

I-495/I-95 (the Capital Beltway) provides an essential east coast highway link serving local, regional, and interstate trips. It is the only circumferential route in the Washington, D.C. area, connecting many radial routes such as I-270, US 29, I-95, the Baltimore-Washington Parkway, and US 50. Current traffic exceeds 250,000 vehicles per day in some sections and is projected to increase to about 300,000 vehicles per day by 2025. The study limits include Maryland's entire portion of the Beltway,

which extends from the American Legion Bridge to the Woodrow Wilson Bridge. The study area is located within Montgomery and Prince George's counties.

In Maryland, the Capital Beltway is 42 miles long and generally eight lanes wide with the right-of-way along the highway varying between 200 feet and 300 feet.

The Capital Beltway is an element in the national highway network and the local metropolitan transportation system, which

serves a substantial amount of interstate, regional, and local traffic. The eastern half of the Capital Beltway, designated I-95, as well as I-495, is part of the U.S. Department of Transportation's National Highway System and functions as a link in the Maine to Florida interstate route.

The Capital Beltway provides the highway link to many of the region's other transportation services including airports, rail and port terminals, and bus and rail transit services. Due to the extensive linkage of the Beltway to other transportation facilities in the region, congestion on the Capital Beltway has an adverse effect on regional mobility.

The need for the Capital Beltway Study is based on the following issues:

- Population and employment growth projections indicate substantial regional growth in suburban areas served by the Beltway.
- Congestion on radial routes inside the Beltway is causing residential and commercial development to relocate to areas outside the Beltway, which leads to an increase in short distance travel between major radial routes.
- Lack of alternative routes to serve circumferential travel markets.
- High rate of congestion-related crashes on the Beltway.

- Increasing traffic volumes indicated by existing and projected average daily traffic.
- Inadequate capacity to accommodate existing and projected traffic.

## Traffic Congestion

The Capital Beltway is the busiest highway in Maryland. Traffic conditions on the Capital Beltway include regular occurrences of very congested (or gridlock) conditions, particularly during rush hour periods. This condition will continue to worsen as traffic volumes increase due to the growing number of households and jobs in the region.

Transportation planners use Level of Service (LOS), expressed as "A" through "F", as a qualitative measure of the highway operating conditions. LOS "A" describes free-flow vehicular movements. Vehicles occupying the maximum capacity of a roadway occurs at LOS "E" and gridlock is described at LOS "F".

Traffic projections as measured by Average Daily Traffic (ADT) volumes for the year 2025 indicate that circumstances will worsen considerably, extending LOS "F" conditions beyond the current peak hours and to additional locations. The traffic volume table highlights the measured ADT volumes (2000) and projected ADT volumes (2025) for segments of the Beltway.

## Existing and Projected Volumes (ADT and Levels of Service (LOS)) along the Maryland Capital Beltway

Beltway Segment	2000		2025		Volume Increase
	ADT Volume	LOS AM/PM	ADT Volume	LOS AM/PM	
<b>Montgomery County</b>					
American Legion Bridge to I-270	222,650	E/F	297,300	F/F	34%
MD 355 to MD 97	250,850	F/F	289,600	F/F	15%
MD 97 to I-95	248,700	E/F	301,500	F/F	21%
<b>Prince George's County</b>					
I-95 to US 50	236,400	F/F	302,200	F/F	28%
US 50 to MD 4	187,400	E/F	249,000	F/F	33%
MD 4 to MD 210	193,400	E/F	239,900	E/F	24%

Note: ADT = Average Daily Traffic; LOS = Level of Service

### Safety

SHA accident statistics show that the Maryland portion of the Capital Beltway experienced 6,800 police-reported accidents during a three and a half year period between January 2000 and June 2003. These accidents resulted in an average rate, which is significantly higher than the statewide average for a similarly designed highway. Many of these accidents occurred at, or approaching an interchange.

Both rear-end and sideswipe accidents were significantly higher than the statewide average, which could be a symptom of the stopping and slow moving traffic. The truck related accidents were also significantly higher than the statewide average.

## Study Status



The chart above shows steps in SHA's Project Planning process. These Open Houses present the preliminary alternates under consideration for the Capital Beltway Study and SHA's current thinking.

## Preliminary Alternates Evaluated and SHA's Current Thinking

A range of alternates is currently under consideration to address the needs of the Capital Beltway. Although these improvements may not solve the traffic congestion problem along the Capital Beltway, they would provide additional mobility and options for motorists. SHA is currently evaluating the cost-effectiveness of these alternates and will determine which ones should be recommended for further study. SHA's current thinking on these alternates is provided at the end of each description. *SHA is currently thinking to recommend the No-Build, Transportation System Management/Transportation Demand Management (TSM/TDM), and 6 General Purpose & 4 Express Toll Lanes for more detailed study.*

All of the alternates include geometric upgrades and adjustments to the interchanges within the study area. The alternates also include the addition of one lane in each direction for the entire length of the Beltway, and a second lane in each direction between the I-270 spurs. Therefore, the proposed typical section of five total lanes per direction would be consistent for the entire study corridor that extends from the American Legion Bridge to the Woodrow Wilson Bridge.

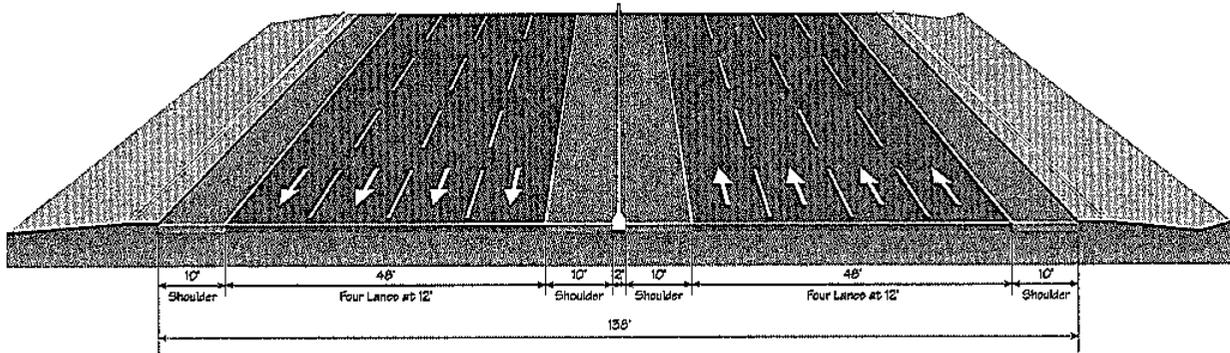
SHA is also evaluating how enforcement would be addressed. Enforcement is a critical component of successful Express Toll Lanes and a few options that are under consideration include police enforcement, video enforcement, or self-enforcement.

All alternates developed would be coordinated with the Virginia Department of Transportation's Capital Beltway Study.

Alternate	SHA's Current Thinking
No-Build	Carry Forward
TSM/TDM	Carry Forward
High Occupancy Vehicle (HOV) Lanes	Do not carry forward
High Occupancy Toll (HOT) Lanes	Do not carry forward
8 General Purpose & 2 Express Toll Lanes	Do not carry forward
6 General Purpose & 4 Express Toll Lanes	Carry Forward
8 General Purpose & 2 Express Toll Lanes At-Grade & 2 Express Toll Lanes, Elevated	Do not carry forward
8 General Purpose & 4 Express Toll Lanes, Elevated	Do not carry forward
8 General Purpose & 1 or 2 Reversible Express Toll Lanes	Do not carry forward

The following sections describe the nine alternates currently under consideration.

**No-Build:**



The No-Build alternate, often called the base case, includes all projects in the most recent Constrained Long Range Transportation Plan for the Washington region adopted by the Metropolitan Washington Council of Governments - Transportation Planning Board. It also includes routine maintenance and

safety improvements along the Capital Beltway. This alternate serves as the basis for comparison of all other alternates.

**SHA's current thinking is to recommend this alternate for more detailed study.**

## TSM/TDM:

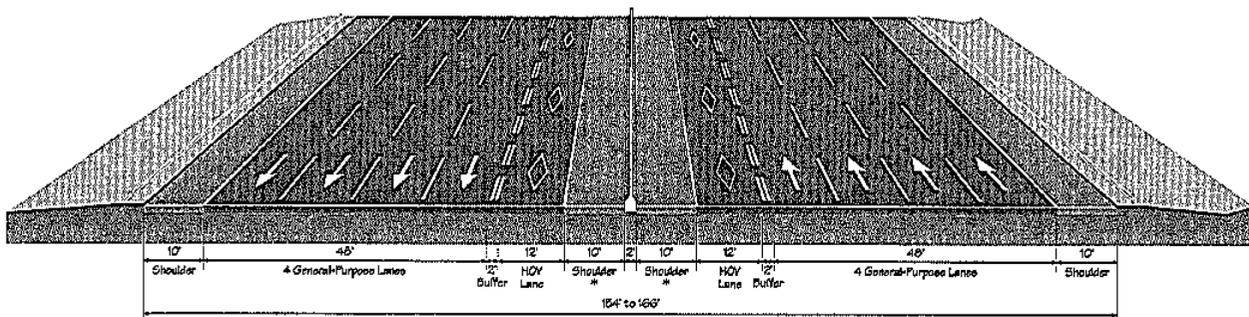
The TSM strategies are improvements that increase safety and enhance operations without any increase in lane capacity. Options include interchange reconfigurations and enhanced traveler information. The TSM alternate includes interchange reconfigurations at approximately 10 interchanges to remove weaving areas along the main line, between loop ramps in cloverleaf interchanges.

The TDM strategies focus on system demand and techniques to change drivers' behavior. TDM strategies are

most effective on a regional basis and are commonly implemented through private employers. One or more of these options could be combined with other alternates to increase their effectiveness. The TDM options will identify potential locations for park-and-ride lots in the immediate vicinity of the Capital Beltway.

**SHA's current thinking is to incorporate this alternate into the build alternates.**

## High Occupancy Vehicle (HOV) Lanes:



\* INSIDE SHOULDERS VARY FROM 4' TO 10'

The HOV alternate would provide one concurrent flow (no barrier separation) lane per direction designated for HOV use (bus, vanpool, carpool or any vehicle meeting minimum passenger requirements such as "two or more", "three or more", or "four or more" passengers per vehicle). Additional attributes of the HOV alternate include:

- HOV usage during peak periods only. HOV lane would revert to general use during non-peak periods.
- HOV lane would not be physically separated from general purpose traffic.

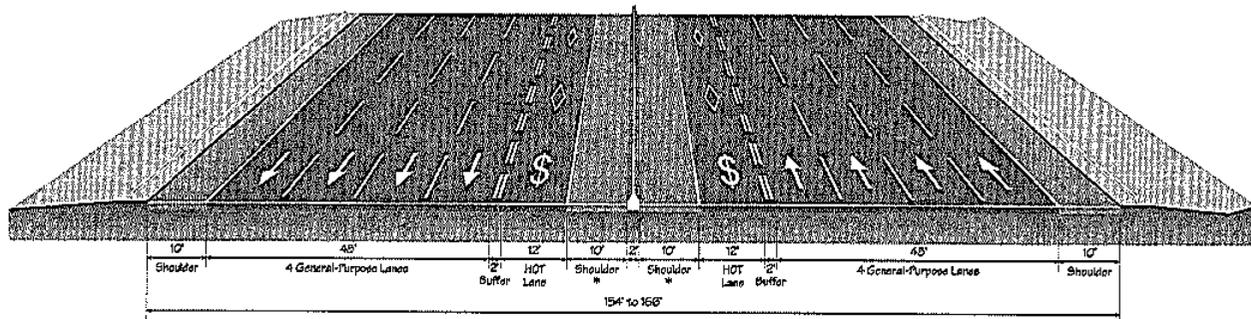
- Access into HOV lanes would be provided with or without direct ramp connections. Direct HOV interchange connections would be provided at US 50, I-95, and the two I-270 spurs. Drivers would also be able to access the HOV lane between these interchanges.

The benefits of this increased capacity

would only be realized by HOV users. This is not considered a cost-effective option because it would not generate revenue, which is essential to the implementation of these improvements.

**SHA's current thinking is to not recommend this alternate for further consideration.**

### High Occupancy Toll (HOT) Lanes:



• INSIDE SHOULDERS VARY FROM 4' TO 10'

The HOT alternate would provide one additional concurrent flow (no barrier separation) lane per direction for high occupancy vehicles (HOV) to travel free of charge and single occupant vehicles (SOV) to pay a fee.

- Tolls would vary based on traffic conditions or time of day and would be collected using electronic toll collection (ETC), eliminating the need for tollbooths.
- Access into HOT lanes would be provided with or without direct ramp connections. Direct connections would be provided at US 50, I-95,

and the two I-270 spurs. Drivers would also be able to access the HOT lane between these interchanges.

This alternate would offer minimal capacity improvement for SOV due to the high projected HOV volumes. Enforcement would be complicated with the implementation of this alternate because it is difficult to differentiate the SOV drivers paying a toll and violators. In addition, there is limited revenue potential for this alternate.

**SHA's current thinking is to not recommend this alternate for further consideration.**

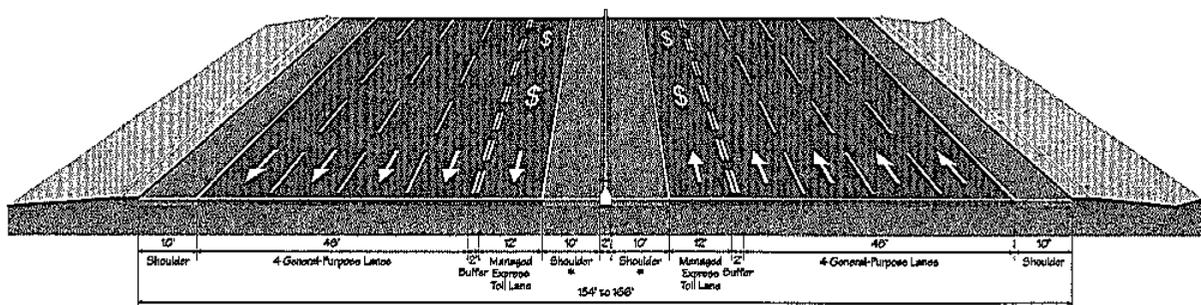
## Express Toll Lanes

Express Toll Lanes differ from traditional toll roads in that toll-free lanes and toll lanes could exist side-by-side on the same roadway, offering drivers the choice of using the toll lanes when time is most valuable to them and using the non-tolled general purpose lanes at other times. The concept of Express Toll Lanes can be applied to existing and/or new highway lanes. Express Toll Lanes are designed to move traffic most efficiently in those lanes and, indirectly, move traffic on the entire roadway more efficiently. **Technological advances allow fees charged for use of the Express Toll Lanes to be collected electronically without the need for tollbooths.**

Much like discount pricing programs offered by utilities, airlines, and transit systems to encourage off-peak use, Express Toll Lanes can be designed and operated to encourage and reward drivers who change the time of their travel from peak to off-peak times when they have the flexibility to do so. Another example familiar to all of us is that of long distance telephone service and cell phones whose pricing often is structured to encourage use when overall demand is lower - i.e., nights and weekends.

Express Toll Lane programs can be structured to encourage motorists to alter the time of their travel to non-peak hours and they can provide choices for travelers who do not have the option of switching their travel time - i.e., the option to pay a fee to gain access to the generally free-flowing Express Toll Lanes. For instance, a parent rushing to pick up their child at daycare or someone who must get to their workplace on time can choose to pay a toll to travel in the free-flowing lanes. In doing so, this improves the travel time not only for this individual but also for those continuing to use the general purpose lanes on that particular day.

### 8 General Purpose & 2 Express Toll Lanes:



This alternate would provide one additional concurrent flow (no barrier separation) lane per direction that would be tolled.

- The proposed roadway section would include eight general purpose lanes and two Express Toll Lanes. (See description of Express Toll Lanes above)

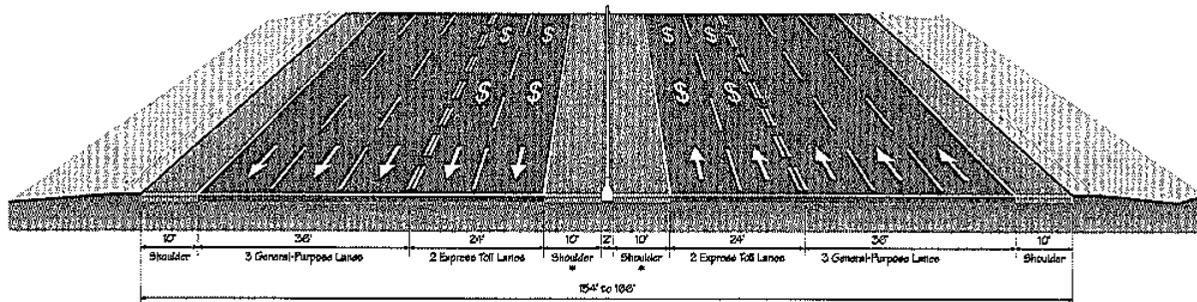
- Tolls would vary based on traffic conditions or time of day so the Express Toll Lanes would operate at an acceptable level of service.

This alternate would offer drivers the choice to select a generally non-congested route by using the Express Toll Lanes. Express Bus service would take advantage of these lanes. Although this alternate provides a more cost

effective option with the use of Express Toll Lanes, it has limited revenue potential because there is only one toll lane in each direction. In addition, the inability to pass vehicles in the toll lane would reduce travel timesavings.

**SHA's current thinking is to not recommend this alternate for detailed study.**

### 6 General Purpose & 4 Express Toll Lanes:



\* INSIDE SHOULDERS VARY FROM 4' TO 10'

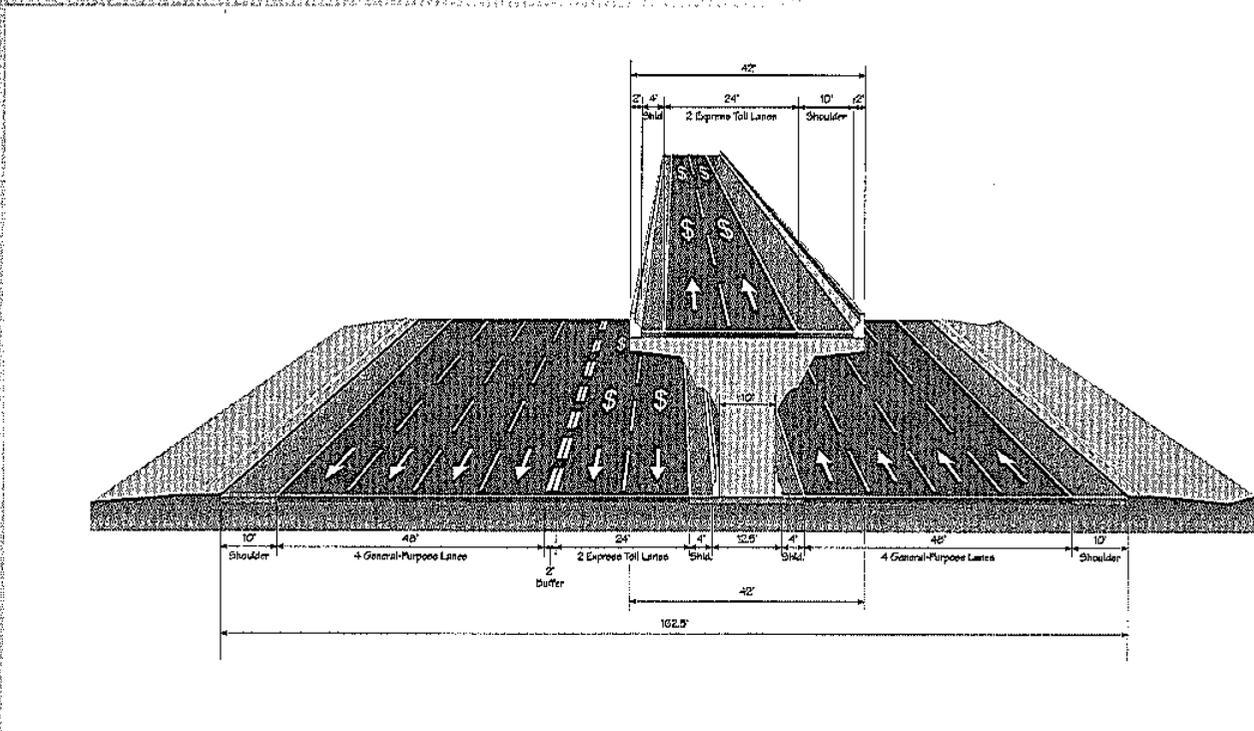
This alternate would provide one additional concurrent flow lane (no barrier separation) per direction that would be tolled and it would convert one existing general purpose lane per direction to be tolled.

- The proposed roadway section would include six general purpose lanes and four Express Toll Lanes.
- Tolls would vary based on traffic conditions or time of day so the Express Toll Lanes would operate at an acceptable level of service.

This alternate would offer drivers the choice to select a generally non-congested route by using the Express Toll Lanes. This alternate generates the maximum revenue because there would be two tolled lanes in each direction; therefore, it provides a potentially cost-effective transportation infrastructure. Express bus service could take advantage of these lanes.

**SHA's current thinking is to recommend this alternate for detailed study.**

## 8 General Purpose & 2 Express Toll Lanes, At-Grade & 2 Express Toll Lanes, Elevated:



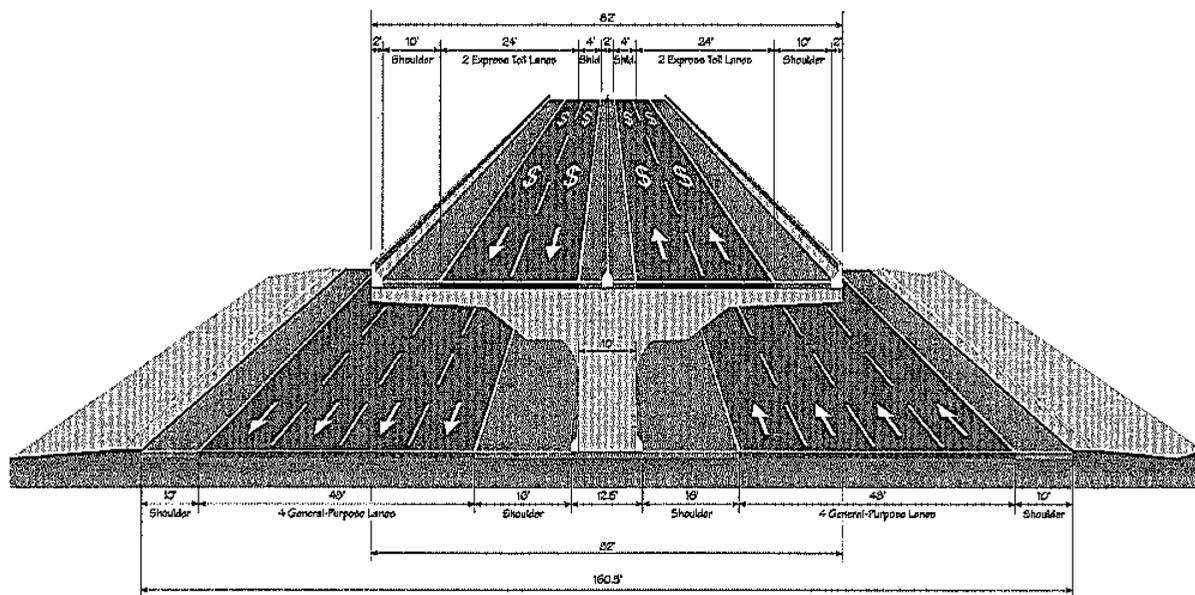
This alternate would provide two additional tolled lanes per direction – one per direction on structure and one per direction at-grade.

- The proposed roadway section would include eight general purpose lanes, two Express Toll Lanes at-grade and two Express Toll Lanes on structure.
- All four of the new lanes would be tolled.
- Tolls would vary based on traffic conditions or time of day so the Express Toll Lanes would operate at an acceptable level of service.

This alternate would have numerous construction-related issues due to the elevated lanes. It would include the construction of interchange ramps connecting to the elevated structures that may be over 80 feet high. It would have greater noise and aesthetic impacts associated with the elevated lanes. In addition, the elevated lanes would have higher long-term maintenance costs than at-grade lanes. This alternate appears to have a prohibitively high cost.

***SHA's current thinking is to not recommend this alternate for detailed study.***

## 8 General Purpose & 4 Express Toll Lanes, Elevated:



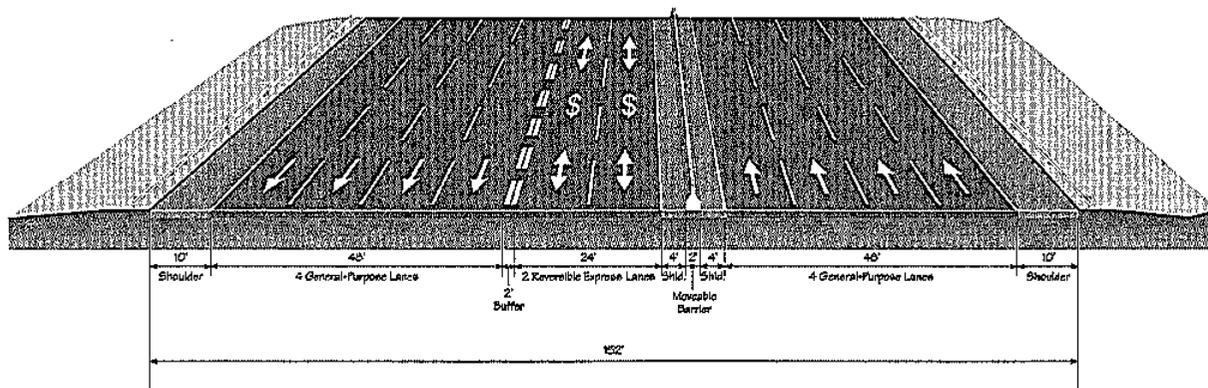
This alternate would provide two additional tolled lanes per direction on structure in the median of the existing roadway.

- The proposed roadway section would include eight general purpose lanes and four elevated Express Toll Lanes. All lanes on the structure would be tolled.
- Tolls would vary based on traffic conditions or time of day so the Express Toll Lanes would operate at an acceptable level of service.

Similar to the previous alternates, this alternate would involve the construction of interchange ramps as high as 80 feet with greater noise and aesthetic impacts more severe than those caused by an alternate that does not include an elevated roadway. The construction and maintenance costs for this alternate appear to be prohibitively high as well.

***SHA's current thinking is to not recommend this alternate for detailed study.***

## 8 General Purpose & 1 or 2 Reversible Express Toll Lanes:



This alternate would provide one or two additional lanes per direction that would be designated for reversible lane use.

- The proposed roadway section would include eight general purpose lanes and one (or two) reversible lanes.

This configuration is intended to serve the corridor with predominant rush-hour flow in one direction; therefore, the reversible lane(s) would operate in the direction of peak traffic. However, the

Capital Beltway does not have one-directional travel patterns. The highest traffic split is 45% in one direction and 55% is the opposite direction. These percentages do not justify a reversible lane.

***SHA's current thinking is to not recommend this alternate for detailed study.***

## Environmental Overview

The environmental inventory of the study area is currently being updated. The inventory identifies the existing socioeconomic, cultural, and natural environmental resources. The impacts of the proposed alternates on the environment will be assessed and documented in detail based on subsequent engineering. This information will be available at future public meetings.

## Virginia's Capital Beltway Study

Maryland and Virginia continue to coordinate their respective studies for the Capital Beltway corridor in an effort to provide a unified transportation planning process between the two states. Recent activities completed by the Virginia Department of Transportation (VDOT) related to the Capital Beltway are listed on the next page.

- Public hearings for the Virginia Beltway studies were held in May 2002. The Final Environmental Impact Statement for the Virginia Beltway Study is scheduled to be completed by Fall 2004. VDOT is evaluating a Public/Private Transportation Act (PPTA) proposal for the use of HOT lanes on the Beltway.
- VDOT recently announced that HOT lanes would be considered for the section between Springfield (I-95) and the Dulles Toll Road. One of the alternates includes two HOT lanes and four general-use lanes in each direction, with free travel for HOV3+.

- A Final Environmental Impact Statement (FEIS) will be prepared in 2006 and a Record of Decision is anticipated in Fall 2006.

### Non-Discrimination in Federally Assisted and State-Aid Programs

Should you have any questions concerning non-discrimination in federally assisted and State-Aid programs, please contact:

Mr. Walter Owens, Jr., Director  
 Office of Equal Opportunity  
 State Highway Administration  
 707 North Calvert Street  
 Baltimore, MD 21202  
 Phone: (410) 545-0315

### Next Steps

- During the remainder of 2004, the SHA Study Team will develop detailed engineering alignments and conduct detailed analysis of the natural and socioeconomic environments.
- Informational Public Workshops will be held in Fall 2004 to present the results of the detailed engineering studies of alternates and the associated environmental impacts.
- The Draft Environmental Impact Statement (DEIS) will be prepared and a Location/Design Public Hearing will be held in Spring 2005.
- During Fall 2005, SHA will evaluate and assess public and agency comments received on the DEIS and at the Public Hearing.

### Media Used for Notification

The Afro American  
 The El Pregonero  
 The Enquirer Gazette  
 The Gazette  
 The Journal  
 (Montgomery & Prince George's County)  
 The Prince George's Post  
 The Sentinel  
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 The Washington Post  
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