



# I-66 Multimodal Study 3

Inside the Beltway

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## About the Study

The I-66 Multimodal Study is focused on developing a set of recommendations for multimodal mobility packages which can help reduce congestion and improve mobility along the I-66 corridor inside the Beltway, between I-495 and the Theodore Roosevelt Bridge.

## Fact Sheets

- 1** Study Overview and Outcomes
- 2** Issues and Needs and Study Process

## From Issues and Needs to Options

The identified issues and needs (see Fact Sheet #2) in the I-66 study corridor, served as the basis for formulating eleven mobility options. The options represent potential elements that could be incorporated into solutions to address the specific capacity and congestion challenges commuters face on a daily basis. The identification and development of these options was initially informed by market research, stakeholder interviews, previous studies, the technical study team, and members of the Public Agency Representative Committee (PARC). The mobility options were presented to the public at the first round of public meetings in December and refined by the project management team based on public comments. The mobility options selected for the first level of assesment include:

- A. HOV Restrictions
- B1. I-66 Bus/HOV/HOT Lane System – Option 1
- B2. I-66 Bus/HOV/HOT Lane System – Option 2
- C1. I-66 Capacity Enhancement – Option 1
- C2. I-66 Capacity Enhancement – Option 2
- D. Integrated Corridor Management
- E. Arterial Capacity Enhancement
- F. Metrorail Level of Service and Capacity
- G. Bus Transit Level of Service and Capacity
- H. Transportation Demand Management
- I. Bike/Pedestrian System Enhancements

Each mobility option was evaluated to see how it would:

- > Increase the share of non-single occupancy vehicle (SOV) travel in the study area.
- > Increase personal mobility, regardless of mode.
- > Reduce congested Vehicle Miles of Travel (VMT).



To move from options to packages, the study objectives attempt to balance the assessment measures by improving travel options and personal mobility, and minimizing vehicle miles of travel.

# Mobility Options

The following descriptions of the mobility options provide suggested applications and key findings.



## A. HOV Restrictions

- > I-66 lanes in both directions are designated Bus/HOV during peak periods
- > No new lanes added
  - :: In the peak direction, all lanes are Bus/HOV 3+ only during peak periods (no change from CLRP)
  - :: In the reverse-peak direction, all lanes are Bus/HOV 2+ only during peak periods
  - :: In off-peak periods all lanes are open to all traffic

MORNING	EVENING	OFF-PEAK
← Bus/HOV 2+	← Bus/HOV 3+	← All Traffic
← Bus/HOV 2+	← Bus/HOV 3+	← All Traffic
Bus/HOV 3+ →	Bus/HOV 2+ →	All Traffic →
Bus/HOV 3+ →	Bus/HOV 2+ →	All Traffic →

**Key Finding:** Due to the HOV 2+ restriction, this option reduces travel on I-66 in the reverse-peak direction and shifts vehicle travel onto parallel roads or outside the study area.

## B1. I-66 Bus/HOV/HOT Lane System – Option 1

- > Converts I-66 into an electronically tolled Bus/HOV/high occupancy toll (HOT) roadway
  - :: SOV and HOV 2 vehicles would be tolled
  - :: Bus/HOV 3+ vehicles would not be tolled
  - :: Applies to all lanes in both directions 24/7

ALL DAY	
← Free Bus/HOV 3+	Toll: SOV, HOV 2
← Free Bus/HOV 3+	Toll: SOV, HOV 2
Free: Bus/HOV 3+ →	Toll: SOV, HOV 2 →
Free: Bus/HOV 3+ →	Toll: SOV, HOV 2 →

**Key Finding:** This mobility option allows non-HOV 3 vehicles to use I-66 by paying a toll, making full use of the available capacity while maintaining a good level of service. This increases person throughput on I-66 in the peak direction and eases congestion on some of the surface arterials.

## B2. I-66 Bus/HOV/HOT Lane System – Option 2

- > Converts I-66 into an electronically tolled Bus/HOV/HOT roadway and adds a lane in each direction
  - :: SOV and HOV 2 vehicles would be tolled
  - :: Bus/HOV 3+ vehicles would not be tolled
  - :: Applies to all lanes in both directions 24/7

ALL DAY	
← Free Bus/HOV 3+	Toll: SOV, HOV 2
← Free Bus/HOV 3+	Toll: SOV, HOV 2
← Free Bus/HOV 3+	Toll: SOV, HOV 2
Free: Bus/HOV 3+ →	Toll: SOV, HOV 2 →
Free: Bus/HOV 3+ →	Toll: SOV, HOV 2 →
Free: Bus/HOV 3+ →	Toll: SOV, HOV 2 →

**Key Finding:** This option is similar to Option B1 and, due to the added tolled capacity, allows more SOV's access to I-66. This shift helps ease congestion on the surface arterials but also attracts travelers who had previously been using transit.

## C1. I-66 Capacity Enhancement – Option 1

- > An additional lane is added in both directions
  - :: In the peak direction, all lanes are Bus/HOV 3+ only during peak hours
  - :: In the reverse-peak direction, one lane is Bus/HOV 2+ during peak hours, and the rest are general purpose lanes
  - :: In off-peak periods all lanes are open to all traffic

MORNING	EVENING	OFF-PEAK
← All Traffic	← Bus/HOV 3+	← All Traffic
← All Traffic	← Bus/HOV 3+	← All Traffic
← Bus/HOV 2+	← Bus/HOV 3+	← All Traffic
Bus/HOV 3+ →	Bus/HOV 2+ →	All Traffic →
Bus/HOV 3+ →	All Traffic →	All Traffic →
Bus/HOV 3+ →	All Traffic →	All Traffic →

**Key Finding:** This option primarily eases congestion on I-66 in the reverse-peak direction, although the additional incremental capacity is restricted to HOV 2+. The HOV 3+ restriction on all lanes during peak periods limits use of new incremental capacity in the peak direction.

## C2. I-66 Capacity Enhancement – Option 2

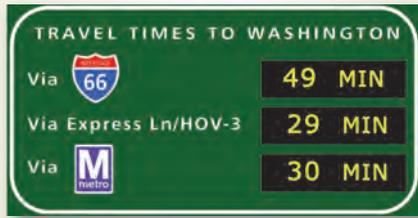
- > An additional lane is added in both directions
  - :: In the peak direction, all lanes are Bus/HOV 3+ during peak hours
  - :: In the reverse-peak direction, all lanes are general purpose lanes during peak hours
  - :: In off-peak periods all lanes are open to all traffic

MORNING	EVENING	OFF-PEAK
← All Traffic	← Bus/HOV 3+	← All Traffic
← All Traffic	← Bus/HOV 3+	← All Traffic
← All Traffic	← Bus/HOV 3+	← All Traffic
Bus/HOV 3+ →	All Traffic →	All Traffic →
Bus/HOV 3+ →	All Traffic →	All Traffic →
Bus/HOV 3+ →	All Traffic →	All Traffic →

**Key Finding:** Because there are no restrictions in the reverse-peak direction with the added capacity, this option primarily eases congestion on I-66 in the reverse-peak direction. This new capacity shifts some traffic from surface arterials. As with Option C1, the HOV 3+ restriction in the peak direction limits use of the new capacity in that direction.

## D. Integrated Corridor Management (ICM)

- > Deploy ICM strategies throughout the corridor
  - :: I-66 Active Traffic Management
  - :: Ramp Metering
  - :: Multimodal Real Time Traveler Information
  - :: Dynamic Merge
  - :: Transit Signal Priority



**Key Finding:** This option includes a range of technological improvements designed to improve traffic flow and operations on roadways throughout the corridor. Improvements will affect both automobiles and buses, making travel in the corridor easier at key locations, such as the I-66/Dulles Connector Road merge.

## E. Arterial Capacity Enhancement

- > Enhance U.S. 50
  - :: Apply access management principles.
  - :: Implement Bus-Only lane in each direction and improve bus service in the corridor.
  - :: Bus lane was introduced by adding new shoulders.
  - :: Shoulder is not open to general traffic during off-peak hours.



**Key Finding:** This option transforms U.S. 50 into a limited access expressway, which increases its capacity and increases vehicle traffic. The increased transit speeds and services from the bus-only lanes do not offset the effects of the capacity improvements for autos. In part, the transit service provided in the option does not fully serve the most-productive transit markets.

## F. Metrorail Level of Service and Capacity Enhancement

- > Provide operating flexibility for Metrorail and an alternative connection between the I 66/Dulles Access Road Corridors and South Arlington through an interline connection between the Orange Line and Blue Line.



**Key Finding:** This option changes the operating plan for Metrorail to provide direct service between the Ronald Reagan Washington National Airport, South Arlington, the Rosslyn-Ballston Corridor, and points west along the Silver Line via a new interline connection between Court House and Arlington Cemetery. This option provides additional service on the Orange/Silver Lines between Court House and East Falls Church and direct connections to new markets. Flexibility of Metrorail is enhanced, but ridership effects in the study area are modest.

## G. Bus Transit Level of Service and Capacity

- > Includes several planned enhancements to local, commuter, and regional bus services including bus route changes and additions.
- > Includes new and enhanced Priority Bus services with 10-minute peak period frequency on I-66, US 29 and US 50.



**Key Finding:** This option increases bus service in the corridor and has the most positive impact on reducing the level of congestion in the study area. The increased transit service also attracts new transit riders and reduces the single occupancy vehicle mode share in the study area.

## H. Transportation Demand Management (TDM)

- > Enhanced TDM strategies are drawn from the I-66 Transit/TDM Study

- |  |  |
|--|--|
| :: Enhanced Corridor Marketing                       | :: Carsharing at Priority Bus Activity Nodes |
| :: Vanpool Driver Incentive                          | :: Enhanced Virginia Vanpool Insurance Pool  |
| :: I-66 Corridor Specific Startup Carpool Incentives | :: Enhanced Telework! VA Support             |
| :: Rideshare Program Operational Support             |  |

**Key Finding:** A range of improved TDM strategies and programs including marketing and outreach, vanpool programs, and financial incentives will be able to attract some new commuters to alternative modes, decreasing the SOV mode share for work trips. The success of this option is dependent on the level of investment.

## I. Bike/Pedestrian System Enhancements

- > Add new connections (on- and off-road) to address gaps and improve connections
- > Improve bicycle/pedestrian access to transit (bus and rail)
- > Expand bicycle parking at transit stations
- > Expand bikesharing program



**Key Finding:** This option includes many improvements to the pedestrian and bicycle systems designed to make non-motorized travel in the study area easier and more appealing. The improvements are especially focused on improving access to Metrorail stations, encouraging more transit use.

## HOW TO STAY INFORMED AND INVOLVED

Stay informed by visiting [www.i66multimodalstudy.com](http://www.i66multimodalstudy.com) where you can learn more about the study and key milestones, find contact information, and view and download study documents, including the December 2011 public meeting presentation and presentation boards, market survey, comment form, map of the study area, Fact Sheets, and Interim Report.

If you are interested in commenting by phone and/or email, please contact us at [info@i66multimodalstudy.com](mailto:info@i66multimodalstudy.com) or 855 STUDY66 (788-3966)

## UPCOMING PUBLIC PARTICIPATION MEETINGS

Two public meetings will be held to capture valued input on the proposed recommendations.

### Arlington County Meeting April 24, 2012

6:30-8:30 pm

*The Navy League Building,  
Main Floor Board Room  
2300 Wilson Boulevard  
Arlington, VA 22201*

### Fairfax County Meeting April 25, 2012

6:30-8:30 pm

*Mary Ellen Henderson  
Middle School  
7130 Leesburg Pike  
Falls Church, VA 22043*



## Next Steps

- > Working with the PARC, the study team is currently sorting through the Mobility Option results to define up to 5 Multimodal Packages for detailed assessment. The Packages represent fully integrated options that combine transit, TDM, bicycle, pedestrian, technology and roadway improvements to address congestion and mobility in the I-66 study area.
- > The various Multimodal Mobility Packages will be presented at the next round of public meetings. The PARC and the study team will develop a final set of recommendations based on the technical results and the public input received.

## Public Participation

Eighty-five public comments have been received since the study's inception and over twenty-five stakeholders have been interviewed about their preferences for multimodal solutions in the I-66 study area. The comments and suggestions were used to inform the mobility options and will be carried forward to the multimodal packages.

Key public and stakeholder comments include:

- > Congestion is a major issue in the I-66 corridor and should be addressed as soon as possible.
- > Prior to considering capacity improvements to I-66, all multi-modal mobility solutions should be evaluated.
- > Support for HOT lanes was mixed, with most respondents wanting more information before making a decision.

Suggested improvements include:

**Metrorail:** Increase Metro train frequency on the Orange Line during peak periods; address the issues of parking availability at Metrorail stations; and increase access to Metrorail stations with bus, bike, and pedestrian connections.

**Bus:** Improve and add bus services (express and local), especially during peak periods, to alleviate Metrorail congestion; and coordinate bus schedules and times so it is a reliable mode for commuters.

**TDM:** Provide incentives to businesses and employees to promote carpooling and alternative mode choices.

**Bike/Pedestrian:** Address the network gaps and improve connections to Metrorail stations and Metrobus stops; add bicycle facilities (e.g., stands, lockers, bikeshares) at Metrorail station; and make safety improvements (e.g., lighting, signage, buffers) to trails.

**HOV:** Implement HOV restrictions for reverse usage and increase the hours of use, but create additional incentives and opportunities for ridesharing; eliminate the hybrid exemption; and increase enforcement.

**Widen I-66:** Increase the number of lanes on I-66 that could be used by general traffic, Bus/HOV traffic or as HOT lanes.

**Arterials:** Improve critical intersections on U.S. 50; and add more public transit to the arterials, including additional buses and/or priority buses.

**Technology:** Improve technology to let drivers know about congestion and accidents.