



**A Presentation by the Project Managers:**

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**&**

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Northern Virginia Transportation Commission**

**for the:  
Public Open House and Hearing**

**December 6, 2005  
George C. Marshall High School  
Fairfax County**

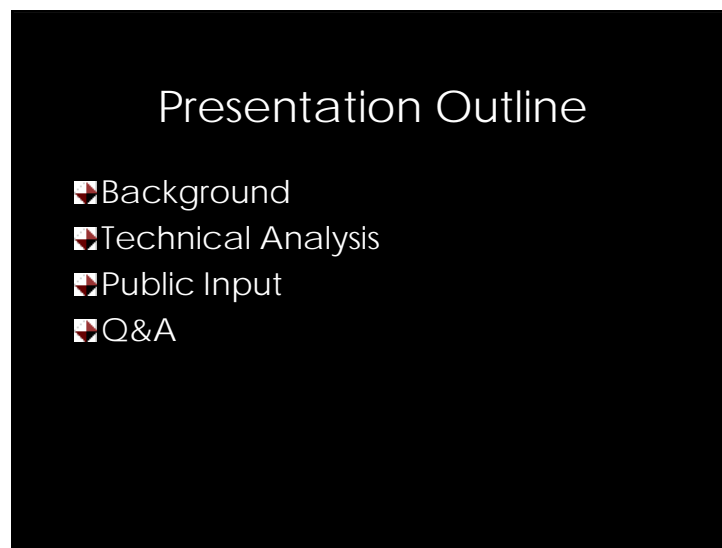
Slide 1



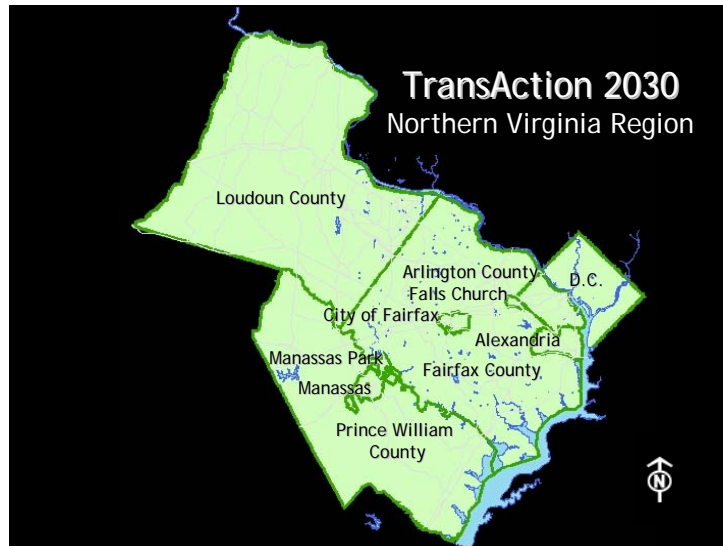
For the past year, the Northern Virginia Transportation Authority has been working on an update to the region's long-range transportation plan. The last plan was approved in December 1999, entitled the Northern Virginia 2020 Transportation Plan, or 2020 Plan. TransAction 2030 is name the NVTA gave to the update of the 2020 Plan. One of the principle charges of the NVTA is a plan that lays out regional transportation priorities.

The TransAction 2030 Plan is a blueprint for the transportation projects needed by the region to address a growing population and travel on all means of transportation. Unlike the Metropolitan region's Constrained Long-Range Plan, TransAction 2030 is not constrained by the available funds known today. It's the collection of projects that are considered essential in addressing the mobility needs of the region.

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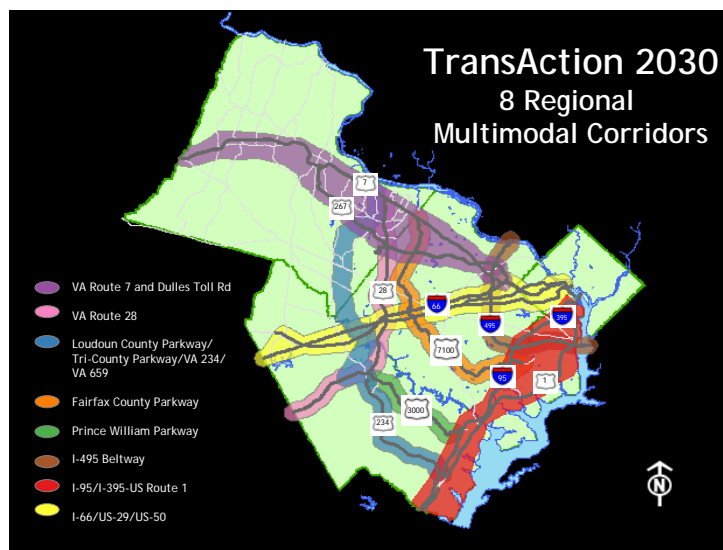
Slide 3



The TransAction 2030 Plan includes the nine jurisdictions of Northern Virginia and will focus on road, transit, bicycle and pedestrian improvements in eight regional corridors:

*Basemaps shapefiles: VDOT*

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## Updating the 2020 Plan

- 2020 Plan was prepared in 1999; much has changed since then
  - Some projects were completed or are underway
  - More studies were conducted
  - Number of vehicle miles traveled in region has grown by 2.1% annually
  - Transit trips have increased by 4% annually



No new projects beyond those already in the 2020 Plan have been added to TransAction 2030 Plan.

*Data sources: Virginia Department of Transportation  
Northern Virginia Transportation Commission*

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## 2020 Vision

- "In the 21<sup>st</sup> century, Northern Virginia will develop and sustain a multi-modal transportation system that supports our economy and quality of life. It will be fiscally sustainable, promote areas of concentrated growth, manage both demand and capacity, and employ the best technology, joining rail, roadway, bus, air, water, pedestrian, and bicycle facilities into an interconnected network."*



Northern Virginia Transportation Coordinating Council

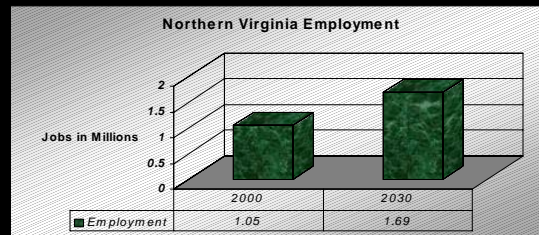
In 1999, Northern Virginia's elected officials, aided by the contributions of citizens, mapped out a vision for our region's transportation future. This vision continues to guide this update of the 2020 Plan.

*Source: Northern Virginia 2020 Transportation Plan, December, 1999*

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## Region is growing

The Washington DC Metropolitan Region will add  
2 million people and 1.6 million jobs by 2030



Our region is growing and we'll need to plan ahead to protect and improve our quality of life in Northern Virginia. The Washington metropolitan region is projected to add 2 million people and 1.6 million new jobs by 2030. Nearly half of the employment and more than half of the population growth is expected to occur in Northern Virginia, where new home construction is not expected to keep up with this demand.

Even if new home construction continuing at a strong pace, there will still be more jobs in the region than there are homes for workers. More and more people will commute to jobs in Northern Virginia from outside the region— either because they can't find homes in the region, or they can't find homes that they can afford.

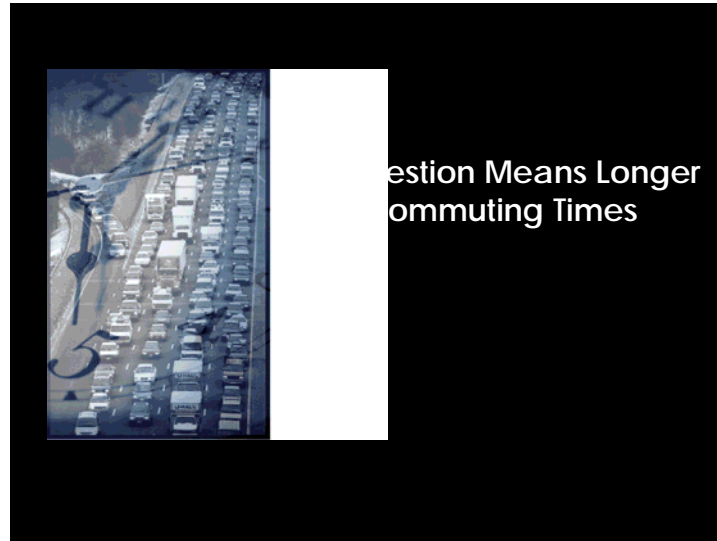
This will lead to longer commutes, more congestion, and poorer air quality.

*Data sources:*

*Reality Check: Envisioning Our Regions Growth, Participant's Guide Book, ULI Washington, February 2, 2005.*

*Metropolitan Washington Council of Governments, Round 6.4a Population and Employment Forecasts.*

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It's no secret that road congestion causes longer commuting times. Recent studies show that the Washington, D.C. region is the third most congested in the nation and suffers from over 125,000 hours per year of traffic delay – this translates to over 33 hours per person --almost a whole week of vacation that the average resident spends sitting in traffic every year! And the situation is only getting worse.

*Photo credits: The Washington Post, December 28, 2004*

*Data source: Texas Transportation Institute, 2004 Annual Urban Mobility Report, <http://mobility.tamu.edu/>*

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Demand exceeds capacity on all forms of transportation in our region. Use of Metrorail has grown 30% over the past eight years and use of Metrobus has grown 25% since 1997.

*Photo credits: James A. Parcell, Washington Post*

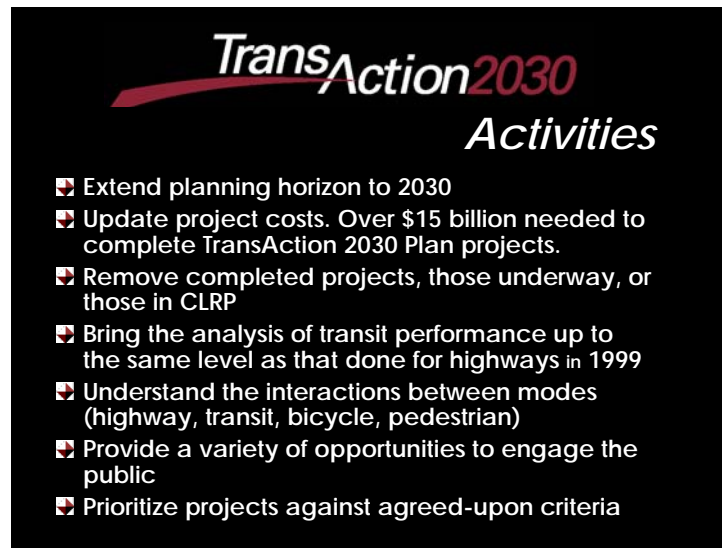
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Use of Virginia Railway Express (VRE), has grown by 76% since 2000, as roadway commuters flock to the train.

*Photo credits: Virginia Railway Express*  
*Data source: Virginia Railway Express*

Slide 11



**TransAction2030**  
*Activities*

- ▣ Extend planning horizon to 2030
- ▣ Update project costs. Over \$15 billion needed to complete TransAction 2030 Plan projects.
- ▣ Remove completed projects, those underway, or those in CLRP
- ▣ Bring the analysis of transit performance up to the same level as that done for highways in 1999
- ▣ Understand the interactions between modes (highway, transit, bicycle, pedestrian)
- ▣ Provide a variety of opportunities to engage the public
- ▣ Prioritize projects against agreed-upon criteria

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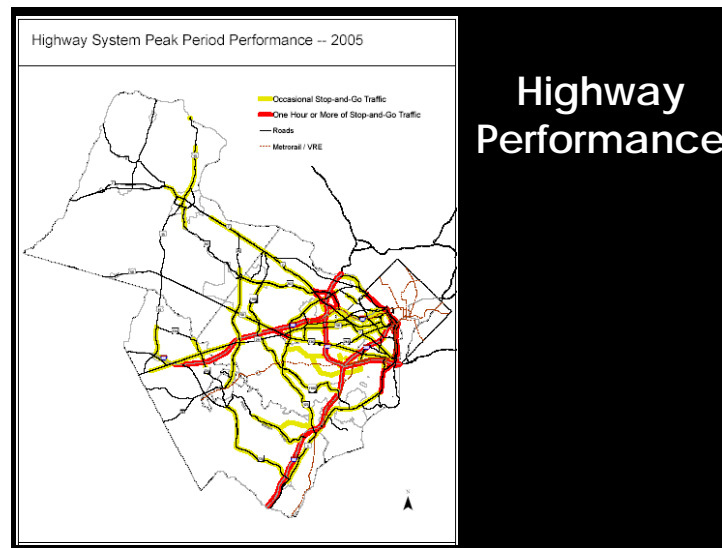


**2020 Plan**

- ▣ Technical analysis focused on auto mode
  - Performance measures generated from the COG model
- ▣ Limited number of transit measures
  - Examples: households within walking distance of rail, daily transit boardings, change in roadway congestion as a result of transit projects
- ▣ No ped, bike performance evaluation

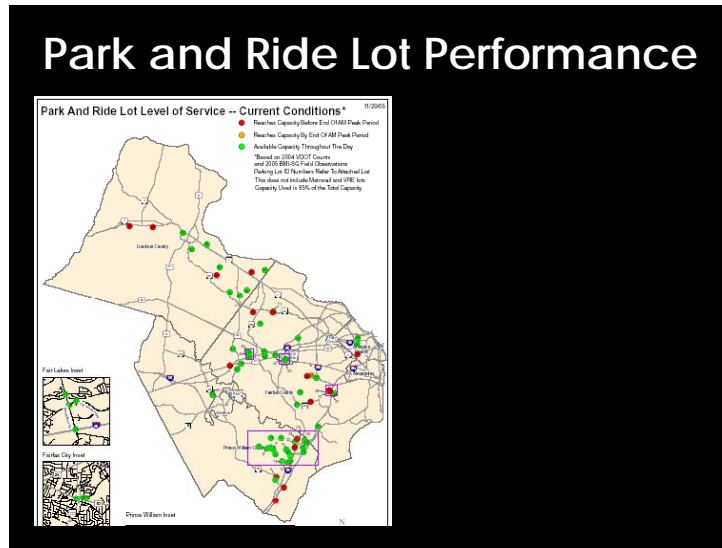
The 2020 Plan provided only limited analysis of transit performance. There was no evaluation of the performance of our pedestrian and bicycle facilities. Since 1999, the transportation modeling has evolved and tools have become available to better assess the effects of transit, bicycle and pedestrian investments. We've made use of these tools in our update to the transportation plan, and believe the result is a much better understanding of our transportation system and ultimately, a better plan.





The next several slides show examples of the different types of analysis underpinning the draft Plan. The maps show the performance of different transportation systems, or networks. The full set of maps for each networks (2005 existing conditions, 2030 CLRP, and TransAction 2030) will be posted on the Project Website along with the final Plan document once approved. Each of the performance measures address 3 networks. The 2005 network of existing conditions based on what's built today. The 2030 CLRP network shows conditions expected in 2030 when the already-funded projects have been built. Finally, the TransAction 2030 Plan network assumes funding will be found and all the projects proposed in this plan are built.

This is the "spaghetti" map showing stop-and-go traffic on our roadways in 2005. The red denotes what we like to call LOS G in NOVA, or one or more hours of stop-and-go traffic per each rush hour period.



Red dots denote park and ride lots that fill up before the end of the morning rush hour. Orange dots are those that fill up by the end of the rush hour, and green dots are those with additional capacity.

## Transit Performance

Five measures

- ▣ Service coverage
- ▣ Passenger load
- ▣ Frequency of service
- ▣ Hours of service
- ▣ Travel time

One of the cornerstones of this planning update is the inclusion of more analysis of transit performance, also called Transit level of service.

We looked at five transit LOS measures....

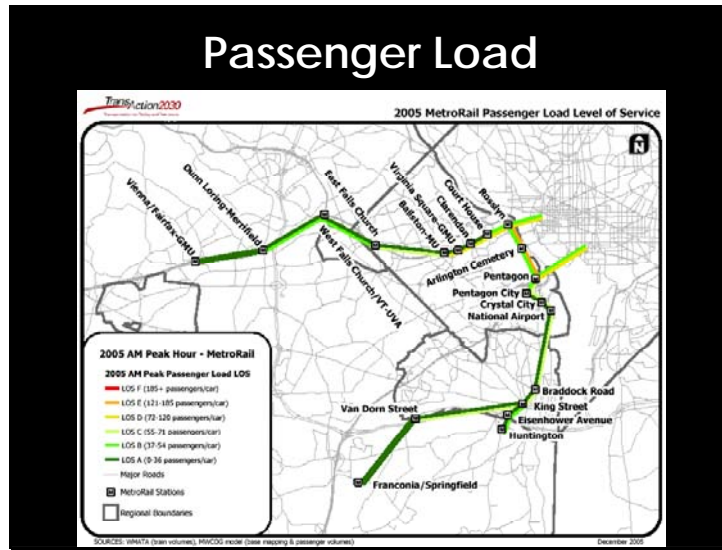
Service coverage—how much of Northern Virginia is served by transit?

Passenger load—how crowded are trains and buses?

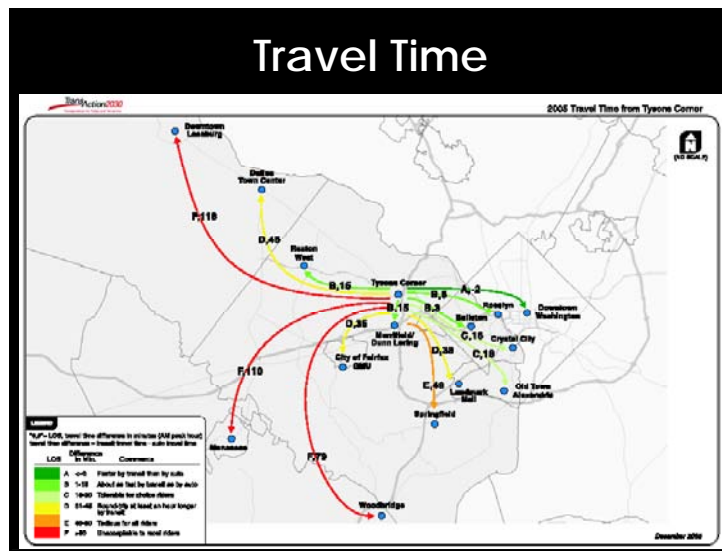
Frequency of service—how often can you hop a train or bus to get to major destinations?

HOURS OF service—how many hours during the day can you complete a trip on public transportation?

Travel time—how does my travel time on transit compare with what it would be by car.



Passenger load LOS shows the level of crowding on trains and buses. As you can see from this map, passenger's on Metrorail's Orange line experience fairly crowded standing conditions during the peak morning rushhour.



Travel time LOS compares the difference in door-to-door travel times between activity centers, by transit and by auto  
 It's faster to travel by transit from Tysons to downtown than it is by car and just as fast to get to Reston, Merrifield, Rosslyn, and Ballston.

## Multimodal LOS Analysis

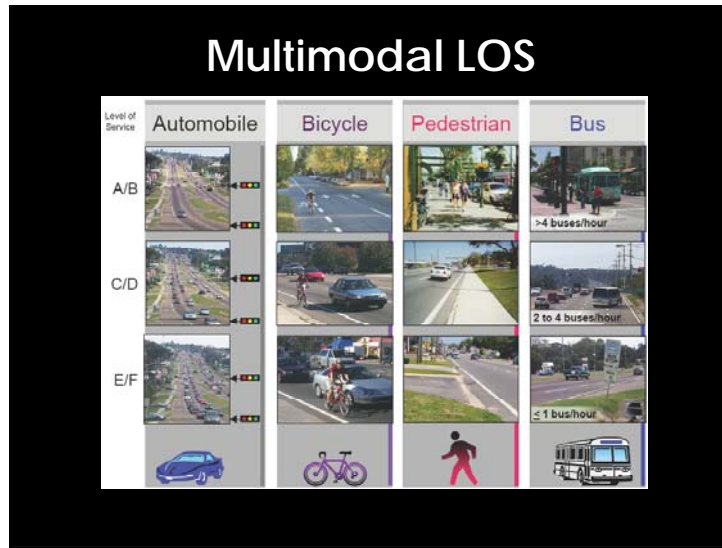
- ▣ Helps us to understand the interactions between modes (auto, transit, bicycle, pedestrian)
- ▣ Auto LOS based on volume/capacity ratios
- ▣ Bus LOS inputs: frequency (hourly buses in one direction) multiplied by adjustment factors for:
  - Hours of service
  - Street-crossing difficulty
  - Pedestrian LOS in segment
  - Barriers (e.g., ditches) between sidewalk and bus stops

Multimodal LOS analysis helps us to understand the interactions between modes and evaluate the effects of proposed investments on each mode. Auto LOS is based on volume/capacity ratio, a measure that VDOT has used for many years. The transit, bicycle and pedestrian LOS measures are based on the users point of view and comfort: for instance-how frequent does the bus come, how much room does a bicyclist or pedestrian have between its travel way and traffic.

## Multimodal LOS Analysis

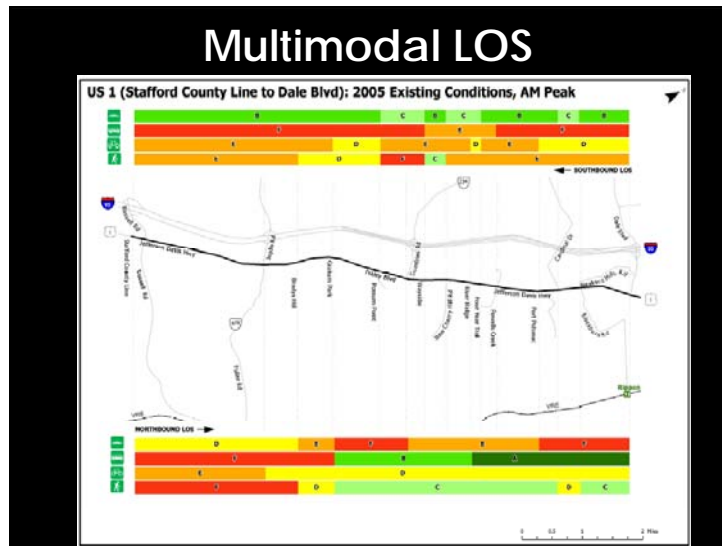
- ▣ Bicycle LOS inputs:
  - Curb lane traffic volumes
  - Bike lane/shoulder presence
  - Posted speed
  - Truck percentage
  - Pavement condition
- ▣ Pedestrian LOS Inputs:
  - Traffic volumes
  - Sidewalk presence & width
  - Separation from traffic
  - Protective barrier presence

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The best way to understand this is through photos. Point out different LOS by mode.

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This slide depicts the interaction between modes along a segment of the US Route 1 Corridor in Prince William County.

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## Public Involvement Opportunities

- ▣ Telephone survey
- ▣ Website
- ▣ Community events
- ▣ Telephone Hotline
- ▣ Public Hearing



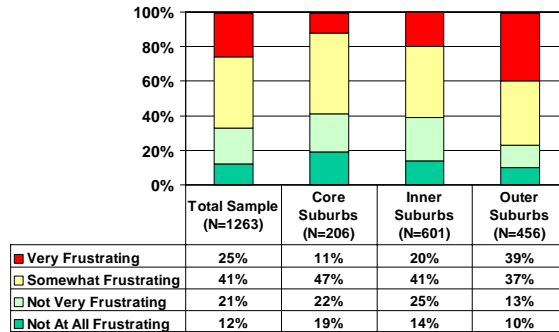
There were numerous opportunities for public comment during this update.

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## Telephone Survey Methodology

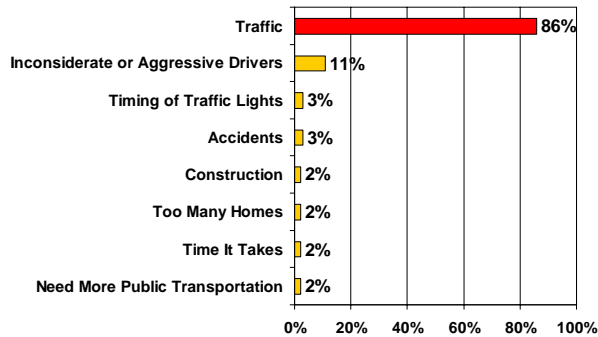
- ▣ Representative sample of 1,263 Northern Virginia adults 18+
  - At least 100 interviews conducted in all jurisdictions
  - Aggregate data weighted to compensate for the effects of over-sampling these jurisdictions
  - Bases shown on charts are unweighted
- ▣ Margin of Error +/- 2.8 percentage points
- ▣ April 26 to May 10, 2005

**Two-thirds of residents are frustrated with the trips they take most often.**



**Almost nine in ten cited traffic as a reason for their frustration with travel.**

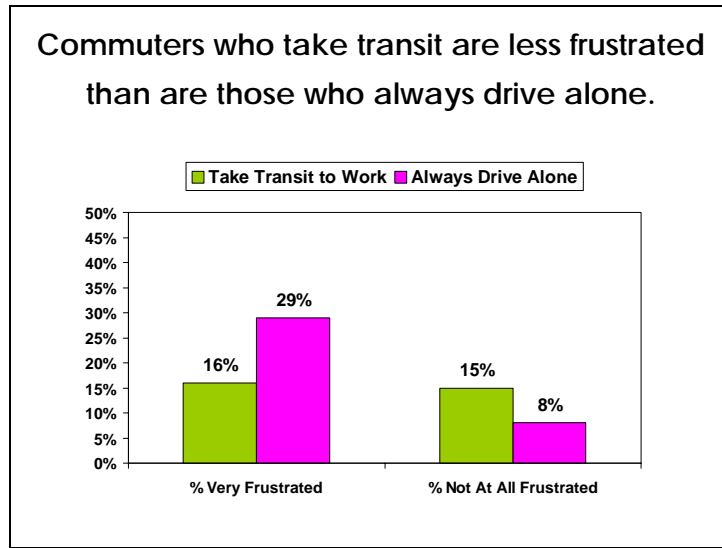
Responses to an Open-Ended Question



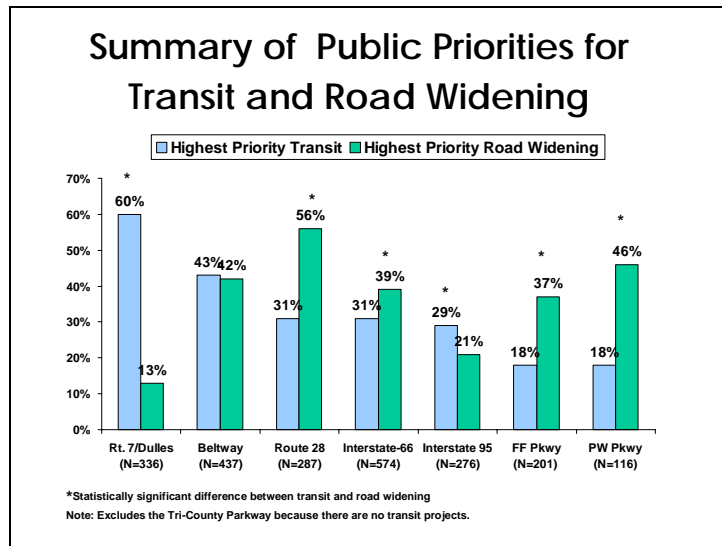
Base=Very or Somewhat Frustrated N=829



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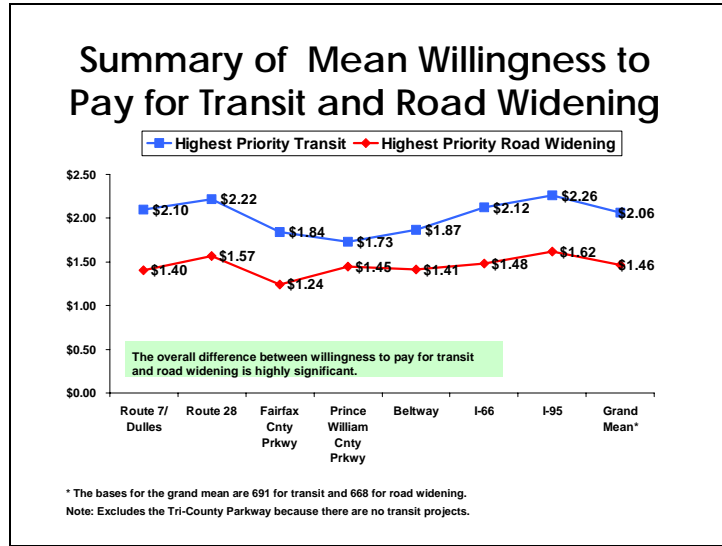


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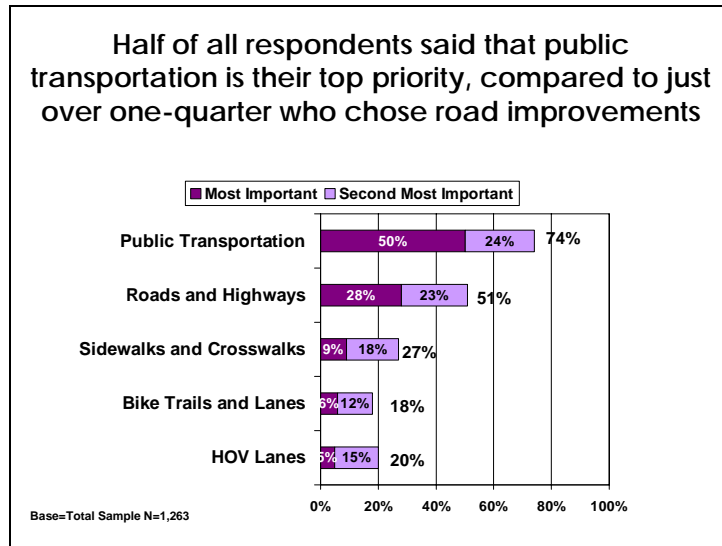
In most radial corridors, such as I-95, transit is favored. In most circumferential corridors, such as county parkways, road widening is favored.

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Interestingly, those who chose transit as their top priority are willing to pay more to get their top priority project built than are those who chose road widening.

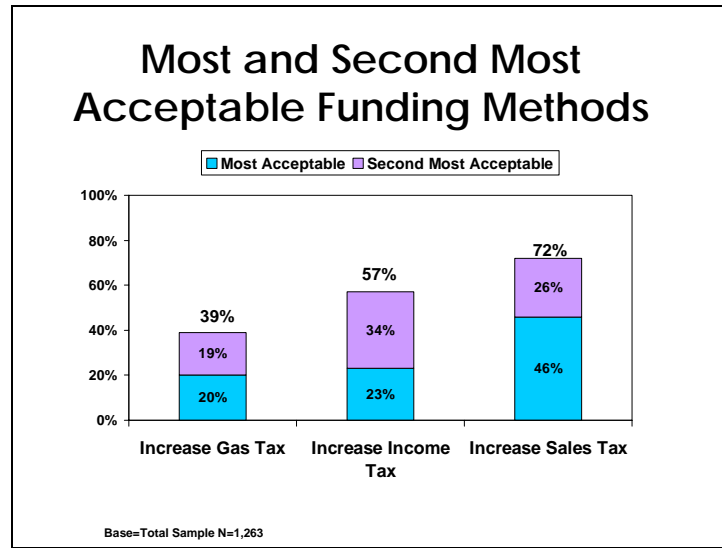
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Those from PWC as likely as Arlington County residents to favor transit improvements.

Q: Which one of these of these transportation improvements is most important to you?  
Second most important to you?

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## Project and Network Performance Evaluation

Qualitative Project-Based Performance Evaluation Criteria	Network-Based Performance Evaluation Criteria
<p>How well does a project perform compared to other projects in the corridor?</p> <ul style="list-style-type: none"><li>· Activity Center Connections</li><li>· Multimodal Choices</li><li>· Person Throughput</li><li>· Intermodal Connections</li><li>· Management &amp; Operations</li><li>· Urgency</li><li>· Need for Rehabilitation</li><li>· Compatibility with Local Plans</li><li>· Land Use Support</li><li>· Improved Bicycle &amp; Pedestrian Travel Options</li><li>· Reduced Roadway Congestion</li><li>· Safety</li><li>· Cost Sharing</li><li>· Freight Movement</li></ul>	<p>How well does the overall system perform?</p> <ul style="list-style-type: none"><li>· Provide an Integrated Multimodal Transportation System</li><li>· Improve Mobility</li><li>· Improve Accessibility</li><li>· Improve Transportation Land Use Linkage</li><li>· Protect the Environment</li></ul>

In Fall 2005, the NVTa approved two sets of evaluation criteria. The first, our project-based evaluation criteria were used to answer the question, “how well does a project perform compared to other projects within a corridor” and to rank the projects by mode and by corridor.

The second set of criteria are used to test how well the TransAction 2030 Plan network (assuming all TransAction 2030 Plan projects are built) performs compared to the 2005 network (our existing road and transit network) and the region’s Constrained Long Range Plan (CLRP).



## Conclusions

- ▣ We now have draft list of priorities
- ▣ Telephone survey and other public input indicates desire for enhanced multi-modal transportation system
- ▣ Transit LOS shows areas where additional transit service warranted
- ▣ Highway LOS illustrates that TransAction 2030 level of funding is needed.
- ▣ Funding shortfall of over \$15 billion

## The NVTAs Needs to Hear From You!

- ▣ Are the factors used to rank the TransAction 2030 projects reasonable?
- ▣ Any factors missing?
- ▣ Can you support the priorities outlined?
- ▣ Please stay for the formal public comment period at 7:30 PM or fill out a comment form on your way out