

## **ITEM 11 - Information**

January 18, 2012

### Briefing on Proposed Performance Measures for the TPB Regional Transportation Priorities Plan (RTPP)

**Staff Recommendation:** Receive briefing on an initial set of regional goals, performance measures, challenges and strategies, and on proposed public outreach methods to obtain public feedback and comment.

**Issues:** None

**Background:** The TPB Regional Transportation Priorities Plan (RTPP) will use performance measures to identify regional challenges and potential near and long term strategies to address them.

# **Developing a Regional Transportation Priorities Plan (RTPP) for the National Capital Region**

Draft Interim Report 1:

*Initial Goals, Performance Measures, Challenges,  
and Strategies, and Proposed Public Outreach  
Activities through June 30, 2012*

January 11, 2012

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## **A. Background on the TPB Regional Transportation Priorities Plan**

The concept of a priorities plan has its roots in more than a decade of TPB planning, including the establishment of regional goals through the [TPB Vision](#) and [Region Forward](#), analysis of transportation and land-use scenarios using the [Financially Constrained Long-Range Transportation Plan \(CLRP\)](#) adopted by the TPB on November 17, 2010 as a baseline, and various studies of the region's transportation funding challenges. In 2010, the TPB extensively discussed how these activities might be better integrated. On May 26, 2010 the TPB hosted an event called the Conversation on Setting Regional Transportation Priorities, which addressed the possibilities for more explicitly establishing regional priorities. The impetus for that event was a request by the TPB's Citizens Advisory Committee (CAC) for the TPB to develop a "Regional Priorities Plan" that would serve as a "financially unconstrained" regional vision for transportation operations and investment. The Conversation generated broad interest among TPB stakeholders in developing a priorities plan. As a result, on July 21, 2010, the TPB voted to form a task force to determine the scope and process for developing such a plan.

The TPB Regional Priorities Plan Scoping Task Force included approximately 20 stakeholders in the TPB process – members of the TPB, CAC, Access for All Committee, and the Technical Committee. Between October 2010 and April 2011 the TPB Priorities Plan Scoping Task Force met four times and discussed planning processes and activities in the region, reasons for enhancing the current process, and options for change. At its first meeting, the task force also learned about the priorities planning activities of other Metropolitan Planning Organizations (MPOs) around the country. The task force reached general consensus that the priorities plan should describe goals and performance measures, assess challenges, and develop priorities - both funded and unfunded - for addressing those challenges. On July 20, 2011, the TPB approved a [work scope](#) for developing such a plan. The sequence of key tasks for this work scope is shown in Figure 1, and the schedule of activities is shown in Figure 2. The scope specified that public participation will be sought at every stage of the two-year process, including the development of performance measures, strategies, and benefit-cost analysis.

**Figure 1:  
Sequence of Key Tasks for Developing a  
Regional Transportation Priorities Plan**

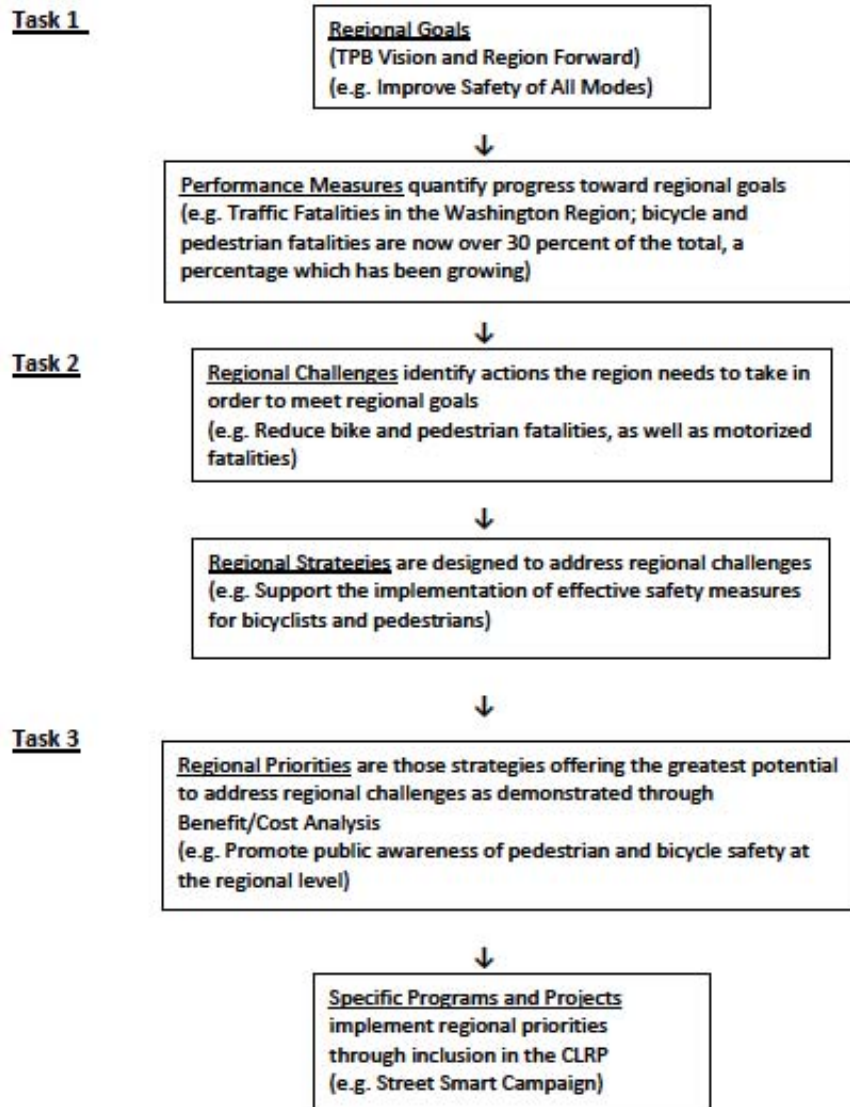
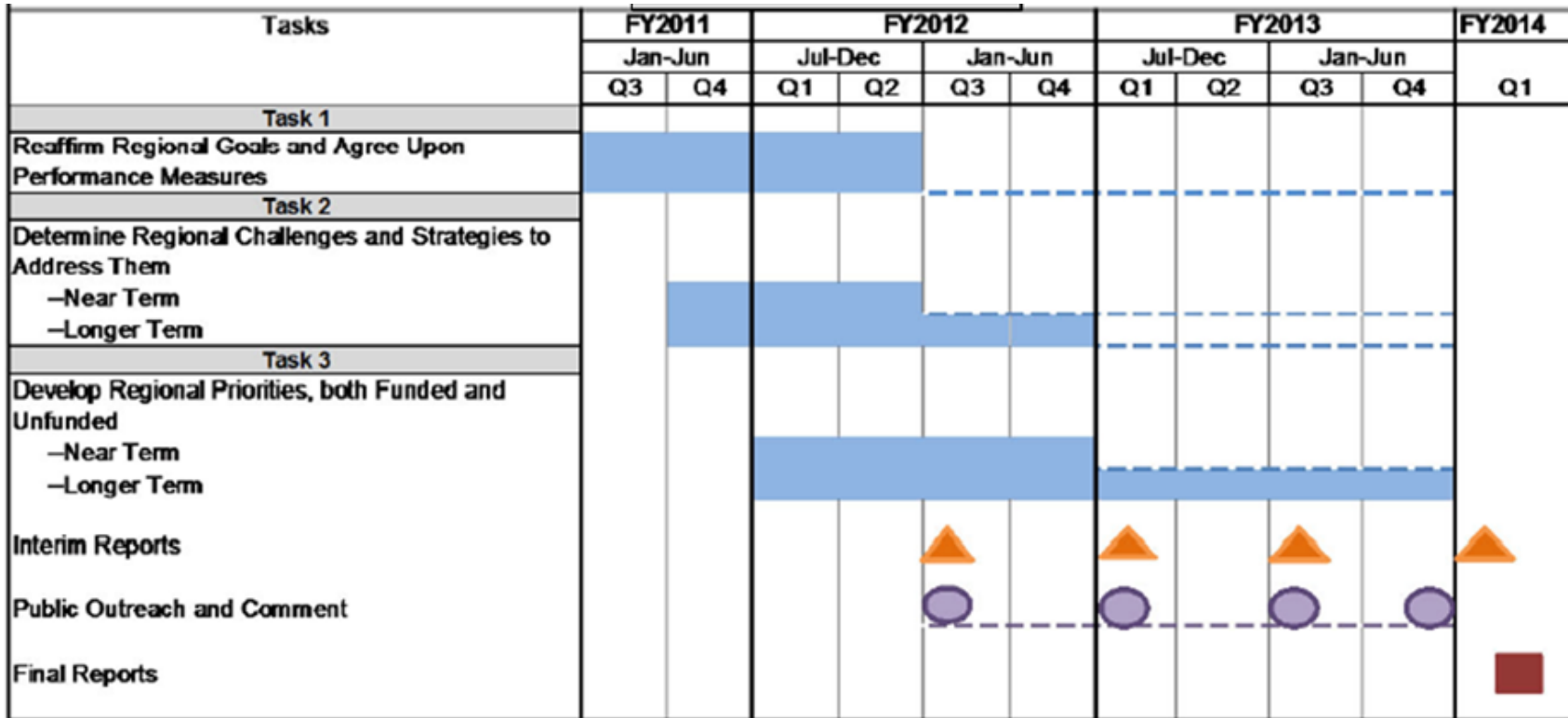


Figure 2: Schedule of Activities for Developing a Regional Transportation Priorities Plan



## **B. Federal Government Focus on Performance Measurement**

At the federal level, the Transportation Equity Act-21 (TEA-21) bill of 1999 focused greater attention on performance measurement. Additional emphasis was placed on performance measurement in the Safe Accountable Flexible Efficient Transportation Equity Act— A Legacy for Users (SAFETEA-LU) bill of 2005. A greater reliance on performance measurement is anticipated with the next federal transportation bill.

### 1) Moving Ahead for Progress in the 21<sup>st</sup> Century” (MAP-21)

On Friday, November 4, 2011, a bipartisan group of four Senators released a proposed two-year surface transportation funding plan named “Moving Ahead for Progress in the 21<sup>st</sup> Century” (MAP-21). The Senate Environment and Public Works Committee held a voting or “markup” session on November 9, 2011 and unanimously approved MAP-21. An increased focus on performance measurement is evident in this bill:

- *National Goals-Performance management will... provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing accountability and transparency [and] improving project decision-making through performance-based planning and programming.*
- *The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals.*
- *When preparing the metropolitan plan, the metropolitan planning organization may develop multiple scenarios for consideration.*

### 2) Recent Federal Performance Measurement Conferences

The federal government has sponsored several recent conferences and workshops on performance measurement. These conferences have gathered transportation stakeholders from the federal and state governments, metropolitan planning organizations, transit agencies, and academia to discuss how to identify and implement performance measurement:

- October 22, 2009, *Executive Roundtable on Developing a Performance-Based Planning and Programming Framework*, Washington D.C.
- September 13-15, 2010, *National Forum on Performance-Based Planning and Programming*, Dallas
- September 20, 2011, *National Workshop on Performance-Based Planning and Programming*, Chicago
- December 5-7, 2011, *Data Needs for Decision-Making in States and MPOs*, Irvine

Federal agencies have already conducted several performance measurement studies targeted towards specific program areas. Examples include environmentally sustainable transportation (EPA 231-K-10-004), transit (TCRP Report-88), congestion management (NCHRP-618), and freight movement (NCHRP-10).

### 3) National Cooperative Research Program (NCHRP) Project 08-36/Task 104

The National Capital Region has been selected by the ongoing [NCHRP Project 08-36/Task 104](#) as one of three pilot sites to study a Performance-Based Planning and Programming (PBPP) process. The main objective of this research is to “move the conversation of national transportation performance measures and a performance-based planning and programming process from that of a conceptual framework to realistic examples relating national-level measures to the state and regional level.”

Two facilitated workshops will be held for each site, and the project will conclude with a final report that synthesizes the results of the pilot sites. The National Capital Region pilot will examine the selection and use of measures to inform decisions regarding bus priority corridors in Maryland, an exercise that will afford the region an opportunity to actively participate in the national discussion on performance measurement. The first workshop for the National Capital Region was held at COG on December 13, 2011.

## **C. International Scan**

In July and August 2009, the U.S. Department of Transportation (U.S. DOT)-Federal Highway Administration in cooperation with the American Association of State Highway and Transportation Officials (AASHTO) and the National Cooperative Highway Research Program organized a two-week “International Scan” to explore how countries abroad link transportation performance and accountability. This came at a time when the U.S. Congress was considering more accountability for state and local transportation funds.

The International Scan group included American transportation representatives from the U.S. DOT, state DOTs, an MPO, AASHTO, and consultants. The group visited transportation agencies in Sweden, the United Kingdom, Australia, and New Zealand to learn how these countries link transportation performance and accountability. The four countries were selected based upon their extensive experience with the use of transportation performance measures to strengthen accountability and improve decision-making in the transportation sector. The team examined how these transportation agencies use goal setting and performance measures to manage, explain, deliver, and adjust their transportation budgets and internal activities.

The International Scan experience provided guidance in several key areas. A summary of their experience and key lessons learned can be found in the [International Technology Scanning Program: Linking Transportation Performance and Accountability](#) report that



was published in April 2010. Key recommendations from the transportation agencies abroad were:

1. Limit the number of performance measures (Since 1998, the British central government has reduced the number of government-imposed performance measures across all government departments from 600 to 30).
2. Ensure that federal, state, and local officials engage in frequent dialogue and collaborative goal-setting.
3. Perpetuate long-term improvement by understanding that the real value of performance management is the development of an improved decision-making and investment process, not the achievement of many arbitrary, short-term targets.

#### **D. TPB Goal Areas and Performance Measures (Task 1)**

The [\*TPB Vision\*](#) was adopted in 1998 following a three-year process that included public outreach and consensus building. The *Vision* comprises a policy statement, eight overarching policy goals and objectives, and strategies for reaching those goals. The [\*Region Forward\*](#) document was approved in 2010 following a two-year development process. It includes goals, targets, and a compact agreement to guide future planning and help measure progress in the areas of housing, transportation, the environment, health and the economy. By the end of 2010, all of COG's member jurisdictions had signed the regional compact established in *Region Forward*. *Region Forward* includes transportation components, largely focused on promoting alternative modes, which are a subset of goals from the *TPB Vision*.

There are a multitude of different performance measures that can be developed and used to evaluate progress toward meeting regional transportation goals. In the course of developing materials for consideration by the Regional Priorities Plan Scoping Task Force, TPB staff produced a composite list of six regional goals drawn from the *TPB Vision* and *Region Forward*, and provided a number of examples of transportation performance measures that might be used to assess the performance of the regional transportation system against these regional goals. Many of the example performance measures that were provided had been used by the TPB over the years, including, in particular, for assessing the performance of the [\*CLRP\*](#) for the region. Others were developed specifically to support the TPB's priorities planning effort.

Selecting the right performance measures may be one of the most challenging aspects of developing a regional priorities plan. It is important to limit the number of measures that are used in the transportation priorities planning process by selecting those that are the most meaningful to the interested public and for which data are currently available. TPB staff developed an initial set of 47 potential performance measures and assessed them against these criteria, as shown in Figure 3. Those 23 performance measures that were considered to best meet the two criteria were selected for use in identifying key regional challenges.

**Figure 3: Assessment of Potential Performance Measures**

	Regional Goals	Potential Performance Measures	Data Currently Available	Meaningful to Interested Public
1	<b>Provide a Comprehensive Range of Transportation Options</b>	<ul style="list-style-type: none"> <li>• Daily VMT per capita</li> <li>• Number of jobs accessible within 45 minutes</li> <li>• Mode share for commute and daily trips</li> <li>• Morning rush hour congestion</li> <li>• % region's bus stops that are fully accessible</li> <li>• % change in bike-share usage</li> <li>• % change in car-share usage</li> <li>• % change in number of people registered for 'Guaranteed Ride Home'</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>◐</li> </ul>
2	<b>Promote Transportation Connections, Walkability, and Mixed Use Development in Activity Centers</b>	<ul style="list-style-type: none"> <li>• Street block density in Activity Centers</li> <li>• Regional Activity Centers with rail transit</li> <li>• Jobs-household ratio in Activity Centers</li> <li>• % of new commercial construction and new households in Activity Centers</li> <li>• Housing and transportation costs as % of income in Activity Centers</li> <li>• % of new affordable households in Activity Centers</li> <li>• Average number of other Activity Centers accessible within 45 minutes of a given Activity Center by Transit and Highway</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>◐</li> </ul>
3	<b>Ensure Adequate Maintenance, Preservation, and Safety of the Existing System</b>	<ul style="list-style-type: none"> <li>• % road pavement in 'Fair or Better Condition'</li> <li>• % bridges non-deficient</li> <li>• % Metro escalators available</li> <li>• Number of transportation injuries and fatalities (all modes)</li> <li>• Percent of high crash locations with a project identified</li> <li>• Number of TPB Member Agencies that have completed transportation vulnerability assessments and / or climate adaptation plans</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> </ul>
4	<b>Maximize Effectiveness of the Transportation System</b>	<ul style="list-style-type: none"> <li>• Hours of delay per person (all vehicles)</li> <li>• Extra time needed for on-time arrival by road compared to free-flow time</li> <li>• Transit on-time reliability</li> <li>• Incident clearance time</li> <li>• Transit ridership</li> <li>• Traffic incidents managed</li> <li>• Annual congestion cost \$</li> <li>• Volume/Capacity Ratio</li> <li>• HOV lane travel time reliability</li> <li>• 95th percentile reliability travel time</li> <li>• Customer Satisfaction Survey results (all modes)</li> <li>• Annual hours of Capital Bikeshare trips</li> <li>• HOV travel time savings</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>●</li> <li>●</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> <li>◐</li> </ul>
5	<b>Enhance Environmental Quality, Protect Human Health, and Improve Energy Efficiency</b>	<ul style="list-style-type: none"> <li>• Ozone precursors and particulates</li> <li>• GHG emissions from mobile sources</li> <li>• MPG fleet average</li> <li>• Stormwater runoff</li> <li>• Energy consumption per person-mile</li> <li>• Physical activity (exercise) per trip</li> <li>• Number of designated Green Spaces</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>◐</li> <li>○</li> <li>◐</li> <li>○</li> <li>◐</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>●</li> <li>◐</li> <li>●</li> </ul>
6	<b>Support International and Inter-Regional Travel and Commerce</b>	<ul style="list-style-type: none"> <li>• Number of passengers arriving at region's airports</li> <li>• Value of freight movement for all modes (rail, truck, air, maritime)</li> <li>• Number of international destinations served non-stop by regional airports (passenger flights)</li> <li>• Number of passengers arriving by inter-city rail</li> <li>• Tonnage of freight movement for all modes (rail, truck, air, maritime)</li> <li>• Number of international destinations served non-stop by regional airports (air cargo flights)</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>●</li> <li>◐</li> </ul>	<ul style="list-style-type: none"> <li>●</li> <li>●</li> <li>●</li> <li>●</li> <li>◐</li> <li>●</li> </ul>

Yes   
 Somewhat   
 No

## E. Regional Challenges and Strategies to Address Them (Task 2)

Data and forecasts for the 23 selected performance measures, based primarily on the 2010 CLRP and shown in Appendix A, were used to identify a regional challenge for each measure:

**Figure 4 – Regional Challenges**

<b>Goal 1: Provide a Comprehensive Range of Transportation Options</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
1.1	Daily VMT per capita	Maintain progress toward reducing VMT per capita
1.2	Number of jobs accessible within 45 minutes	Continue to increase the number of jobs accessible within 45 minutes by auto and transit
1.3	Mode share for commute and daily trips	Increase use of alternatives to single occupant vehicle travel
1.4	Morning rush hour congestion	Reduce projected morning rush hour congestion on roadways and Metrorail
1.5	% region's bus stops that are fully accessible	Increase the percentage of bus stops that are fully accessible
<b>Goal 2: Promote Transportation Connections, Walkability, and Mixed-Use Development in Activity Centers</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
2.1	Street block density in Activity Centers	Increase street block density in key Activity Centers
2.2	Regional Activity Centers with rail transit	Increase the number of Activity Centers with rail transit
2.3	Jobs-household ratio in Activity Centers	Improve the jobs/housing balance in Activity Centers
2.4	% of new commercial construction and new households in Activity Centers	Increase the percentage of commercial construction and new households in Activity Centers
<b>Goals 3: Ensure Adequate Maintenance, Preservation, and Safety of the Existing System</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
3.1	% road pavement in 'Fair or Better Condition'	Increase the percentage of road pavement that is in 'fair or better condition'
3.2	% bridges non-deficient	Increase the percentage of bridges that are 'non-deficient'
3.2	% Metro escalators available	Increase the percentage of Metro escalators available
3.4	Number of transportation injuries and fatalities (all modes)	Maintain progress on reducing the number of motorized traffic and transit injuries and fatalities; reduce bicycle and pedestrian injuries and fatalities
<b>Goal 4: Maximize Effectiveness of the Transportation System</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
4.1	Hours of delay per person (all vehicles)	Reduce hours of delay per person
4.2	Extra time needed for on-time arrival by road compared to free-flow time	Reduce the extra time needed for on-time arrival by road compared to free-flow time
4.3	Transit on-time reliability	Improve transit on-time reliability
4.4	Incident clearance time	Reduce the duration of incident clearing times
4.5	Transit ridership	Increase transit ridership
<b>Goal 5: Enhance Environmental Quality, Protect Health, and Improve Energy Efficiency</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
5.1	Ozone precursors and particulates	Ensure all ozone precursor, nitrogen oxide, and particulate matter emissions remain below adopted budgets
5.2	GHG emissions from mobile sources	Seek further reductions in GHG emissions from mobile sources
<b>Goal 6: Support International and Inter-Regional Travel and Commerce</b>		
	<b>Performance Measure</b>	<b>Regional Challenge</b>
6.1	Number of passengers arriving at region's airports	Ensure continued growth in the number of passengers arriving at the region's airports
6.2	Value of freight movement for all modes (rail, truck, air, maritime)	Ensure continued growth in the value of freight movement for all modes (rail, truck, air, maritime).
6.3	Number of international destinations served non-stop by regional airports (passenger flights)	Increase the number of international destinations served non-stop by regional airports (passenger flights)

Figure 5 provides potential strategies for addressing the regional challenges, illustrating that many strategies address more than one challenge and, as a result, would generate multiple benefits which should be added together when conducting a benefit-cost analysis.

**Figure 5 – Potential Strategies**

Strategy -----> Performance Measure	Goal 1 - Provide a Comprehensive Range of Transportation Options					Goal 2 - Promote Transportation Connections, Walkability, and Mixed Use Development in Activity Centers				Goal 3 - Ensure Adequate Maintenance, Preservation, and Safety of the Existing System				Goal 4 - Maximize Effectiveness of the Transportation System					Goal 5 - Enhance Environmental Quality, Protect Human Health, and Improve Energy Efficiency		Goal 6 - Support International and Inter-Regional Travel and Commerce		
	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	4.4	4.5	5.1	5.2	6.1	6.2	6.3
S.1. Seek continuation of funding to ensure the reliability and safety of the region's transit network, particularly a continuation of or replacement for PRIIA funding for Metrorail beyond 2020	X	X	X	X								X	X			X			X	X			
S.2. Support cost-effective programs for encouraging use of alternative modes to single-occupancy automobiles, including Commuter Connections, bike-sharing, and high-priority projects from the TPB's bicycle and pedestrian plan	X		X	X									X						X	X			
S.3. Identify and implement cost-effective bus priority treatments	X	X	X													X		X	X	X			
S.4. Assess status of bus stop accessibility throughout the region and implement cost-effective improvements					X																		
S.5. Seek opportunities to implement recommendations produced by the Transportation/Land-Use Connections (TLC) Program						X	X																
S.6. Use transportation resources to support mixed use development in the region's activity centers, particularly around underutilized rail stations		X					X	X	X														
S.7. Devote sufficient funding to ensuring 'state of good repair' for roadways and bridges										X	X												
S.8. Support the implementation of effective safety measures for bicyclists and pedestrians, as well as other modes													X										
S.9. Identify and implement cost-effective management techniques and capacity improvements to address travel time and reliability problems resulting from congestion on roadway and transit systems				X										X	X			X					
S.10. Provide adequate funding and staff support for regional incident management programs, including MATOC																	X						
S.11. Support programs such as Eco-driving, which provide cost-effective reductions in gasoline and diesel fuel consumption and GHG emissions																				X			
S.12. Provide funding for ensuring adequate roadway and transit access to the region's airports																					X	X	X

## **F. Public Outreach Activities and Schedule (through June 2012)**

The work scope approved by the TPB in July 2011 specified that public involvement would be sought at each and every stage of the two-year process. In accordance with the work scope, the proposed public outreach process described below is designed to “use the best public involvement techniques available,” “reach out to a variety of constituencies,” and “ensure public involvement is woven into the entire process for developing the Priorities Plan.”

### **December**     *Committee and Board Review*

- Present to the Technical Committee, Citizens Advisory Committee (CAC), any other interested committee, and the Board:
  - Potential performance measures and preliminary staff evaluation.
  - Initial set of selected performance measures, challenges, and strategies.

#### Deliverables:

- **Draft Interim Report 1:** reaffirm regional goals; outline initial set of performance measures, challenges, and strategies for addressing regional challenges; outline public outreach process for remainder of FY2012.

### **January**     *Listening Sessions with Regional Stakeholders and Citizens*

- Solicit feedback on Draft Interim Report 1 using a web-based comment form.
- Hold listening sessions with:
  - *Regional stakeholders*, to include regional transportation advocates and/or representatives of regional business interests; and,
  - *Citizens*, to include the CAC, the Access for All Committee, and the Air and Climate Public Advisory Committee.
- Listening session participants will be asked to:
  - Provide feedback on initial set of performance measures, challenges, and strategies;
  - Provide guidance and input on framing identified challenges for the public during subsequent outreach phases.

#### Deliverables:

- In February, **Final Interim Report 1**, to incorporate the comments and feedback received from committees, the Board, listening sessions, and web-based comment form.

## **April**

### ***Focus Groups***

- Hold series of focus groups with members of the general public and/or community organizations.
- Present initial set of performance measures and challenges as documented in Final Interim Report 1; gauge the understandability and resonance of measures and challenges.
- Present initial set of strategies; solicit suggested additions and revisions.
- Test educational and feedback techniques for use in the public outreach component of the strategy prioritization process in FY2013.

#### *Deliverables:*

- Documentation of comments and feedback from focus groups.

## **June**

### ***Committee and Board Review***

- Present revised set of performance measures, challenges, and strategies, incorporating focus group comments and feedback, to the Technical Committee, CAC, any other interested committee, and the Board.

#### *Deliverables:*

- **Draft Interim Report 2:** outline revised performance measures, challenges, and strategies based on public feedback received since January; outline public outreach process for FY2013, which will be designed to invite input into the strategy prioritization process using techniques such as deliberative forums.
- In July, **Final Interim Report 2**, to incorporate the comments and feedback received from committees, the Board, and the web-based comment form.

## **G. Next Steps**

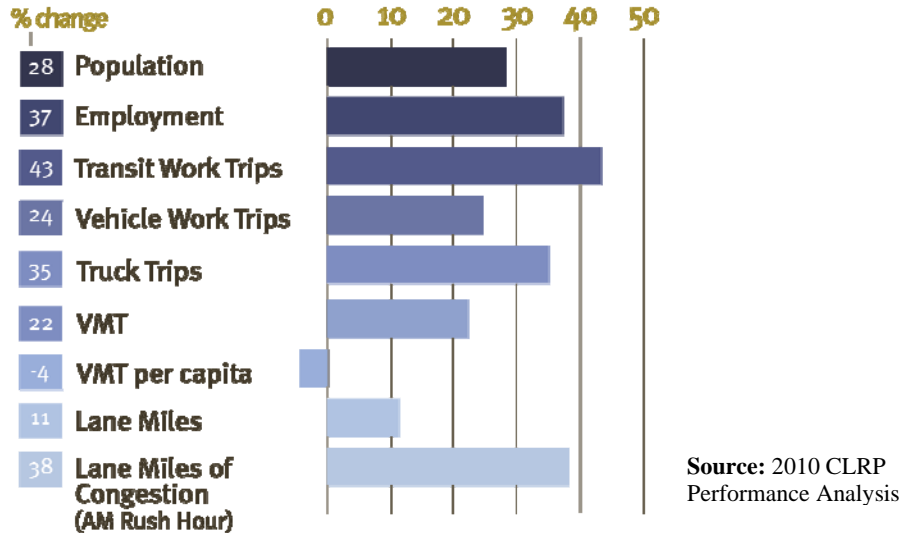
In accordance with the attached schedule, in December 2011 the TPB Technical Committee, the CAC, and the TPB were briefed on the Draft Interim Report 1 – A reaffirmation of regional goals; an initial set of performance measures, challenges, and strategies for addressing regional challenges; and a proposed public outreach schedule through June 2012. In February 2012, the TPB and the CAC will be briefed on feedback received from the listening sessions and the web-based comment form, which will be incorporated into Final Interim Report 1.

## Appendix A: Performance Measure Data and Regional Challenges

### *Goal 1: Provide a Comprehensive Range of Transportation Options*

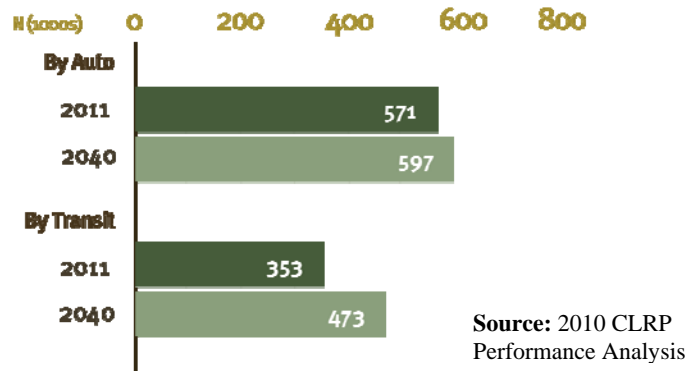
#### Measure 1.1: Daily VMT per Capita

Forecasted Change in Travel Patterns and Traffic Conditions, 2011 – 2040



**Challenge: Maintain progress toward reducing VMT per capita**

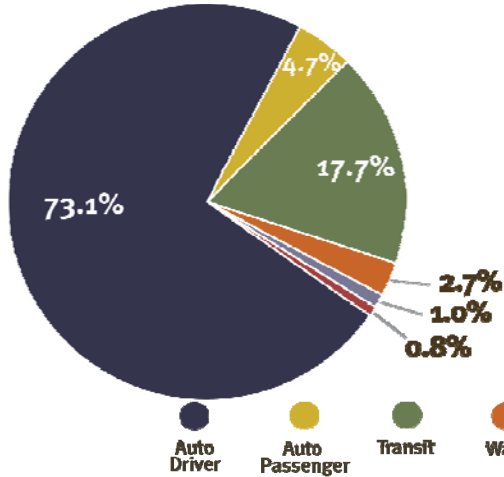
#### Measure 1.2: Number of Jobs Accessible within 45 Minutes



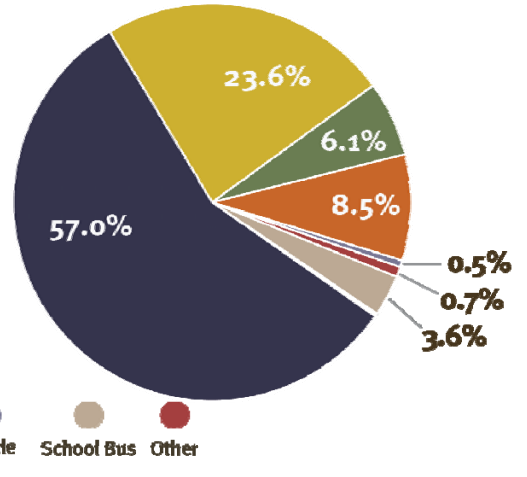
**Challenge: Increase the number of jobs accessible within 45 minutes by auto and transit**

**Measure 1.3: Mode Share for Commute and Daily Trips**

**Commute Mode Share 2007/08**



**Daily Mode Share 2007/08**



Source: 2007/2008 TPB Household Travel Survey

**Challenge: Increase use of alternatives to single occupant vehicle travel**

**Measure 1.4: Morning Rush Hour Congestion**

**Peak Hour Metrorail Passenger Congestion, 2011 – 2040**

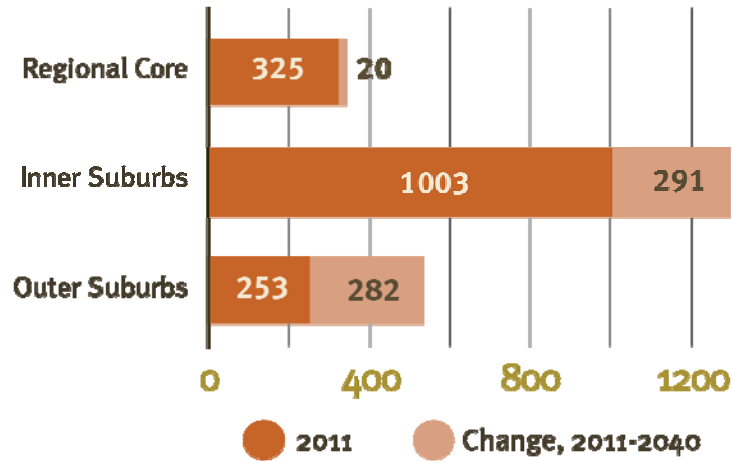
Line	2011	2040 with 50% 8-car	2040 with 100% 8-car
Red	Satisfactory	Congested	Satisfactory
Blue	Satisfactory	Satisfactory	Satisfactory
Orange/Dulles	Congested	Highly Congested	Congested
Yellow	Satisfactory	Highly Congested	Congested
Green	Satisfactory	Highly Congested	Congested

- Satisfactory (<100 people per car)
- Congested (100-120 people per car)
- Highly Congested (>120 people per car)

Source: 2010 CLRP Performance Analysis



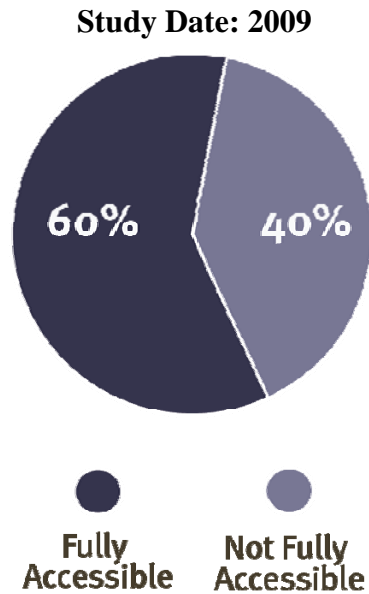
**Forecasted Change in Lane Miles of Congestion, 2011 -2040**



Source: 2010 CLRP Performance Analysis

**Challenge: Reduce projected morning rush hour congestion on roadways and Metrorail**

**Measure 1.5: Percentage of Region’s Bus Stops that are Fully Accessible**



Source: WMATA

**Challenge: Increase the percentage of bus stops that are fully accessible**

**Goal 2: Promote Transportation Connections, Walkability, and Mixed-Use Development in Activity Centers**

**Measure 2.1: Street Block Density (blocks per square mile) in Activity Centers**

Activity Center Type	Street Block Density
DC Core	131
Mixed-Use Centers	104
Employment Centers	41
Suburban Employment Centers	25
Emerging Employment Centers	16

Source: 2010 CLRP Performance Analysis

**Challenge: Increase street block density in key Activity Centers**

**Measure 2.2: Regional Activity Centers with Rail Transit**

Rail Transit in Activity Centers		
	2011	2040
Regional Activity Centers	59	59
Metrarail Stations	86	98
Commuter Rail Stations	52	53
Regional Activity Centers with Rail Transit	31 with rail 25 Metrorail 15 Commuter Rail	37 with rail 31 Metrorail 15 Commuter Rail
Regional Activity Centers without Rail Transit	28	22
Rail Stations Not Located in Regional Activity Centers	73 37 Metrorail 36 Commuter Rail	76 39 Metrorail 37 Commuter Rail

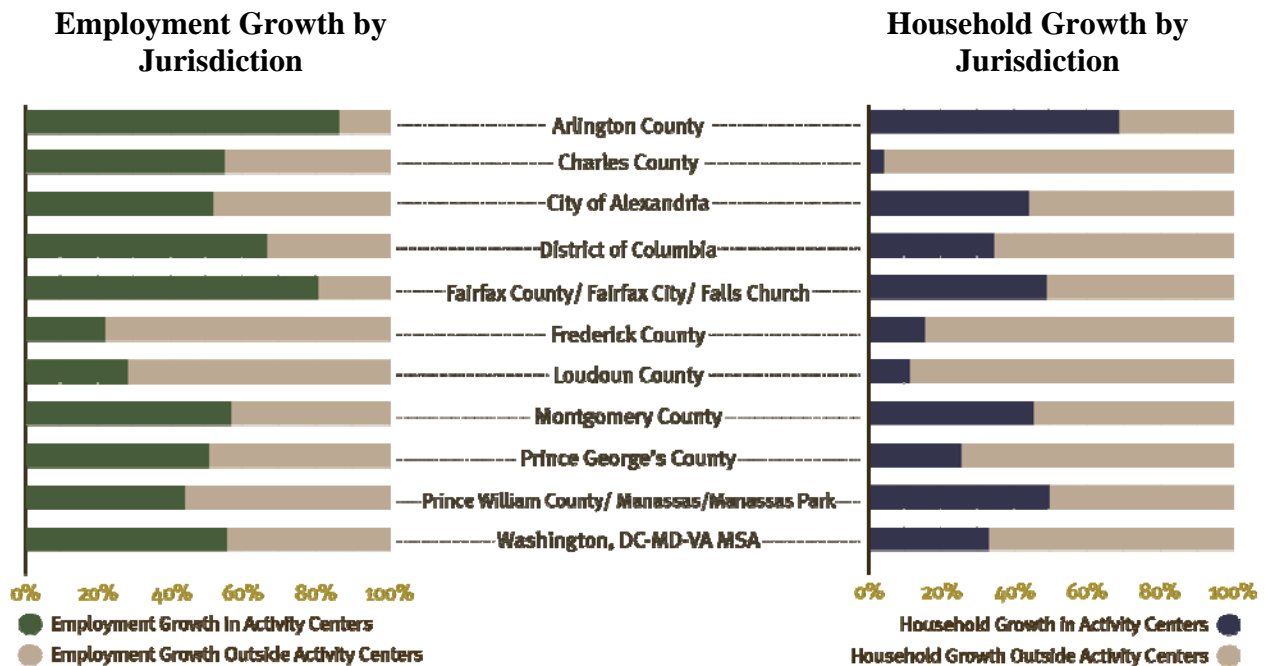
Source: 2010 CLRP Performance Analysis

**Challenge: Increase the number of Activity Centers with rail transit**

## Measure 2.3: Jobs-Household Ratio in Activity Centers

Activity Center	Jobs 2011	Households 2011	2011 Jobs to HH Ratio	Jobs 2040	Households 2040	2040 Jobs to HH Ratio	2011-2040 Ratio Change
DC Core	596,798	61,284	9.7	718,492	84,990	8.5	-1.3
Mixed-Use Centers	342,578	85,126	4.0	467,970	134,022	3.5	-0.5
Employment Centers	295,681	22,400	13.2	401,778	51,520	7.8	-5.4
Suburban Employment Centers	482,617	86,057	5.6	737,925	154,578	4.8	-0.8
Emerging Employment Centers	85,337	28,375	3.0	152,610	67,491	2.3	-0.7
All Activity Centers	1,803,010	283,241	6.4	2,478,775	492,601	5.0	-1.3
Washington, DC-MD-VA MSA	3,259,389	1,994,985	1.6	4,481,394	2,628,623	1.7	0.1

Source: 2010 CLRP Performance Analysis

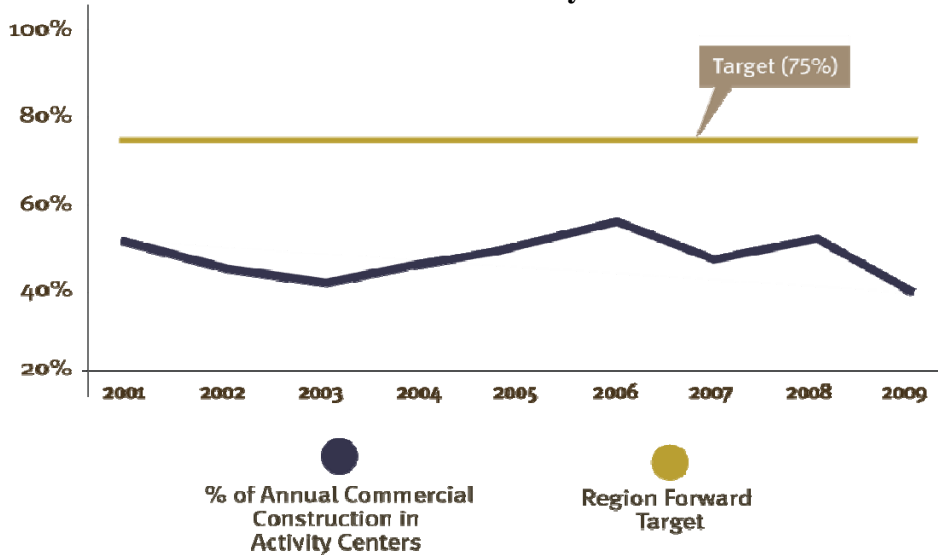


Source: 2010 CLRP Performance Analysis

## **Challenge: Improve the jobs-housing balance in Activity Centers**

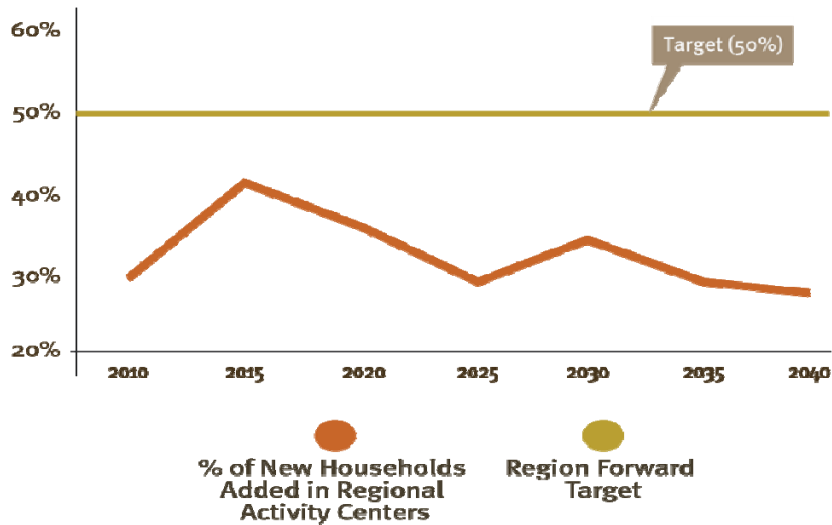
**Measure 2.4: Percentage of New Commercial Construction and New Households in Activity Centers**

**Percentage of New Commercial Construction in Activity Centers**



Source: MWCOG Commercial Construction Indicators Report

**Percentage of New Households In Regional Activity Centers**

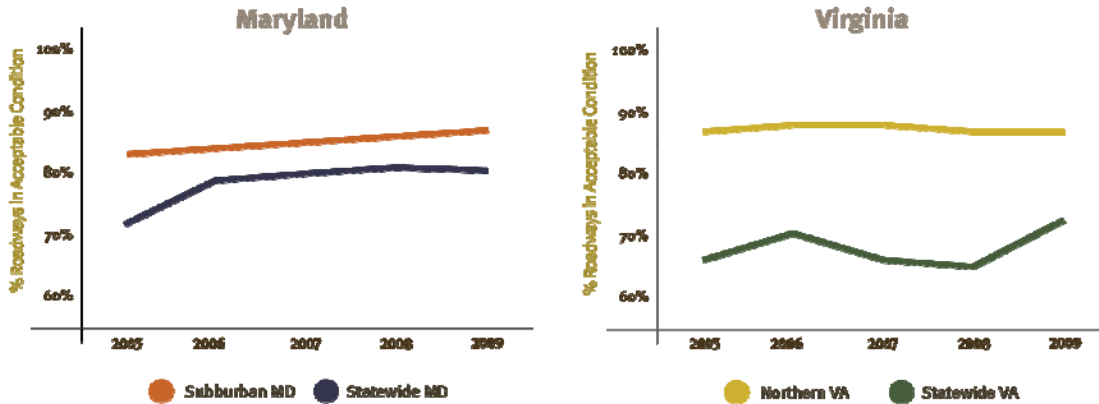


Source: MWCOG Round 8.0 Cooperative Forecast

**Challenge: Increase the percentage of commercial construction and new households in Activity Centers**

## **Goal 3: Ensure Adequate Maintenance, Preservation, and Safety of the Existing System**

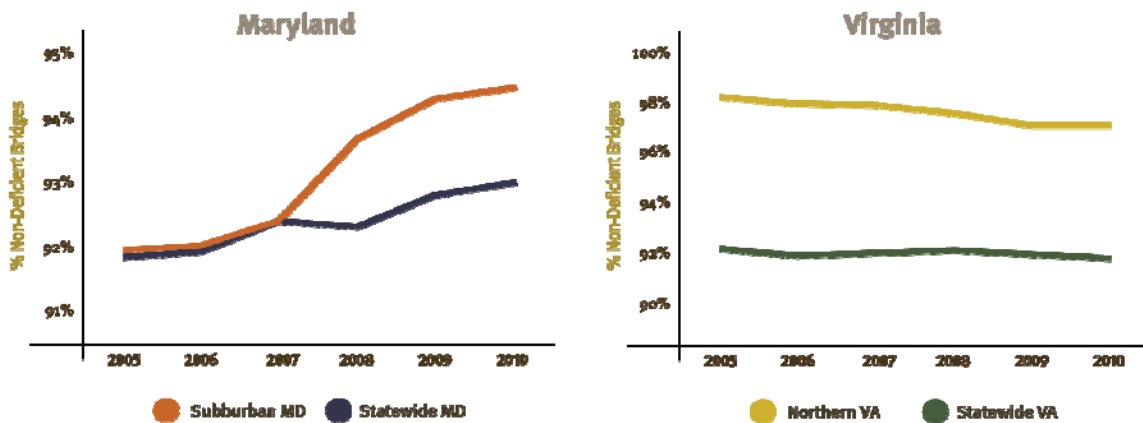
### **Measure 3.1: Percentage of Road Pavement in 'Fair or Better Condition'**



Source: MD – MDOT/SHA, VA - VDOT

**Challenge: Increase the percentage of road pavement that is in 'fair or better condition'**

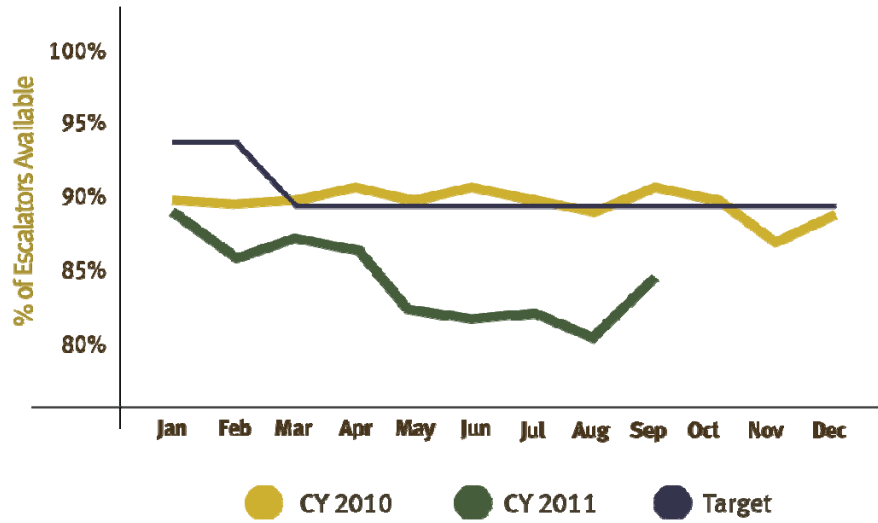
### **Measure 3.2: Percentage of Bridges that are 'Non-Deficient'**



Source: MD – MDOT/SHA, VA - VDOT

**Challenge: Increase the percentage of bridges that are non-deficient**

**Measure 3.3: Percentage of Metro Escalators Available**

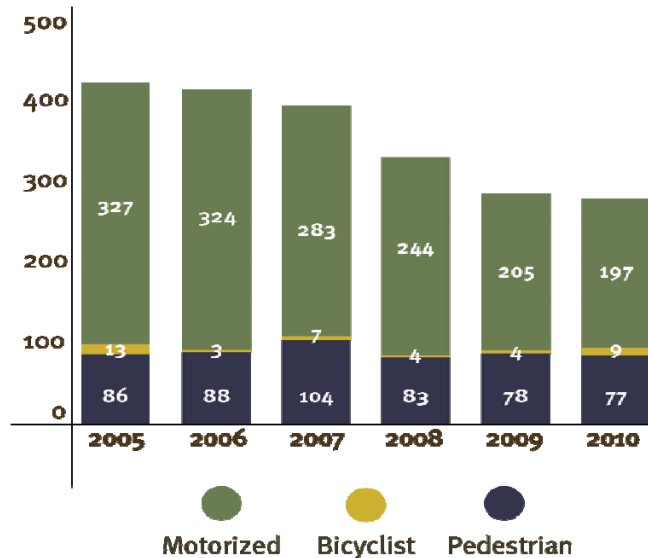


Source: WMATA Dashboard

**Challenge: Increase the percentage of Metro escalators available**

**Measure 3.4: Number of Transportation Injuries and Fatalities**

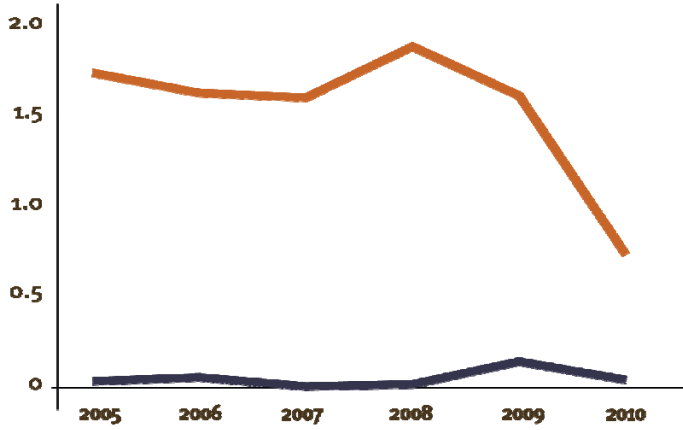
**Traffic Fatalities (Motorized, Bicyclist, and Pedestrian)**



Source: TPB Street Smart Program

### Metro Rail

Rate (per 10,000,000 passenger miles)

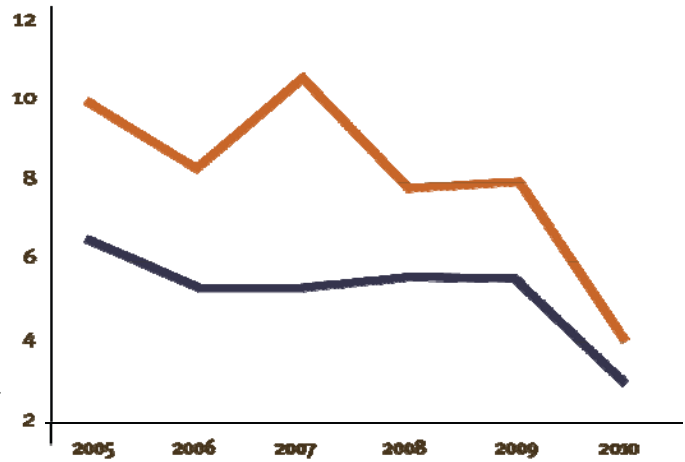


Injury Rate      Fatality Rate

	2005	2006	2007	2008	2009	2010
Total Injuries	252	266	264	319	274	128
Total Fatalities	4	8	0	2	23	6

### All Bus Systems in Region

Rate (per 10,000,000 passenger miles)



Injury Rate      Fatality Rate

	2005	2006	2007	2008	2009	2010
Total Injuries	668	555	708	584	590	295
Total Fatalities	2	8	8	8	5	0

Source: Bureau of Transportation Statistics (BTS) – National Transit Database (NTD)

\*All Bus Systems includes: MetroBus, Ride-On Montgomery County Transit, Ride-On Montgomery County Transit, City of Fairfax CUE Bus, Fairfax Connector Bus System, Potomac and Rappahannock Transportation Commission, City of Alexandria /Martz Group, Arlington Transit - Arlington County, Loudoun County Commuter Bus Service, Prince George's County Transit, Martz Group - National Coach Works of Virginia

**Challenge: Maintain progress on reducing the number of motorized traffic and transit injuries and fatalities; reduce bicycle and pedestrian injuries and fatalities**

## Goal 4: Maximize Effectiveness of the Transportation System

### Measure 4.1: Hours of Delay per Person (all vehicles)

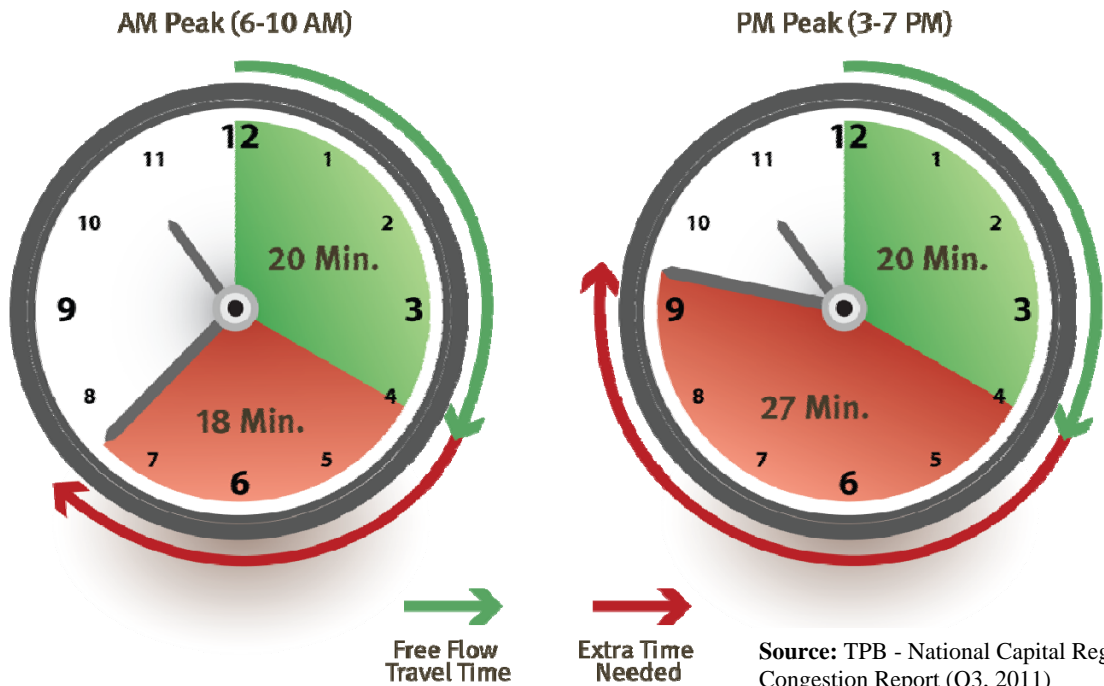
**11.4 Hours Per Month**

Source: TPB - National Capital Region Congestion Report (Q3, 2011)

**Challenge: Reduce the hours of delay per person**

### Measure 4.2: Extra Time Needed for On-time Arrival by Road Compared to Free-Flow

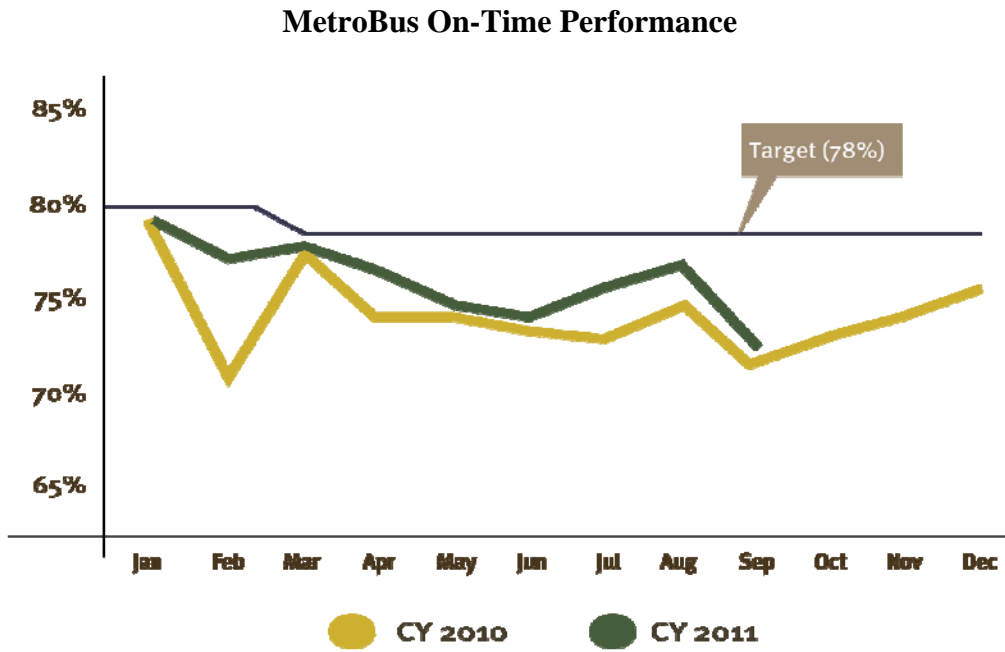
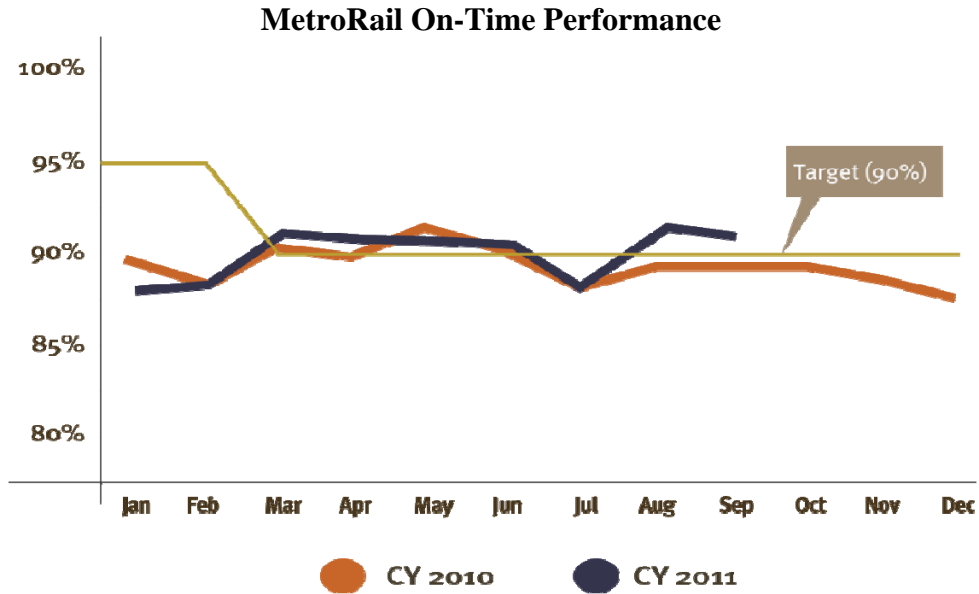
**For a 20 Minute Freeway Commute**



**Challenge: Reduce the extra time needed for on-time arrival by road compared to free-flow**



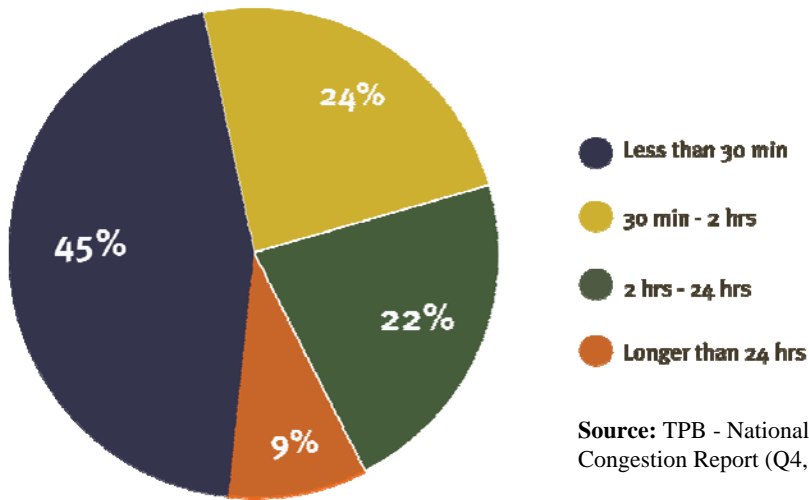
**Measure 4.3: Transit On-Time Reliability**



Source: WMATA Dashboard

**Challenge: Improve transit on-time reliability**

**Measure 4.4: Incident Clearance Time**

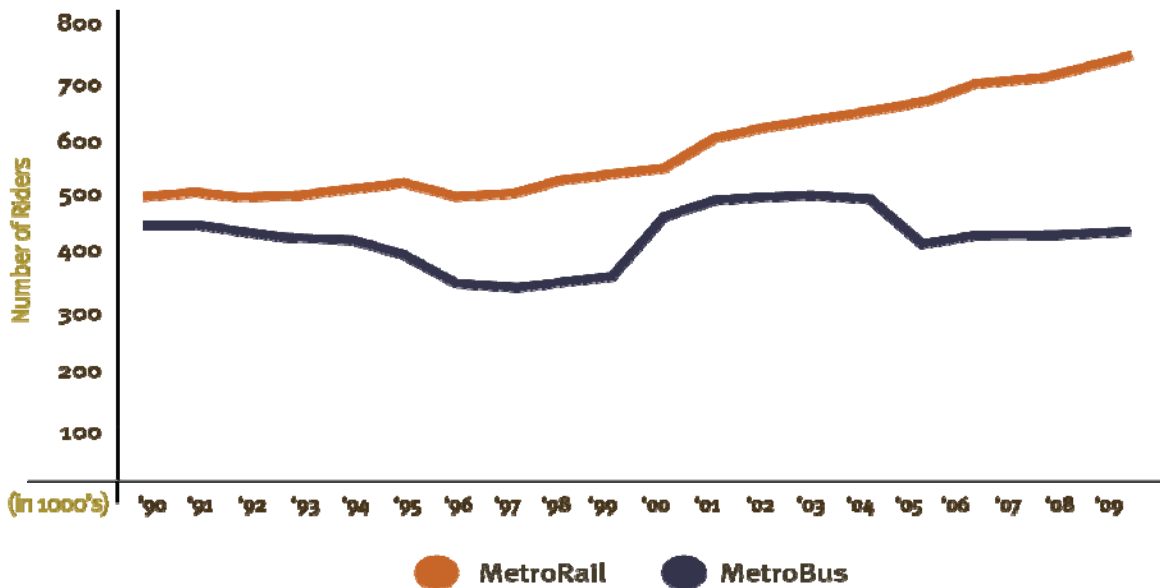


Source: TPB - National Capital Region Congestion Report (Q4, 2010)

**Challenge: Reduce the duration of incident clearance times**

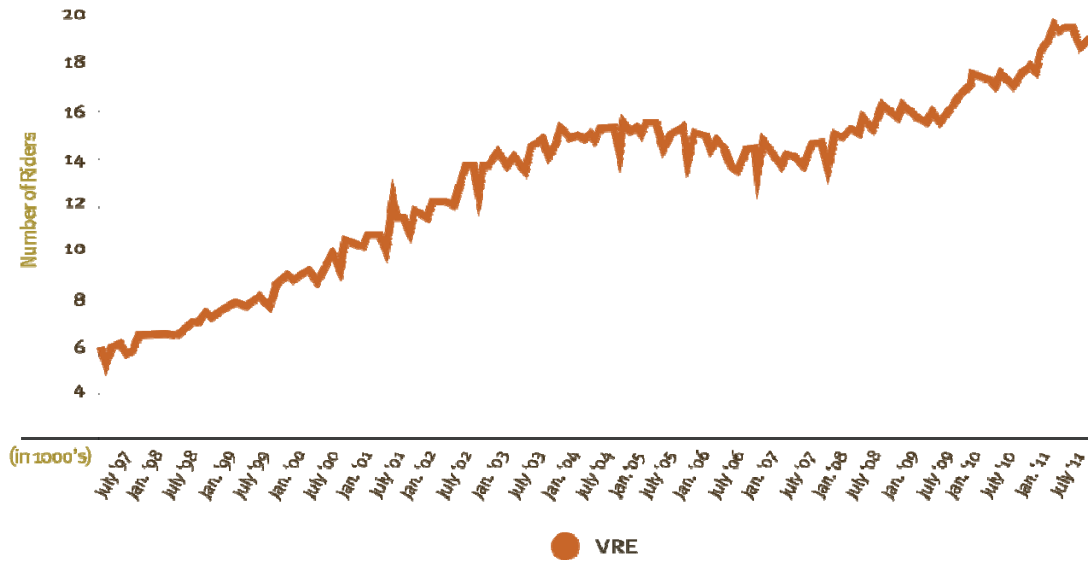
**Measure 4.5: Transit Ridership**

MetroRail and MetroBus Average Weekday Ridership (1990-2009)



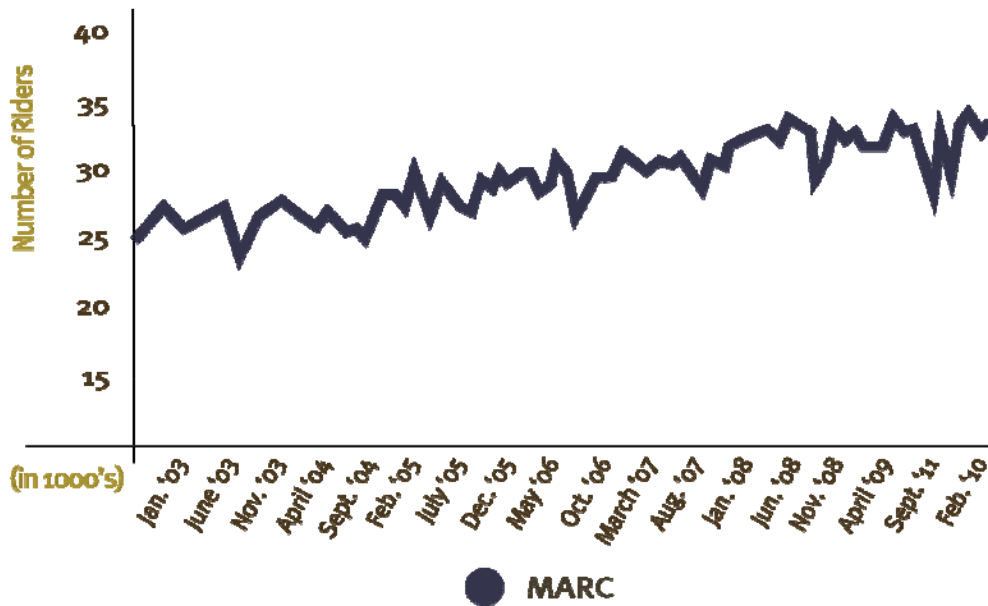
Source: WMATA Website

### VRE Weekday Ridership (1997-2011)



Source: VRE Website – Performance measures

### MARC Average Daily Ridership (2003-2010)

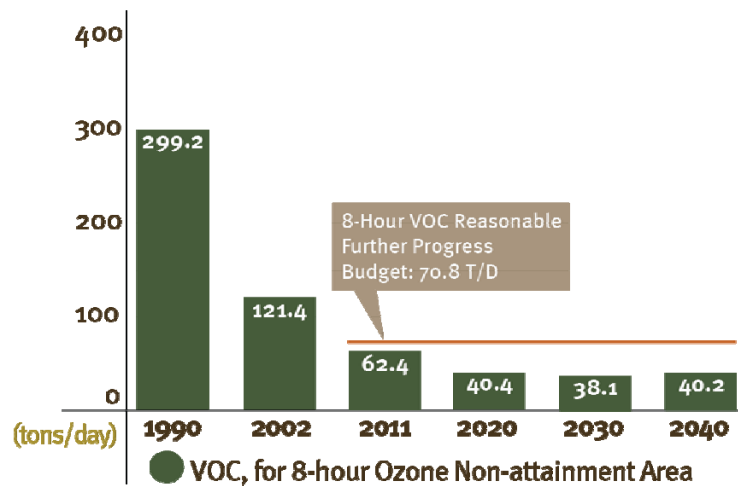
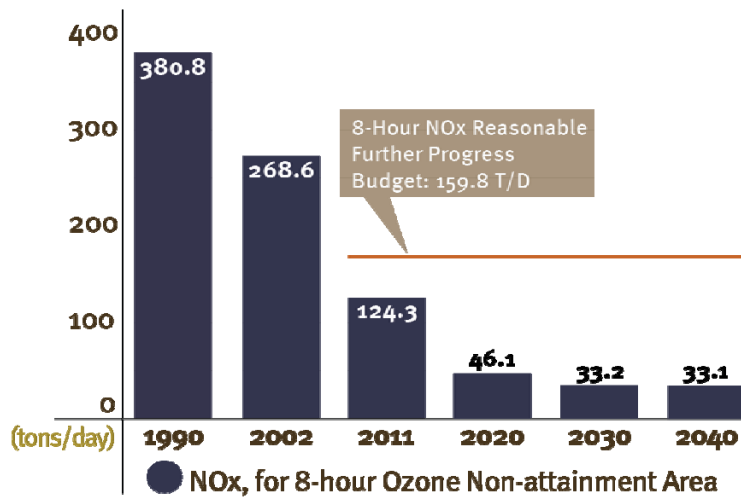


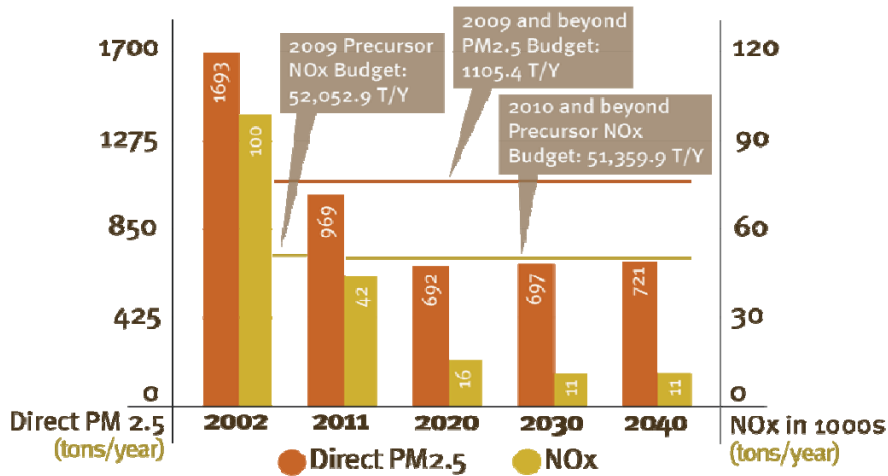
Source: MARC Website

**Challenge: Increase transit ridership**

## ***Goal 5: Enhance Environmental Quality, Protect Health, and improve Energy Efficiency***

### **Measure 5.1: Ozone precursors and particulates**



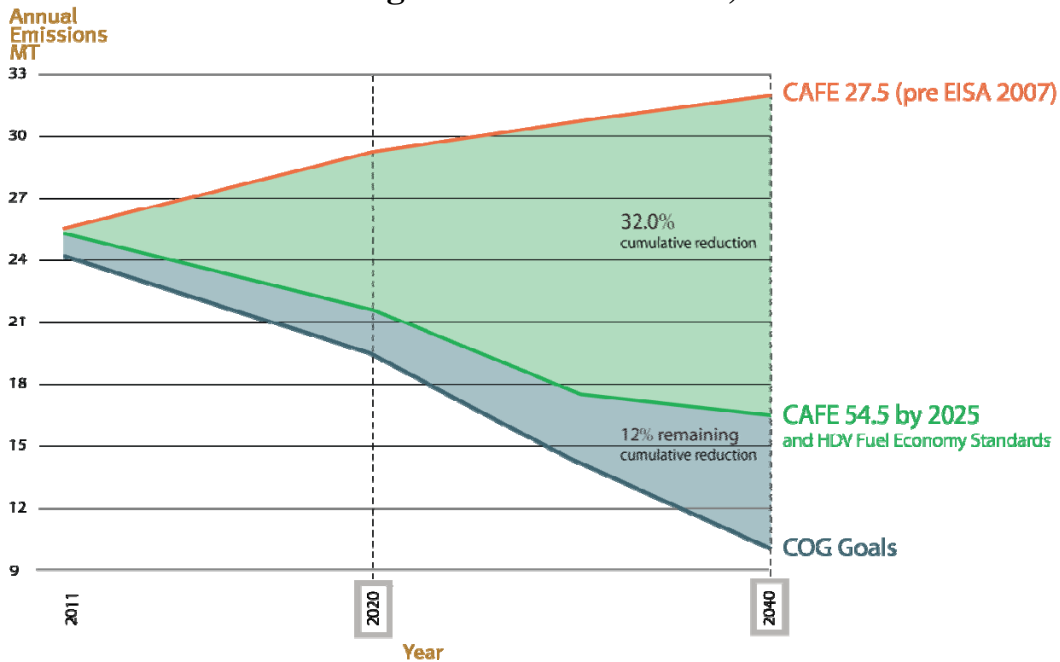


Source: 2010 CLRP Performance Analysis

**Challenge: Ensure all ozone precursor, nitrogen oxide, and particulate matter emissions remain below adopted budgets**

**Measure 5.2: GHG Emissions from Mobile Sources**

**Forecast Change in GHG Emissions, 2011-2040**



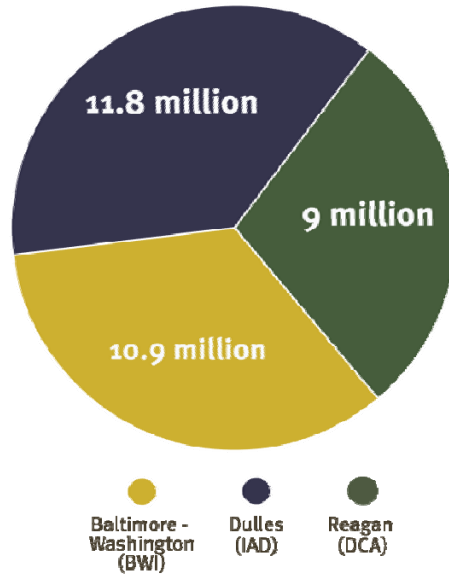
Source: TPB What Would It Take Scenario (WWIT)

**Challenge: Seek further reductions in GHG emissions from mobile sources**

**Goal 6: Support International and Inter-Regional Travel and Commerce**

**Measure 6.1: Number of Passengers Arriving at Region's Airports**

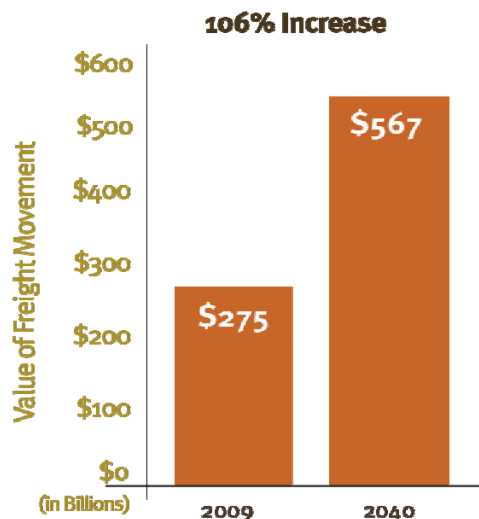
**Total: 31.8 Million Passengers (CY 2010)**



Source: FAA 2010 Monthly Enplanement Statistics

**Challenge: Ensure continued growth in the total number of passengers arriving at region's airports**

**Measure 6.2: Total Value of Freight Movement (rail, truck, air, and maritime)**

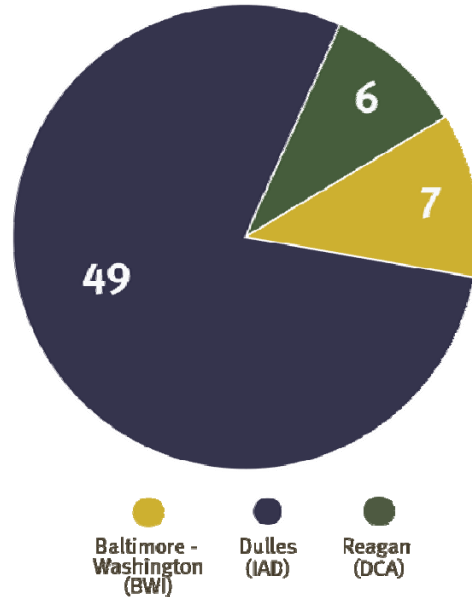


Source: FHWA Freight Analysis Framework (FAF)

**Challenge: Ensure continued growth in the total value of freight movement for all modes (rail, truck, air, and maritime)**

**Measure 6.3: Number of International Destinations Served Non-Stop by Region's Airports**

**Total: 62 International Destinations (CY 2010)**



Source: October 2011 Official Airlines Guide

**Challenge: Increase the number of international destinations served non-stop by regional airports (passenger flights)**