

THE FINANCIALLY CONSTRAINED

LONG-RANGE TRANSPORTATION PLAN

FOR THE NATIONAL CAPITAL REGION

Adopted: July 18, 2012



Performance Analysis

December 7, 2012



Presentation to the
Transportation Planning Board Technical Committee

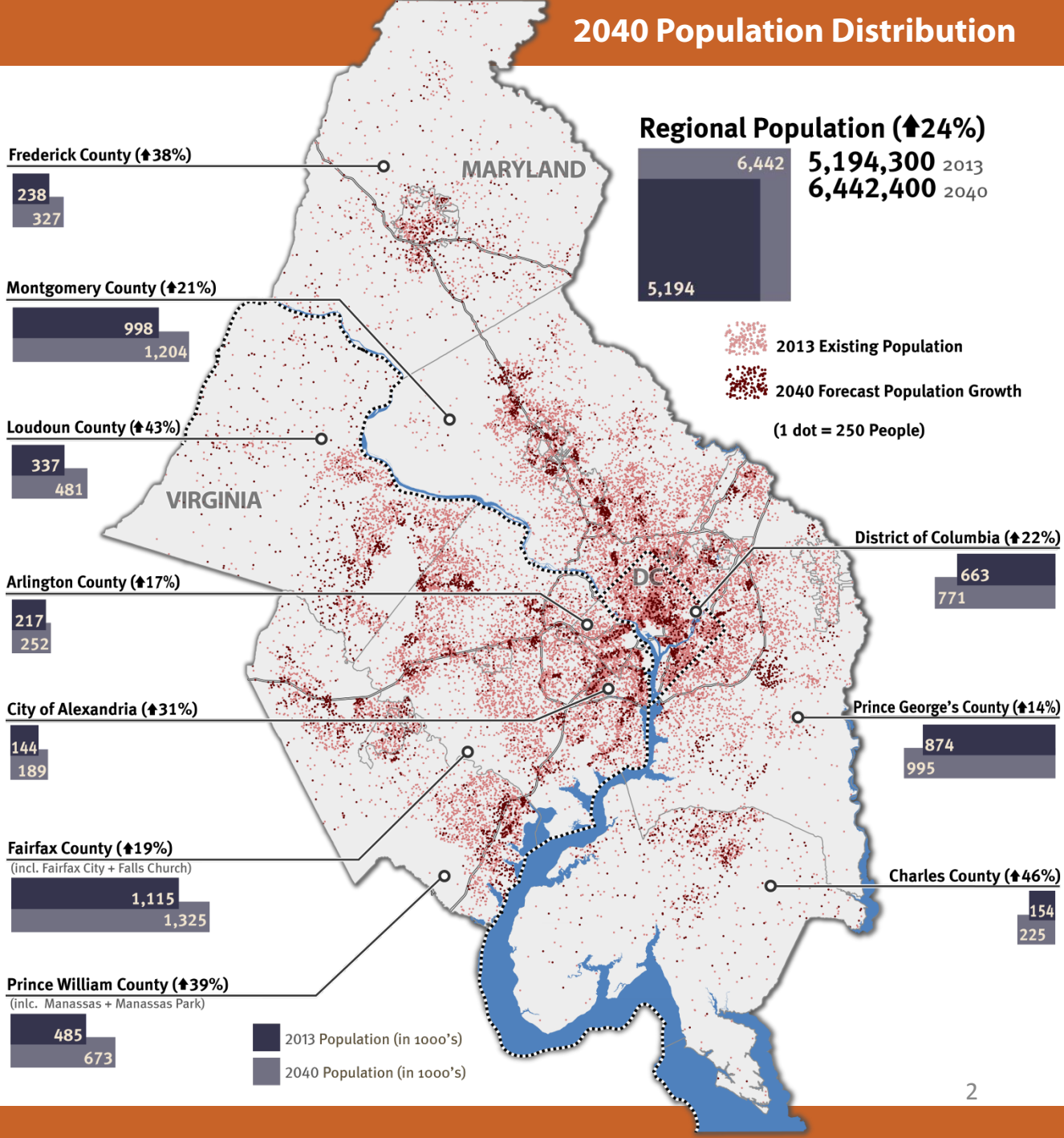
Population Growth

2013 - 2040

By 2040 the region's population will grow by 24% to almost 6.5 million people.

The population of the outer jurisdictions is expected to grow at a faster rate than the inner jurisdictions.

The inner jurisdictions will retain the majority of the region's population in 2040.



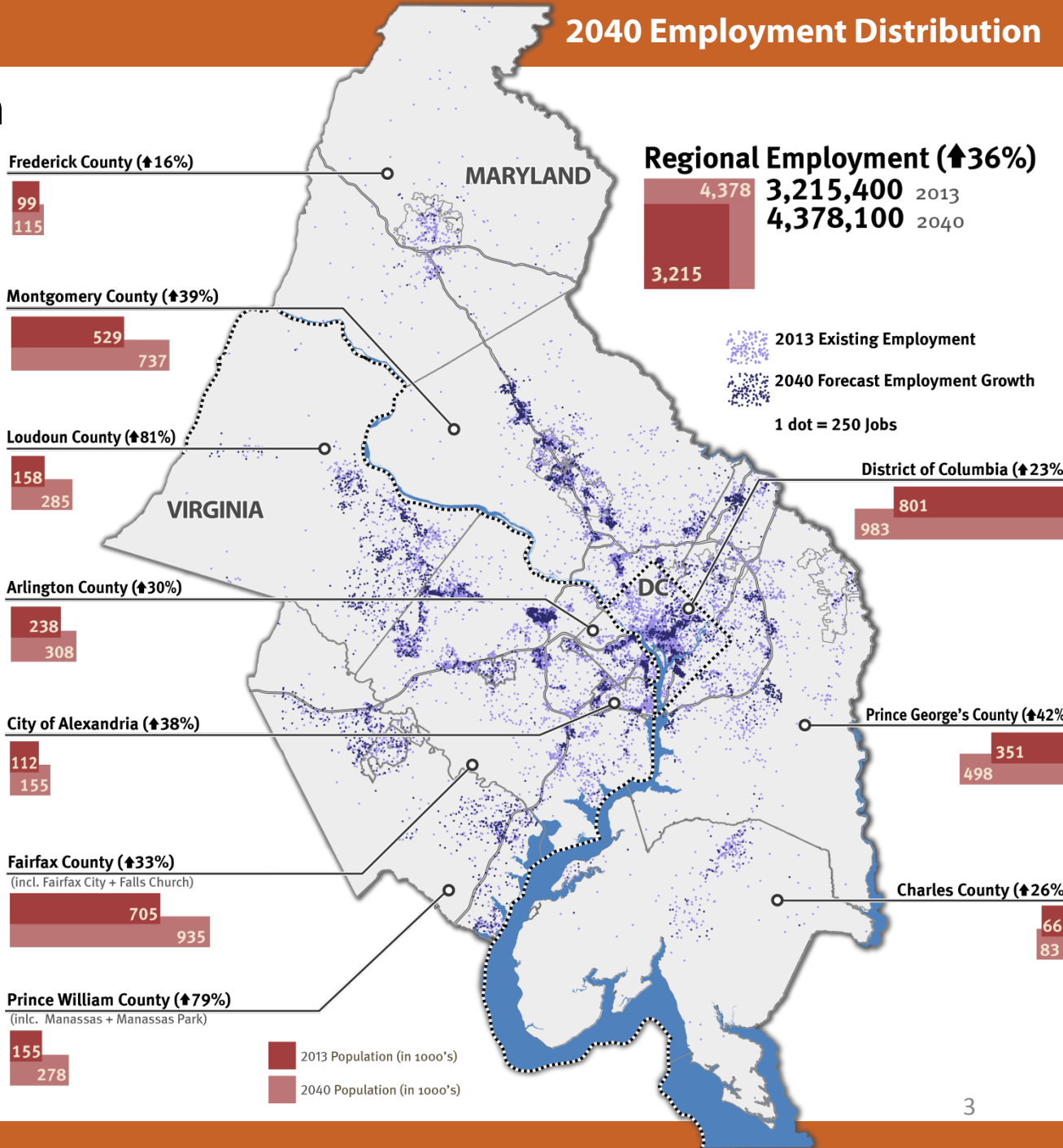
Employment Growth

2013 - 2040

By 2040 the region's employment will grow by 36%.

Employment is expected to grow fastest in the outer jurisdictions of Virginia, but the highest concentration of jobs will be in the District of Columbia, Fairfax County, VA, and Montgomery County, MD in 2040.

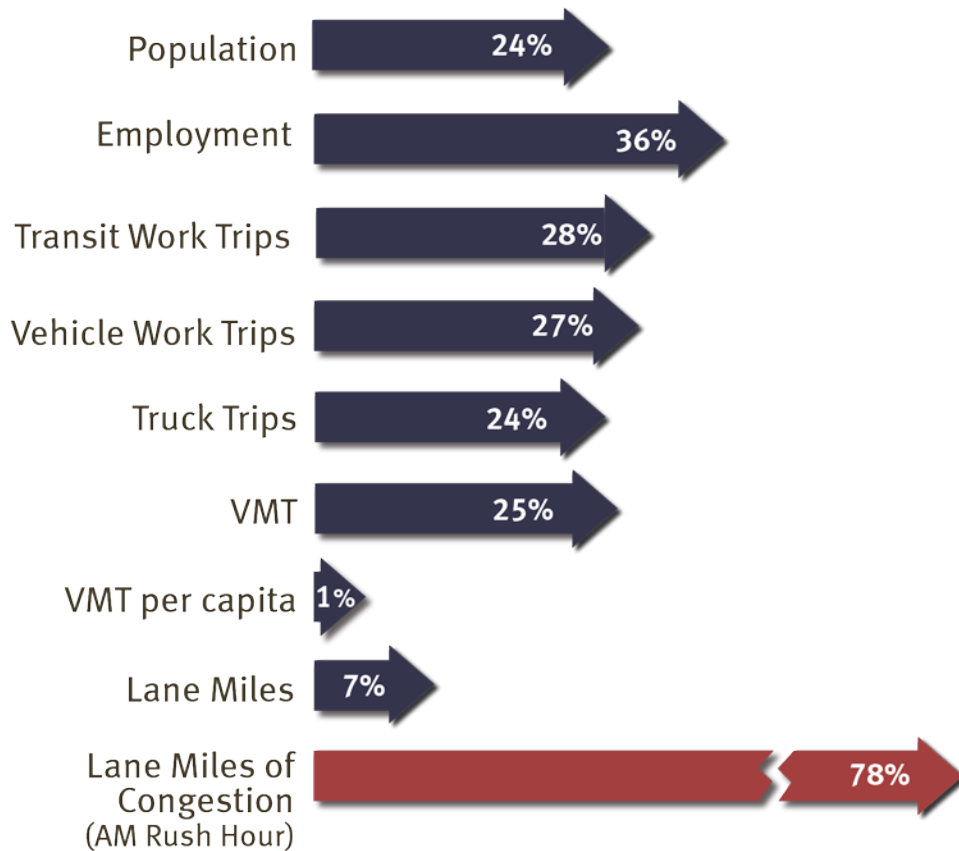
In 2040 population will be slightly more dispersed than it is today, and jobs will continue to concentrate toward the western side of the region.



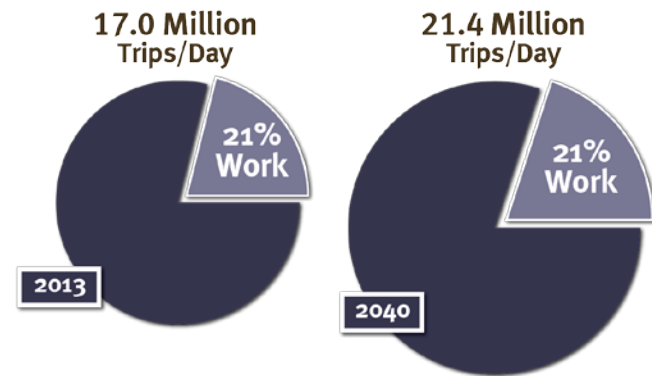
Travel Demand 2013 - 2040

In 2040 the total number of trips taken will increase by 4.4 million, or 26%. Commute trips will continue to account for only 21% of all trips taken in the region.

Change in Land Use and Travel Forecast 2013-2040



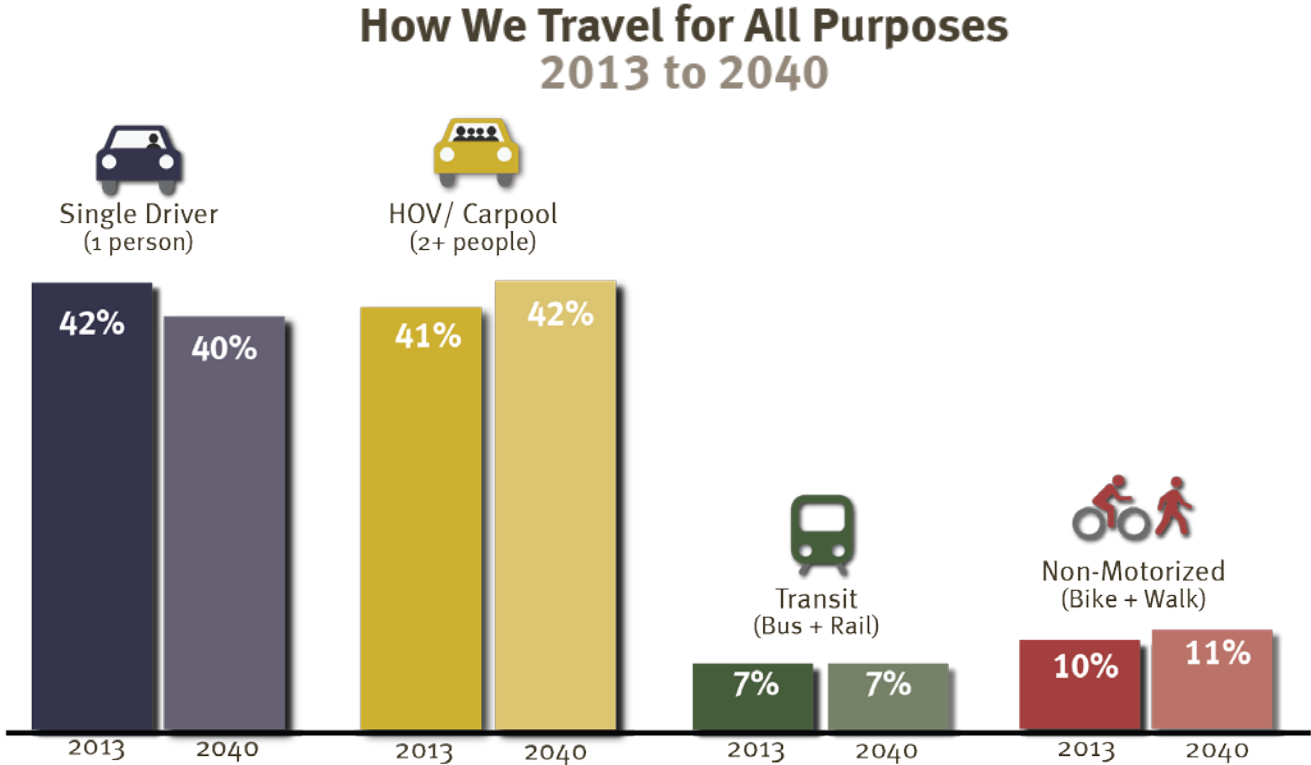
Trips by Purpose
2013 - 2040



Daily Mode Share 2013 - 2040

Currently 42% of all trips are single occupancy vehicle trips, 41% are carpool, 7% by bus or rail transit, and 10% by walking or biking.

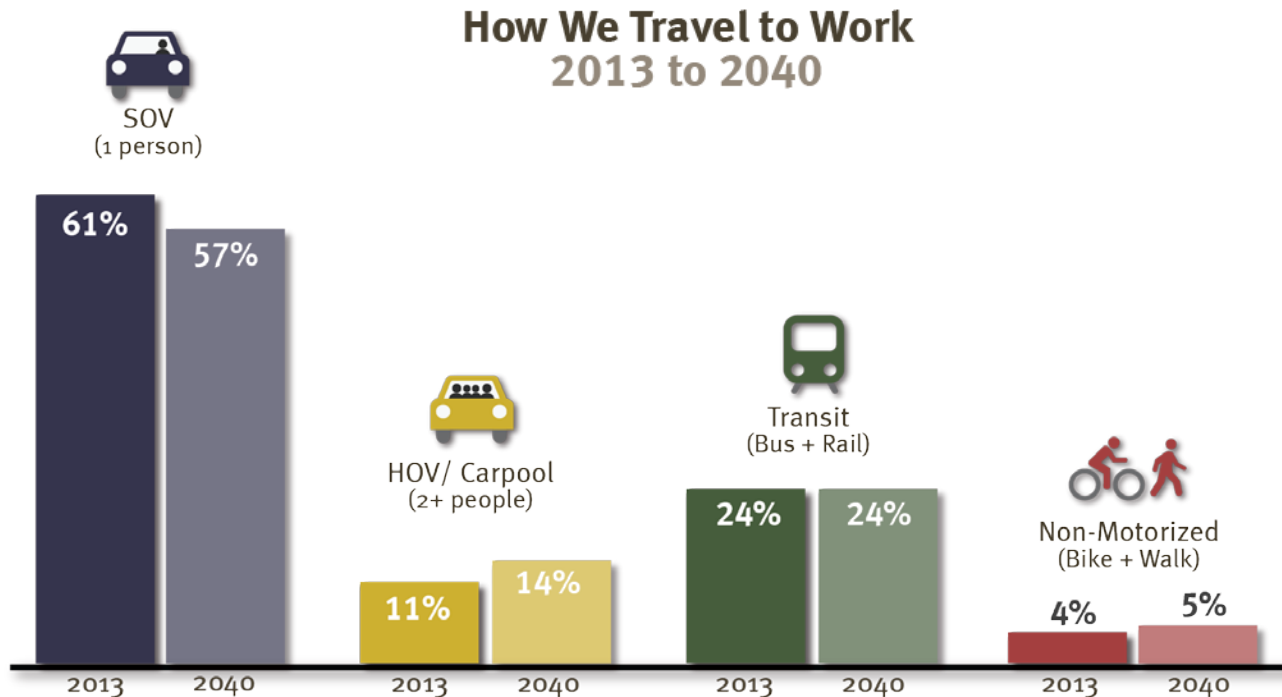
By 2040, these figures will not change significantly. SOV trips will drop slightly, while carpool and non-motorized trips will increase slightly.



Commute Mode Share 2013 - 2040

About 3 out of every 5 commute trips are made by people driving on their own (SOV), about 1 quarter of all trips are made by bus or rail transit, 11% are by carpool, and 4% by non-motorized modes.

In 2040 these figures will also not change significantly. SOV trips are projected to fall as a share of all trips, while Carpool and non-motorized trips are expected to increase.



Unconstrained Transit

2013 - 2040

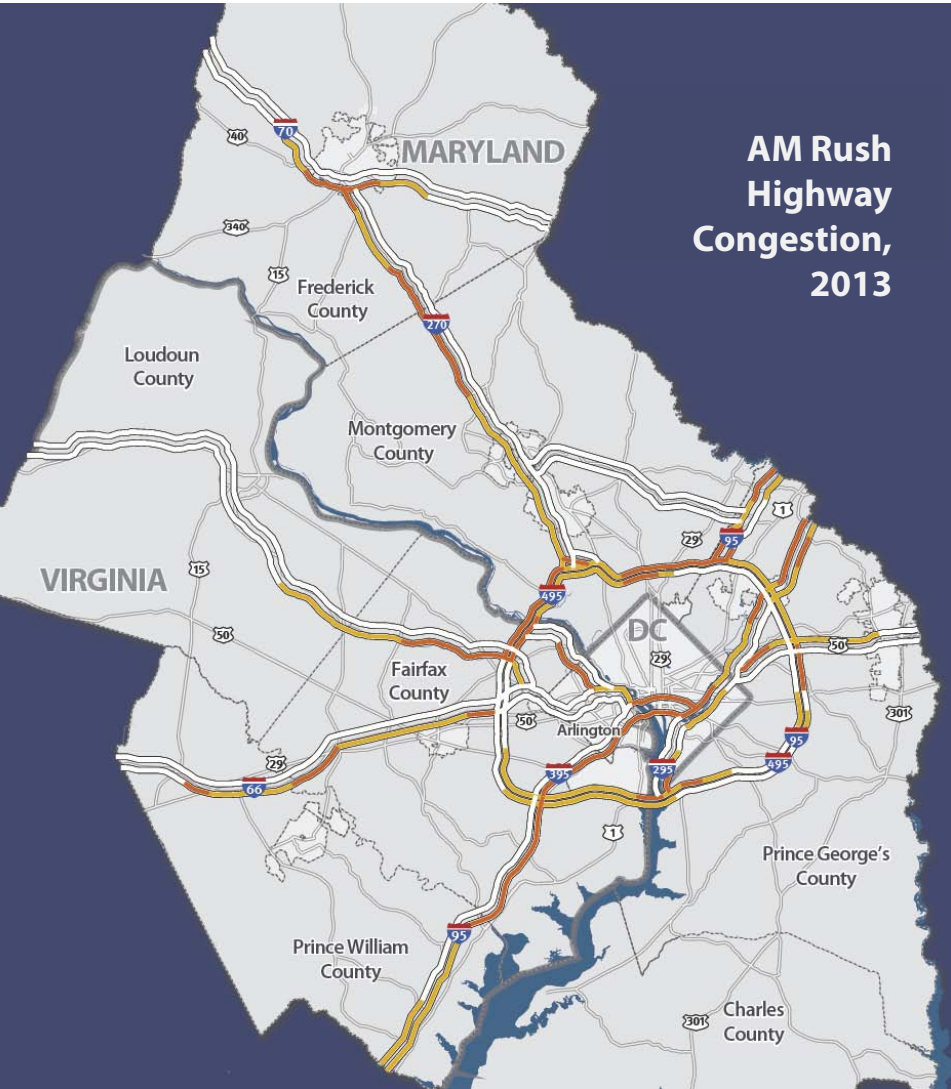
To address the lack of identified funding for WMATA's future rehabilitation and maintenance needs beyond 2020, transit ridership to or through the core area was constrained to 2020 levels.

When this constraint on transit trips is lifted, there is an increase of 31,000 transit work trips in 2040. This brings the commute mode share for transit up to **24.5%** from **24.0%**.

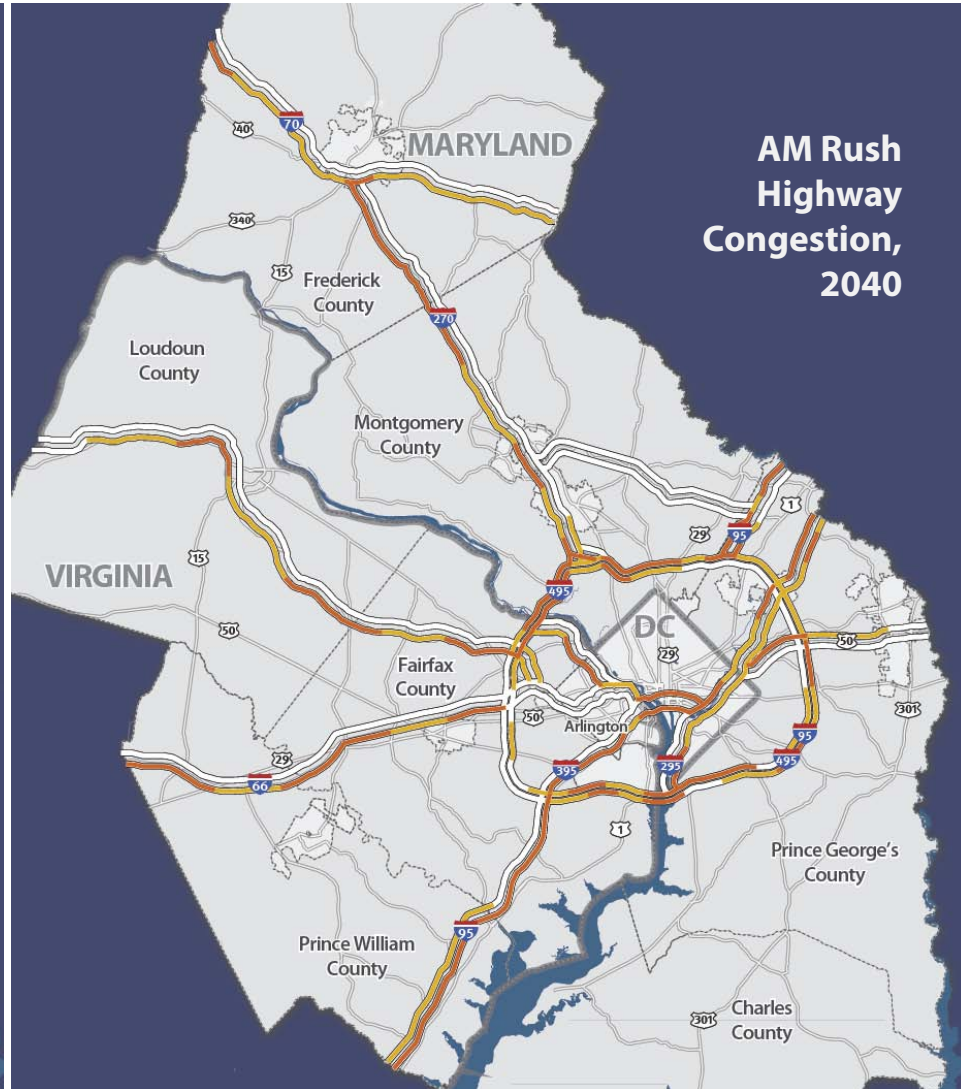
Number of Transit Work Trips in 2040
Constrained vs. Unconstrained
(in 1000s)



Highway Congestion 2013 - 2040



AM Rush Highway Congestion, 2013



AM Rush Highway Congestion, 2040

NOTE: I-95 and I-495 in VA illustrates only non-priced lanes. Priced lanes will have free flow traffic.

Highway Congestion 2013 - 2040

1. AM congestion is expected to increase throughout most of the region in 2040, particularly in the following outer jurisdiction locations:
 - **I-95** North in Prince William County
 - **I-70** East in Frederick County
 - **I-270** South in Frederick and Montgomery Counties
 - **I-66** East in Prince Williams and Fairfax Counties
 - The **Dulles Toll Rd.** Eastbound in Loudoun and Fairfax Counties
2. Congestion will also increase inside the Capital Beltway along **I-395** North, **I-295/MD-295** North, and the **George Washington Memorial Parkway**; however **I-66** is expected to be uncongested due to planned HOV-3 restrictions.
3. While the **Capital Beltway** is expected to be more congested in most locations, congestion along the inner and outer loops in Fairfax County will be somewhat reduced due to the Express Toll Lanes.

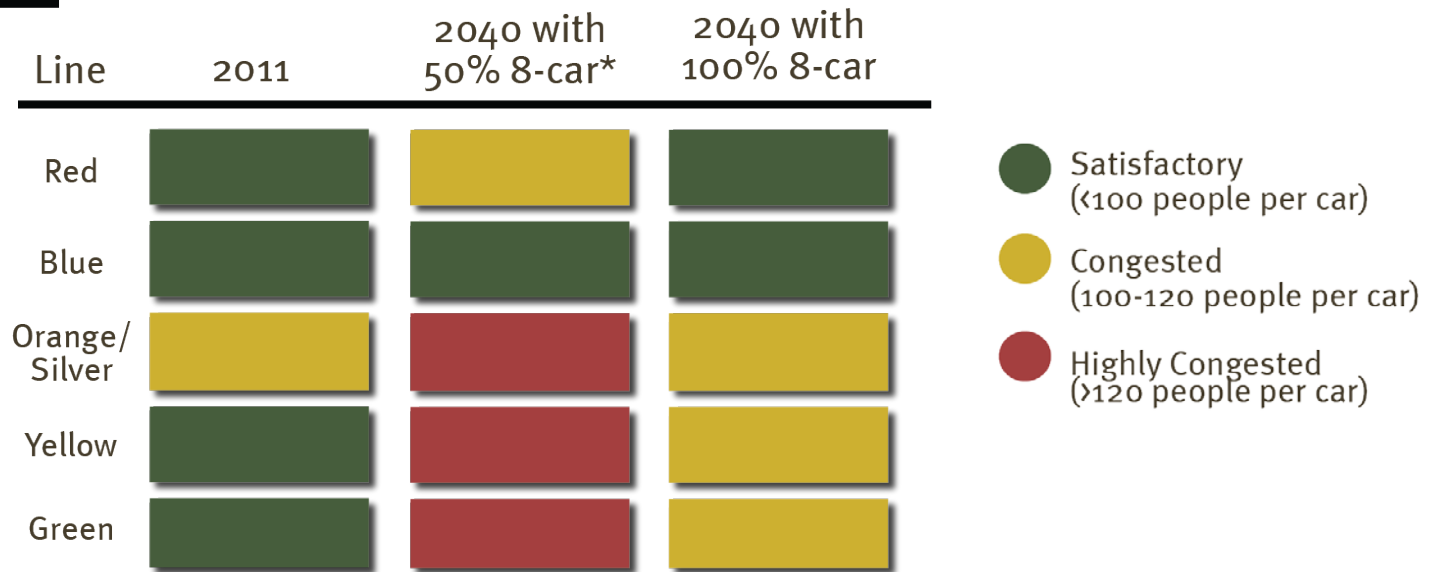
Transit Congestion 2013 - 2040

The Metrorail system will likely reach capacity on trips to and through the regional core, due to lack of funding for capacity enhancements.

Without additional railcars beyond those currently funded, all lines entering the core will become congested by 2040.



MetroRail Congestion AM rush hour



*The 2012 CLRP assumes 50% 8-car trains in 2040

Accessibility to Jobs

What is Job Accessibility?



LOCATION OF JOBS

+



TRAVEL TIME
(BY AUTO OR TRANSIT)

=

ACCESSIBILITY

[NUMBER OF JOBS
WITHIN 45 MINUTE
COMMUTE]

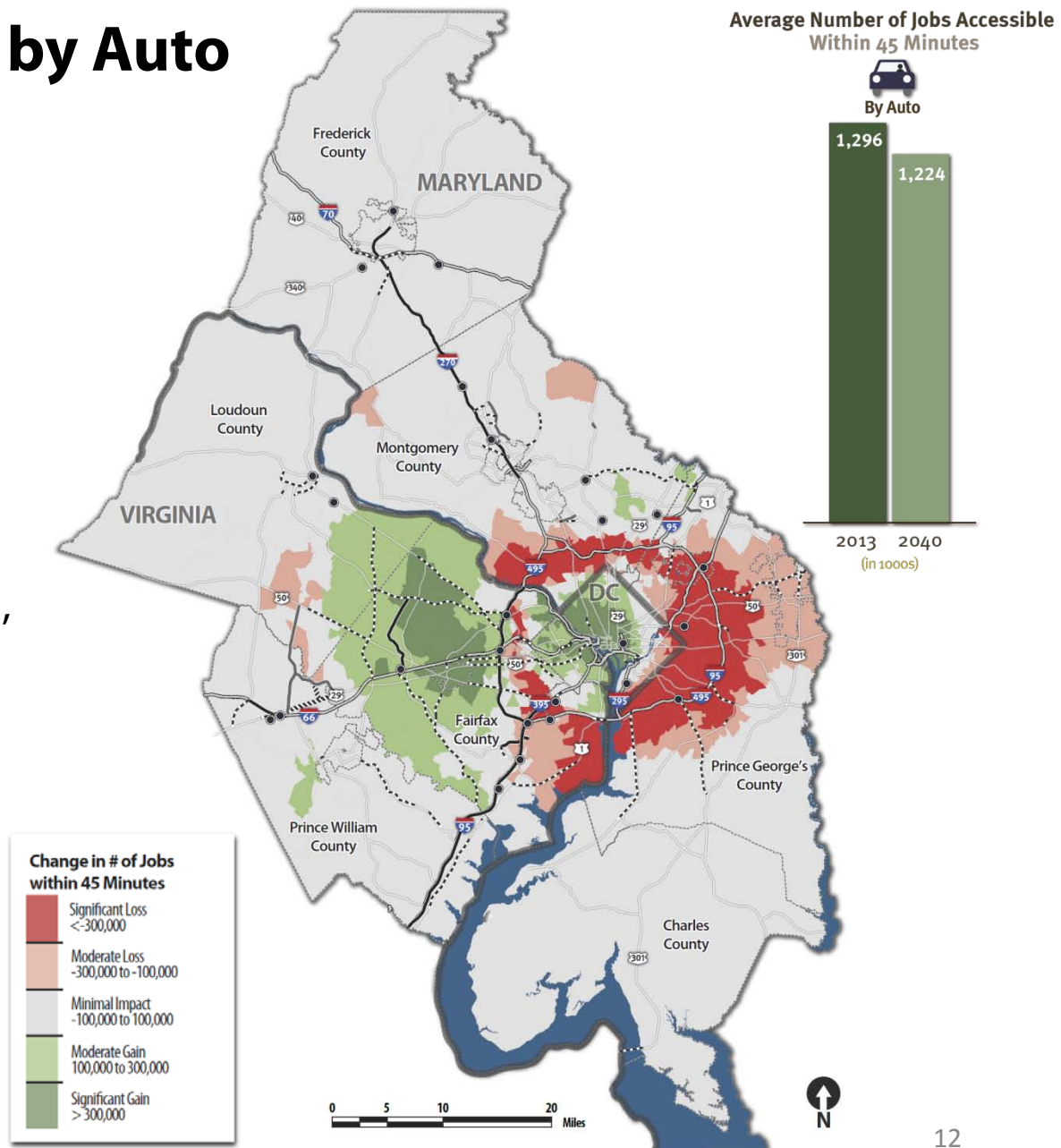
Jobs are considered to be **accessible** if they are within a 45 minute commute range.

Accessibility to Jobs by Auto

2013 - 2040

The average number of jobs accessible within a 45 minute automobile commute is expected to go down slightly.

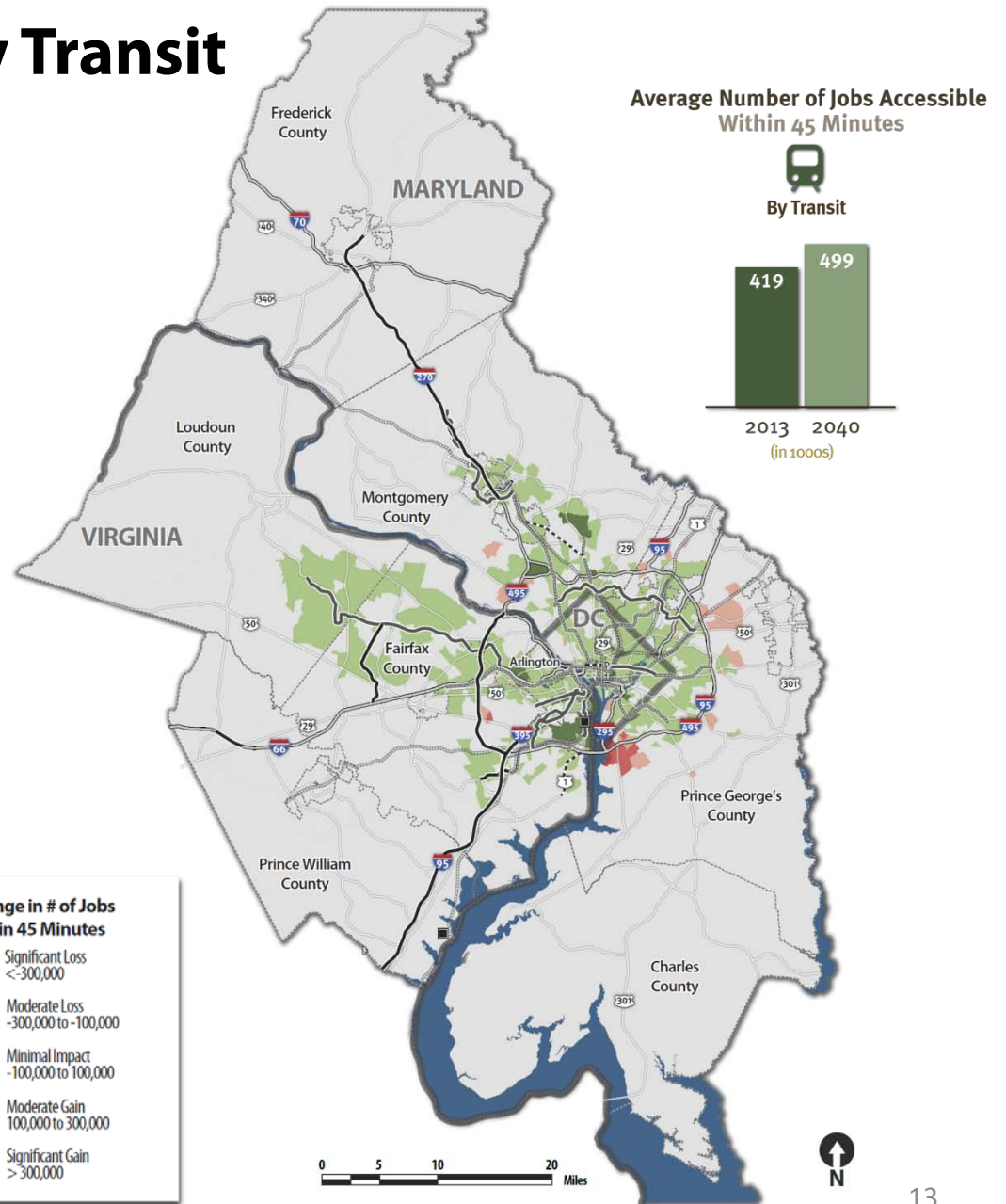
The greatest reductions in job accessibility are expected to be on the eastern side of the region, due to increases in congestion system-wide and a higher concentration of future jobs on the west side.



Accessibility to Jobs by Transit

2013 - 2040

Average accessibility by transit is forecast to increase, but will remain significantly lower than by automobile.



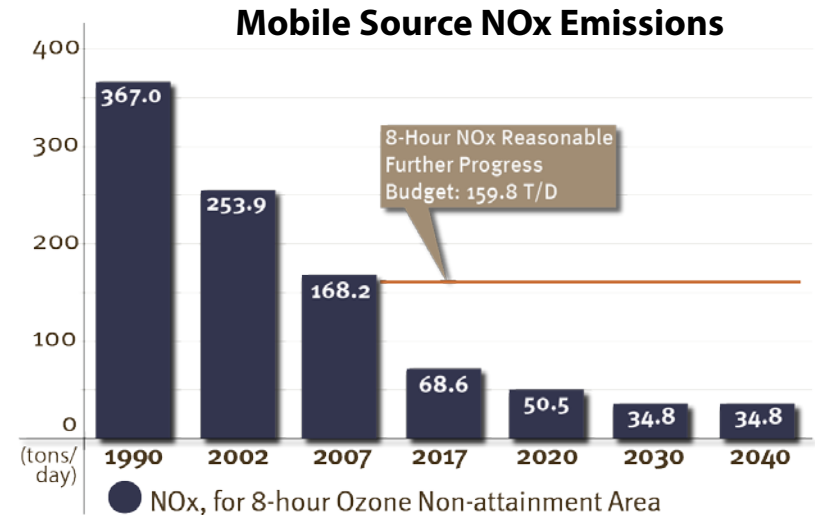
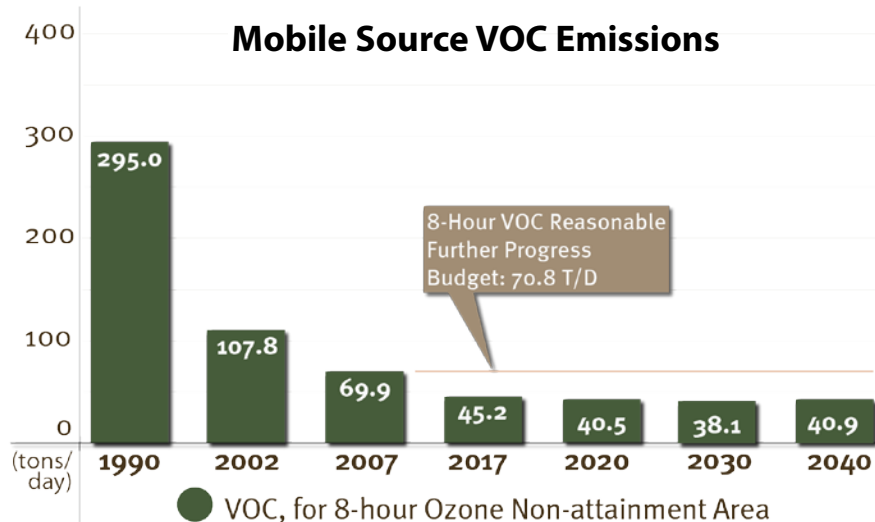
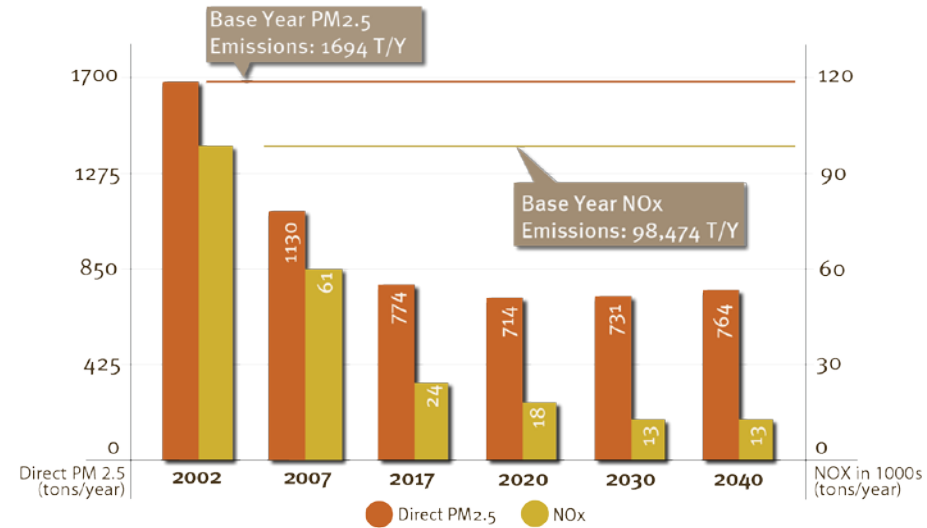
Air Quality

2013 - 2040

The CLRP shows substantial reductions in all three main pollutants through 2020, with a very small uptick between 2030 and 2040.

Estimated emissions are well within the approved budget for each pollutant through 2040.

PM2.5 Direct and Precursor NOx emissions



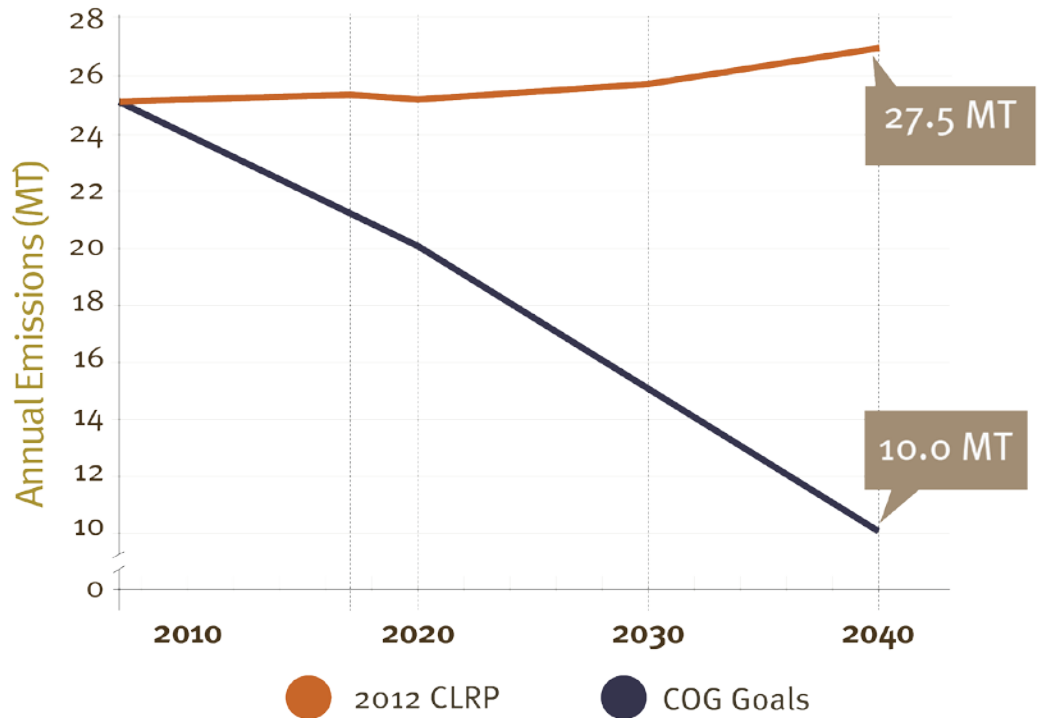
Air Quality – Carbon Dioxide (CO₂)

2013 - 2040

The regional target for carbon dioxide emissions is far from being met: emissions are projected to increase between 2010 and 2040.

However, when new federal fuel economy standards are included, it is expected that CO₂ emissions estimates will decrease over time.

Carbon Dioxide (CO₂) Emissions



Regional Challenges Highlighted by the 2012 CLRP



Metrorail Repair Needs: Funding to address deferred Metrorail maintenance needs is committed only through 2020.



Roadway Congestion: The region's roadways will remain among the most congested in the nation, limiting travel options for people and goods.

Regional Challenges Highlighted by the 2012 CLRP



Transit Congestion: The Metrorail system will experience increasingly severe crowding problems, and lack the capacity to support forecasted population and employment growth.



Housing & Job Location: Most housing and many of the region's jobs will continue to be located far outside of activity centers in locations with limited travel options.

Addressing the Challenges Highlighted by the 2012 CLRP

1. Obtain additional funding for both transit and roadways

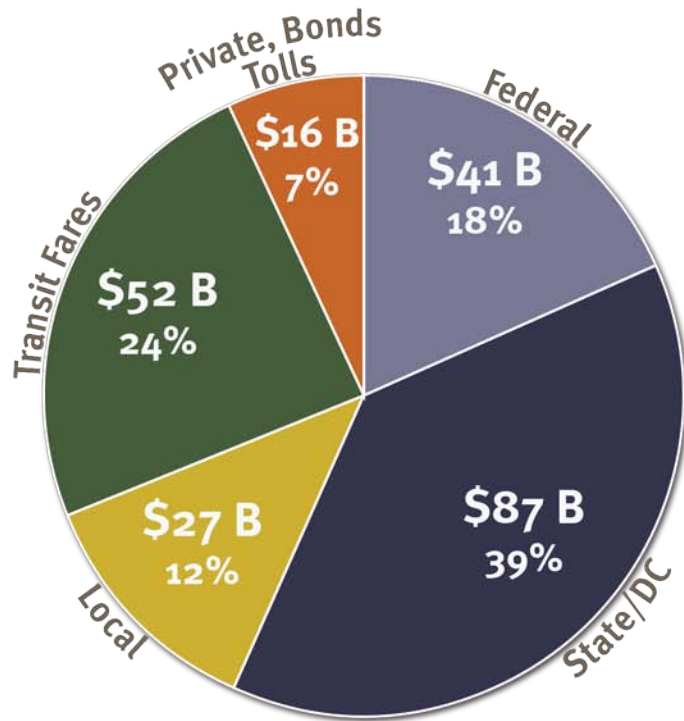
- Transit:
 - Funding for Metrorail maintenance and rehabilitation needs beyond 2020
 - Funding to expand Metrorail capacity through 8-car trains and other measures
- Roadways:
 - Sufficient funding to support both road and bridge maintenance requirements and the capacity improvements needed to accommodate a growing region

2. Improve coordination of transportation and land-use

- Take advantage of the many untapped opportunities for mixed-use development near existing rail stations
- Concentrate more of the region's housing and employment growth in activity centers and other areas with good transportation options

CLRP Funding and Expenditures

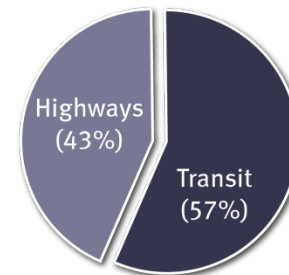
Revenues by Funding Source, 2011-2040



CLRP Expenditures, 2011-2040

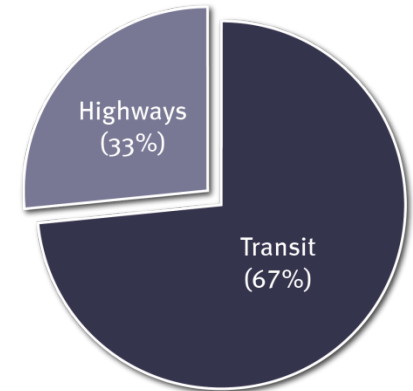
\$222.9 Billion

Expansion



\$67 Billion
(30% of total expenditures)

Operations & Preservation



\$156 Billion
(70% of total expenditures)

Cooperative Forecasts 1990 - 2010

Round 8.1 (2012) vs. Round 4.1 (1991)

Land-Use Based on Forecasts (in thousands)

Jurisdiction	Round 4.1 (1)						Round 8.1 (2)		
	1990 Households	1990 Population	1990 Employment	2010 Households	2010 Population	2010 Employment	2010 Households	2010 Total Population	2010 Employment
District of Columbia	259.3	628.3	718.2	264.8	627.7	886.0	266.7	601.7	783.5
Montgomery Co., MD	280.0	710.0	455.0	371.0	820.0	670.0	361.0	971.6	510.1
Prince George's Co., MD	262.9	718.4	311.8	337.0	840.9	473.0	304.0	863.4	342.6
Arlington Co., VA	81.4	167.0	214.6	95.9	178.8	263.6	98.1	207.6	223.3
City of Alexandria, VA	56.0	111.1	97.1	72.0	135.0	145.2	68.1	140.0	106.0
Fairfax Co., VA	316.3	825.8	412.4	448.2	1,028.4	625.4	399.5	1,091.5	680.0
Loudoun Co., VA	22.7	89.8	30.2	62.0	210.9	86.9	104.6	312.3	143.7
Prince William Co., VA	88.9	277.0	75.5	142.7	390.2	142.9	147.8	454.1	143.6
Frederick Co., MD	53.0	149.1	54.0	92.5	243.6	117.5	84.8	233.4	98.7
Charles Co., MD	34.0	103.8	34.2	58.5	161.5	43.0	51.0	144.6	62.2
Total	1,454.5	3,780.3	2,403.0	1,944.6	4,637.0	3,453.5	1,885.6	5,020.2	3,093.7

Comparison of Round 8.1 2010 and Round 4.1 2010

Jurisdiction	HH	POP	Employment
District of Columbia	1.01	0.96	0.88
Montgomery Co., MD	0.97	1.18	0.76
Prince George's Co., MD	0.90	1.03	0.72
Arlington Co., VA	1.02	1.16	0.85
City of Alexandria, VA	0.95	1.04	0.73
Fairfax Co., VA	0.89	1.06	1.09
Loudoun Co., VA	1.69	1.48	1.65
Prince William Co., VA	1.04	1.16	1.00
Frederick Co., MD	0.92	0.96	0.84
Charles Co., MD	0.87	0.90	1.45
Regional Total	0.97	1.08	0.90

- (1) Round 4.1 Cooperative Forecasting: Round IV Technical report- 1991 (applied in AQC Analysis of the FY93-98 TIP)
- (2) Round 8.1 Cooperative Forecast transmittal memo from Paul DesJardin to Elena Constantine dated 2/28/2012

Major CLRP and Non-CLRP Projects Completed by 2010

Major projects in 1991 CLRP and Completed by 2010





- The Green line to Greenbelt and Branch Ave. in Md., and from U Street to Ft. Totten in DC.
- The Red line to Glenmont in Md.
- The Blue line to Franconia /Springfield in Va.
- The Fairfax County Parkway, construct
- I-66 widen to 6 lanes from Fairfax City to Manassas
- I-270 widen to 12 lanes in Md.
- Dulles Toll Road widen to 6 lanes in Va.
- VA 28 widen to 8 lanes in Va.

Projects not in the 1991 CLRP but built by 2010

- New York Ave Metro Station in DC
- The Woodrow Wilson Bridge reconstruction (study only)
- I-95/395/495 interchange reconstruction (study only)
- I-95 interchange at Arena Drive in Md.
- Dulles Greenway construct 4 lanes in Va.

Commute Mode Share

By Regional Core, Inner, and Outer Suburbs

		 SOV (1 person)	 HOV/ Carpool (2+ people)	 Transit (Bus + Rail)	 Non-Motorized (Bike + Walk)	
Regional Total	2013	Trips	2,131,500	399,500	843,200	137,500
		% Share	61%	11%	24%	4%
	2040	Trips	2,580,000	641,400	1,081,700	216,400
		% Share	57%	14%	24%	5%
Regional Core	2013	Trips	150,251	32,215	366,705	82,503
		% Share	24%	5%	58%	13%
	2040	Trips	181,382	41,717	429,561	118,502
		% Share	24%	5%	56%	15%
Inner Suburbs	2013	Trips	1,129,700	195,000	410,500	46,100
		% Share	63%	11%	23%	3%
	2040	Trips	1,342,200	249,000	519,600	80,100
		% Share	61%	11%	24%	4%
Outer Suburbs	2013	Trips	535,800	99,700	36,300	8,800
		% Share	79%	15%	5%	1%
	2040	Trips	710,300	202,000	88,600	17,800
		% Share	70%	20%	9%	2%