The Financially Constrained

Long-Range Transportation Plan

For the National Capital Region

2014

Draft Performance Analysis

Presentation to the TPB Technical Committee
September 5, 2014

What is the Long-Range Transportation Plan (CLRP)?

- **The CLRP identifies regionally significant transportation projects and programs that are planned between now and 2040**
  - Over 750 Projects are included from simple highway landscaping projects to billion-dollar highway and transit projects (includes 7% more lane miles of roadway, and 15% more miles of transit rail)
  - Funding for programs that aim to make the transportation system in Metropolitan Washington better and more efficient

- **Some specific projects in the CLRP include:**
  - Metro's Silver Line and Columbia Pike Street Car (in VA)
  - The Purple Line and the Corridor Cities Transitway (in MD)
  - The H. St. / Benning Rd. Street Car (in DC)
  - Approx. 1,200 new lane-miles of roadway including Express Toll lanes on I-95 in VA
  - 25 improved highway interchanges

For a complete listing of projects and programs in the CLRP, visit:
http://www.mwcog.org/clrp/

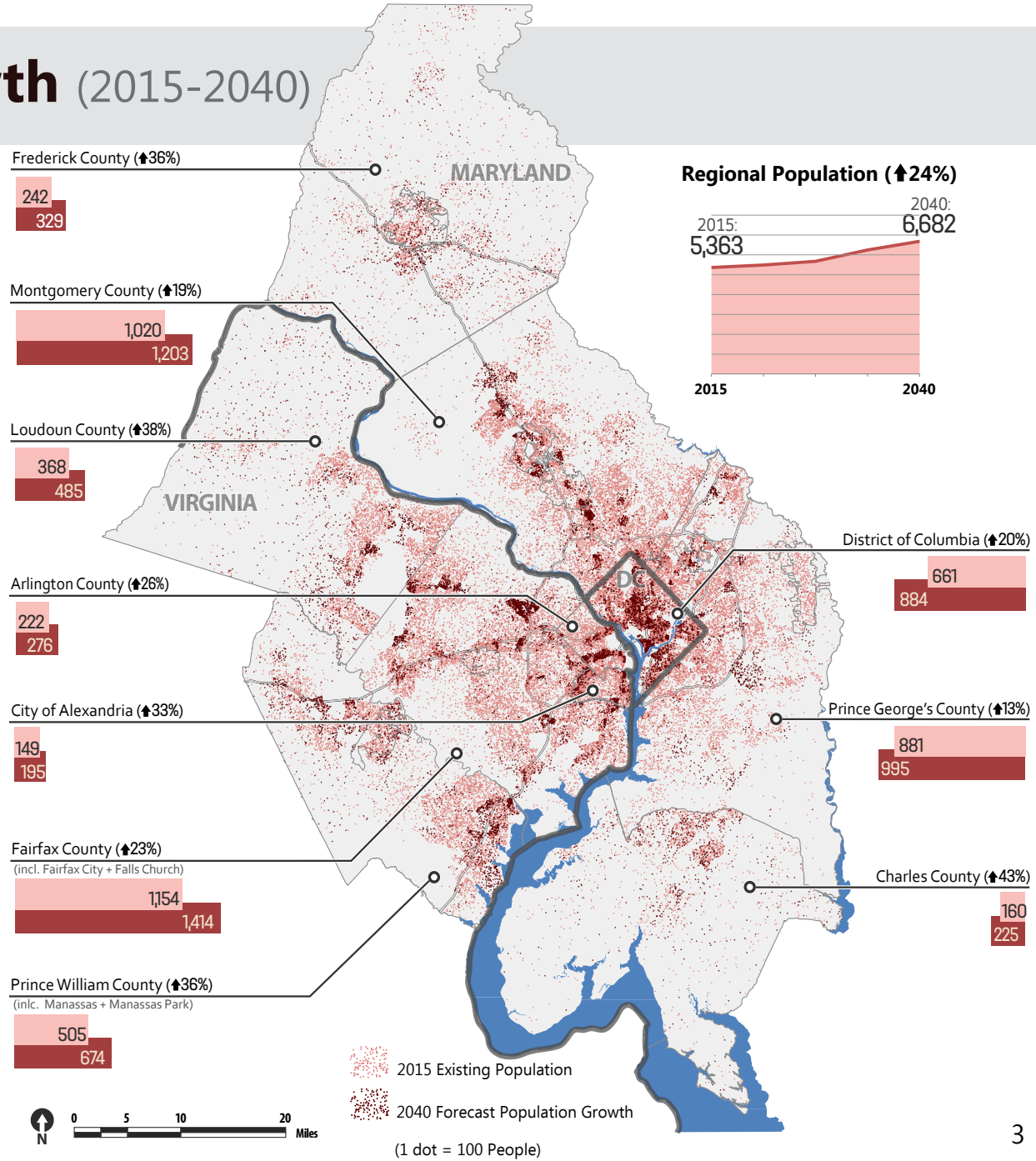
Population Growth (2015-2040)

By 2040 the region's population is forecast to grow by 24% to over **6.6 million people**.

The population of the outer jurisdictions is expected to grow at a faster rate than the inner jurisdictions, but the inner jurisdictions will retain the majority of the region's population in 2040.

The majority of the new residents are forecast to live in denser population centers throughout the region.

** Population and Job Estimates come from the Round 8.3 cooperative forecast*



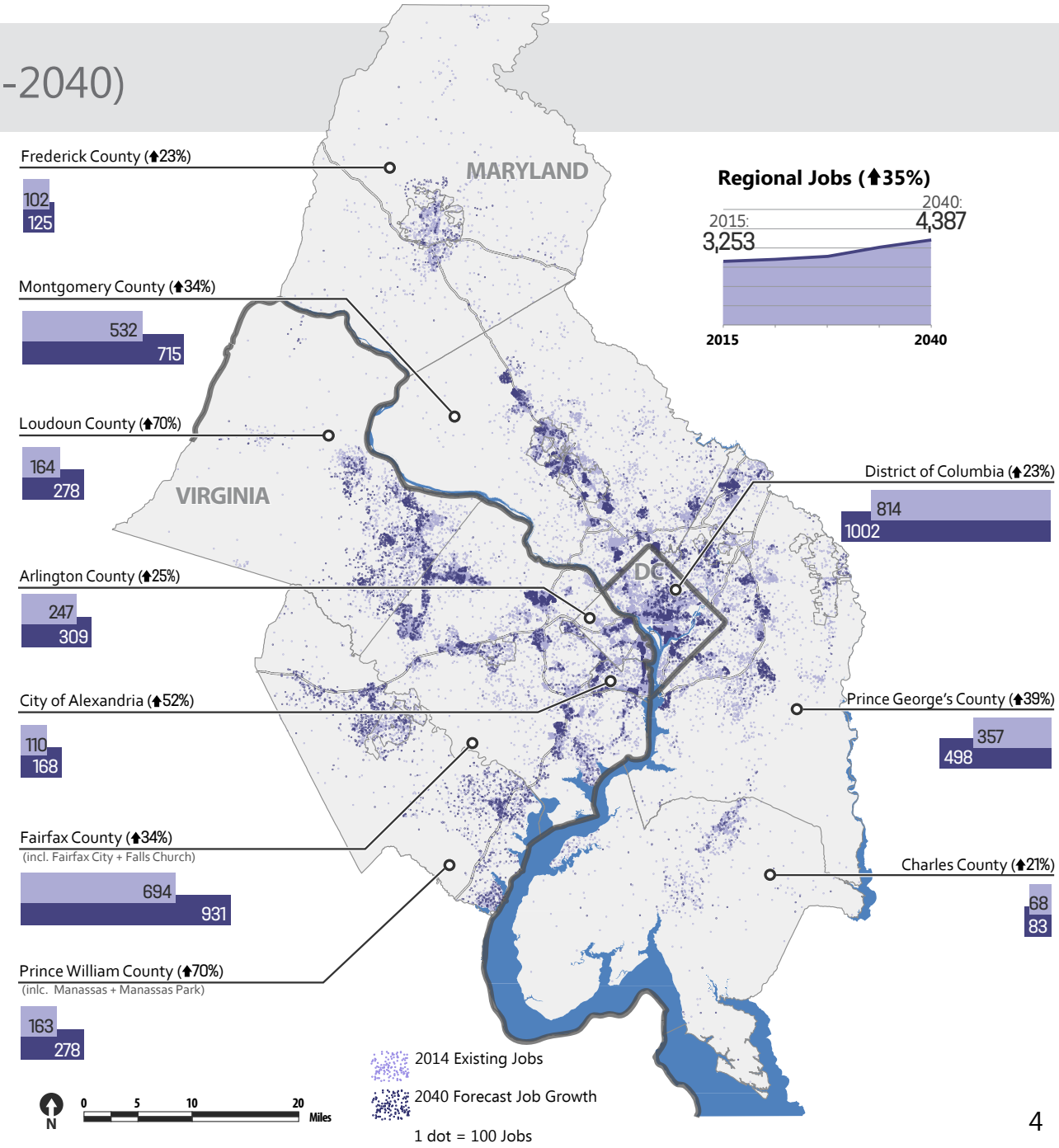
Job Growth (2015-2040)

By 2040 the region's employment will grow by 35% to over **4.3 million jobs.**

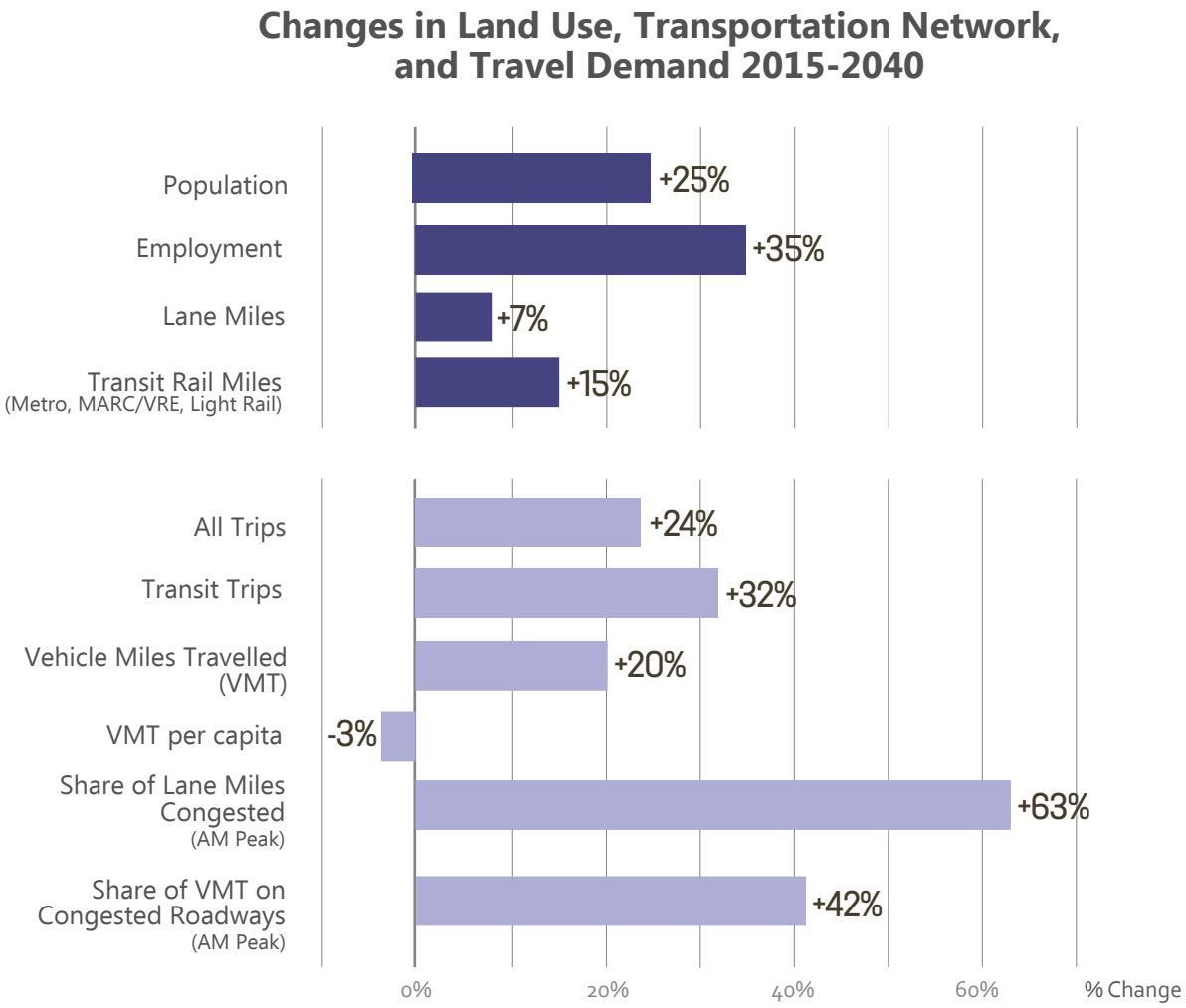
Employment is expected to grow fastest in the outer jurisdictions of Virginia, but the highest concentration of jobs will be in the District of Columbia, Fairfax County, VA, and Montgomery County, MD in 2040.

Jobs will continue to concentrate toward the western side of the region, but the majority of the new jobs are forecast to be in denser housing and job centers throughout all parts of the region.

** Population and Job Estimates come from the Round 8.3 cooperative forecast*



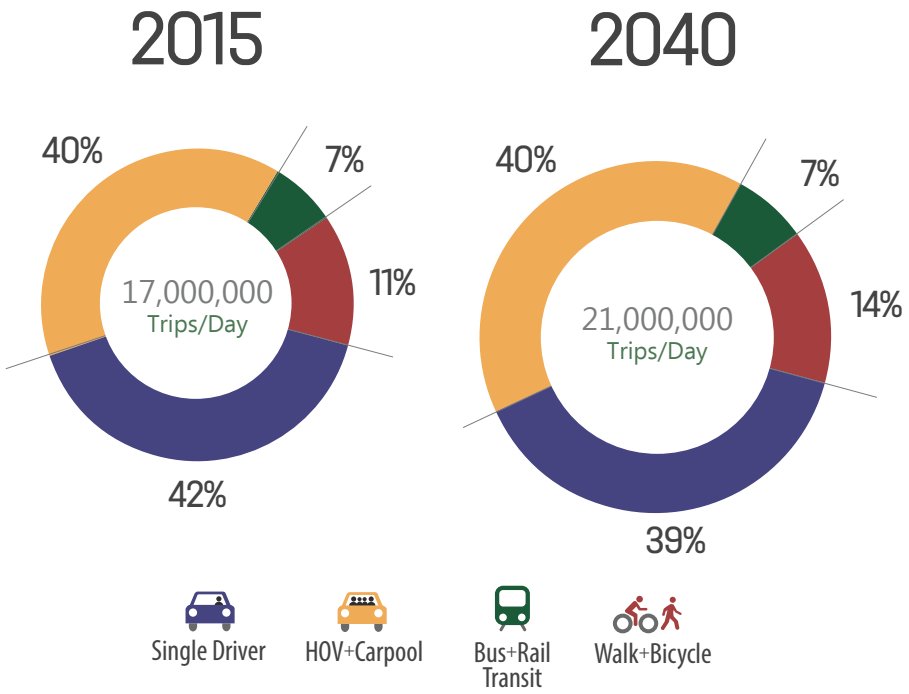
Travel Demand (2015 - 2040)



Region-wide the total number of trips taken is expected to increase by 24%, and transit trips are expected to rise faster than overall trips. The overall amount of driving in the region (VMT) is expected to grow by 20%, slightly less than population, which means VMT per capita is forecast to drop by 3%.

The increase in demand on the roadways is forecast to outpace the increase in supply, leading to a significant increase in congestion.

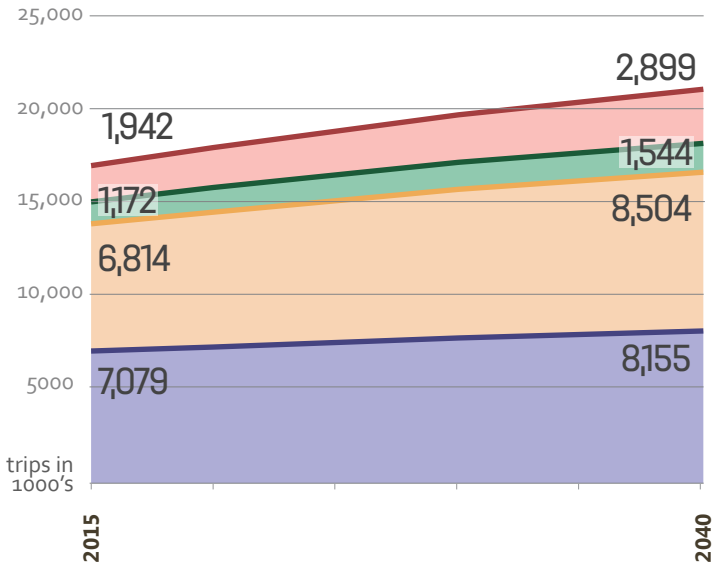
Daily Travel - Mode Share (2015 - 2040)



In 2040, 4 million more trips are forecast to be taken everyday using all modes on the region's transportations system.

By 2040, the share of trips made by drivers of single-occupant vehicles are expected to drop by a few percentage points, while the share of carpool trips and non-motorized vehicle trips are expected to increase slightly.

Daily Travel - Trips by Mode (2015 - 2040)

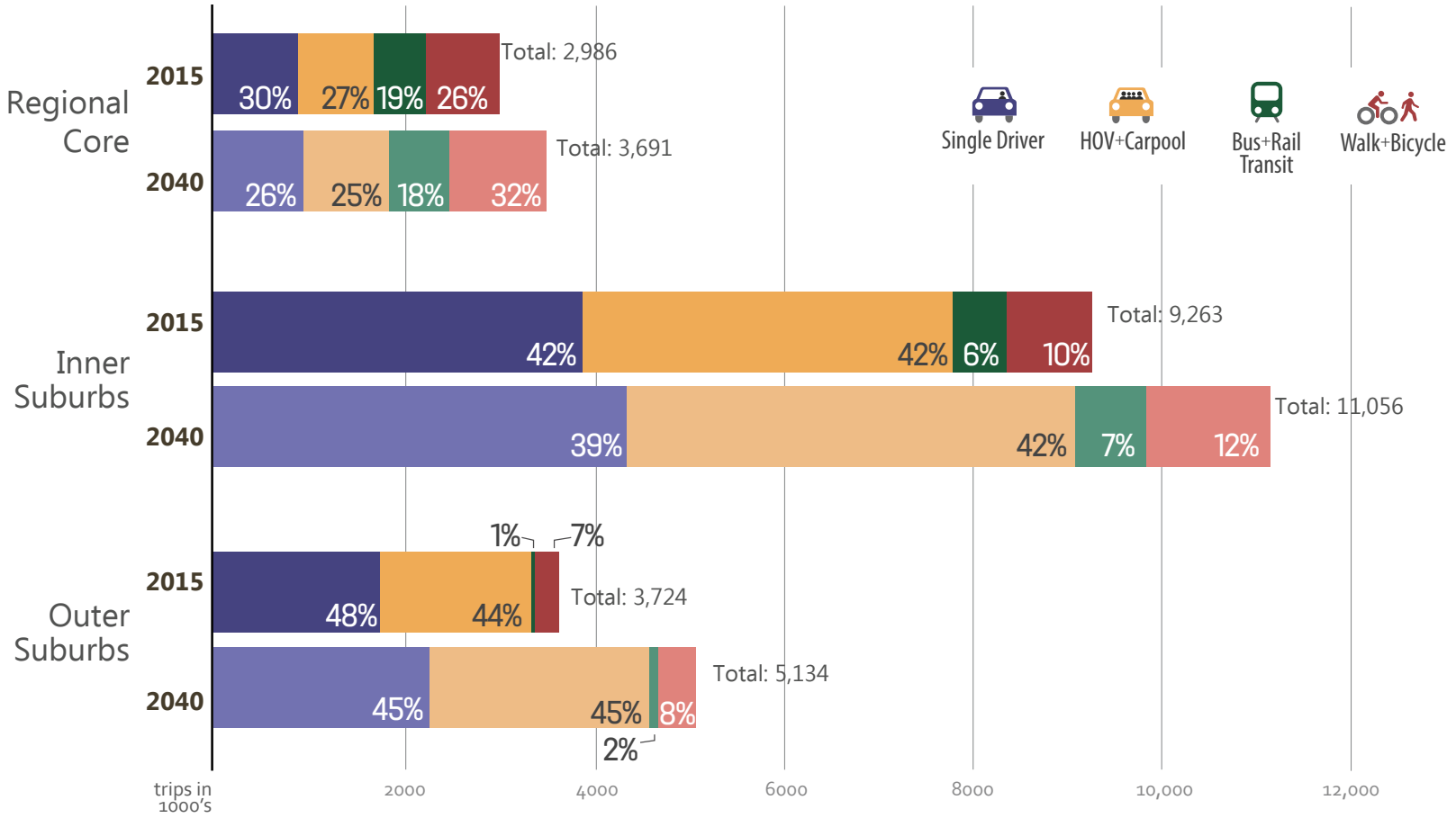


957,000 more trips	Walk+Bicycle	+49% From 2015
372,000 more trips	Transit	+32% From 2015
1,690,000 more trips	HOV+Carpool	+25% From 2015
1,076,000 more trips	Single Driver	+15% From 2015

Although mode share is not forecast to change significantly, the number of trips taken using each mode will rise substantially.

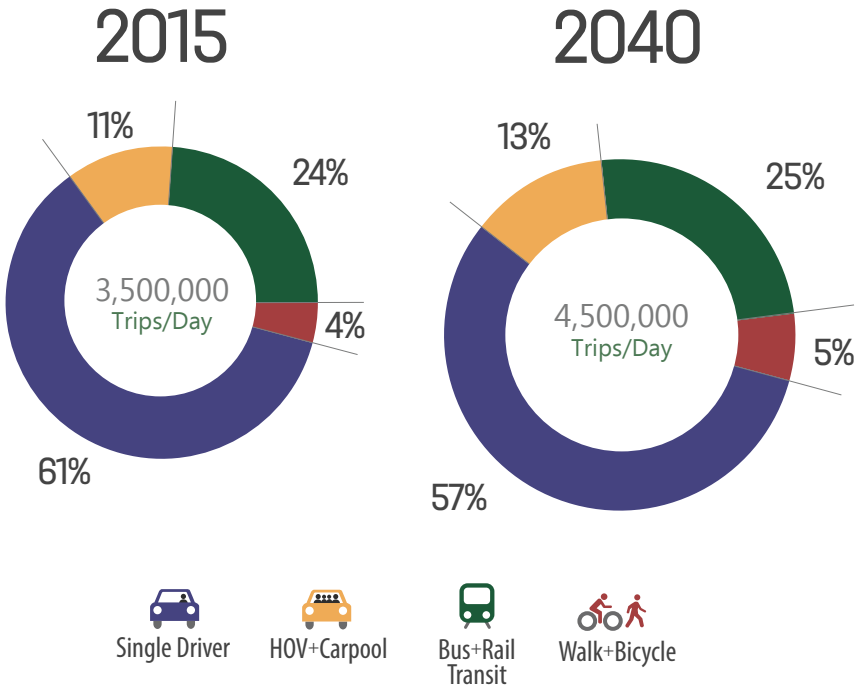
The number of single driver trips is expected to increase by 15%, which is slower than all other modes in the model, while carpooling is expected to increase by 25%. The transit system is forecast to accomodate 32% more trips, which is just over 370,000 new trips per day. And a nearly 1 million new non-motorzied trips are expected, which is a 49% increase from today.

Daily Travel - Mode Share by Core, Inner, & Outer suburbs



In the regional core, the share of single driver trips are expected to decrease in favor of more non-motorized trips. In the inner suburbs the share of single driver trips are expected to drop slightly while of transit and non-motorized trips increases slightly. In the outer suburbs, the share of single driver trips are expected to go down while transit, carpool, and non-motorized trips are expected to increase slightly.

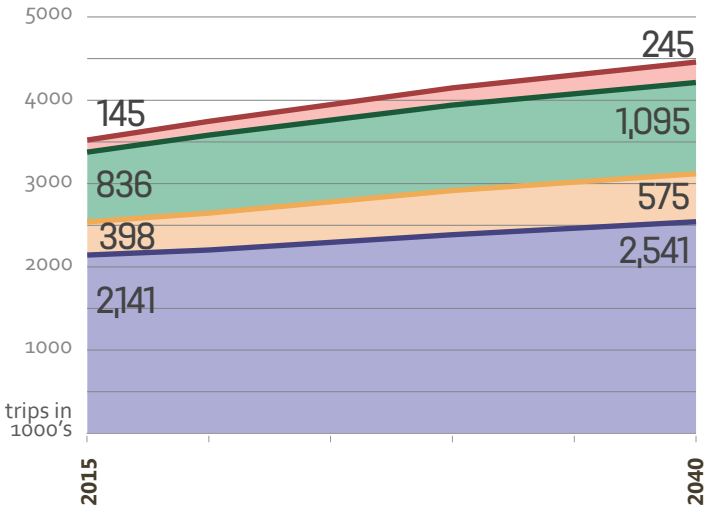
Commute Travel - Mode Share (2015 - 2040)



Population and job growth region-wide will lead to an increase of approxiately 1 million new commute trips. Commute trips are expected to account for 20% of all travel, but 40% of all vehicle miles travelled.

The share of work trips taken by single-occupant vehicles is expected to drop slightly, while carpool/HOV, bus and rail transti, and non-motorized trips are expected to increase slightly.

Commute Travel - Trips by Mode (2015 - 2040)

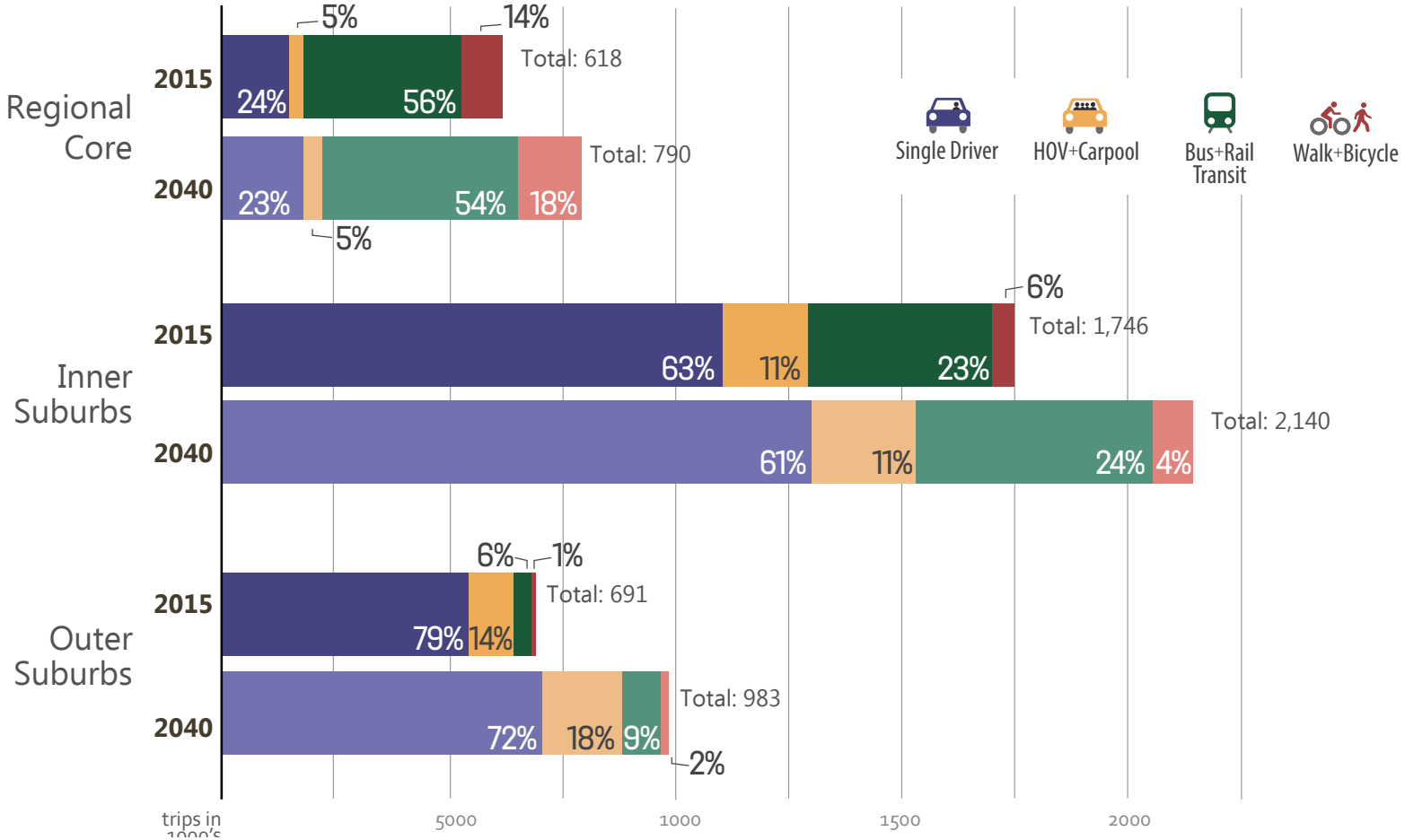


100,000 more trips	Walk+Bicycle	+69% From 2015
259,000 more trips	Transit	+31% From 2015
177,000 more trips	HOV+Carpool	+44% From 2015
400,000 more trips	Single Driver	+19% From 2015

Although commute mode share is also not forecast to change significantly, the number of trips taken using each mode will rise.

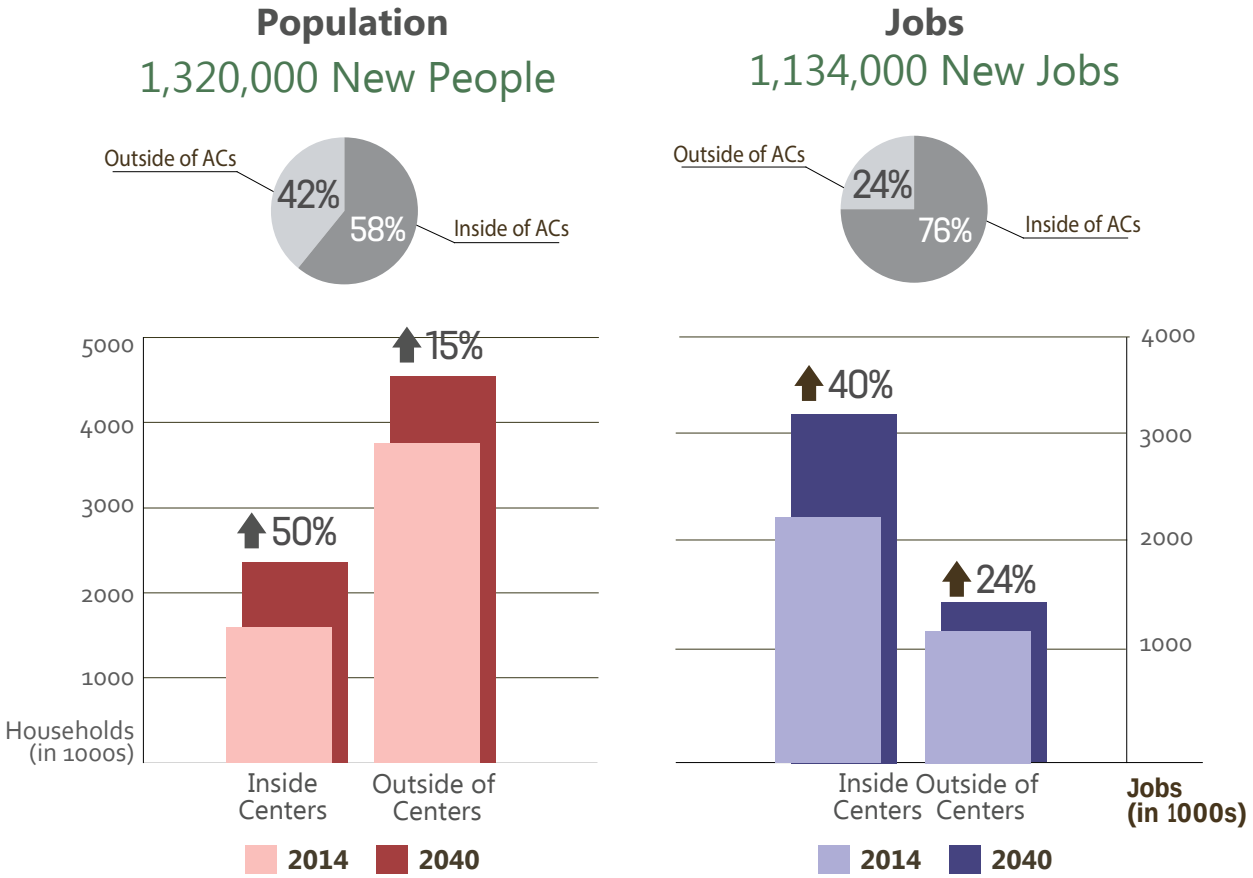
Single driver commute trips are expected to rise at the slowest rate (19%) of all modes modelled, followed by transit (31%), HOV/Carpool (44%), and walking/Biking (69%). Though commute mode share is only expected to go up by one percentage point, regional transit systems will accomodate more than 250,000 additional commute trips per day.

Commute Travel - Mode Share by Core, Inner, & Outer Suburbs



In the regional core the share of single driver trips is forecast to drop in favor of more walk and bike trips. In the inner suburbs the share of single driver trips is expected to drop slightly in favor of higher shares of transit and non-motorized trips. And in the outer suburbs, the share of single driver trips is expected to go down while the shares of transit and carpool trips are expected to increase. The increase in transit mode share is forecast to be greatest in the outer suburbs.

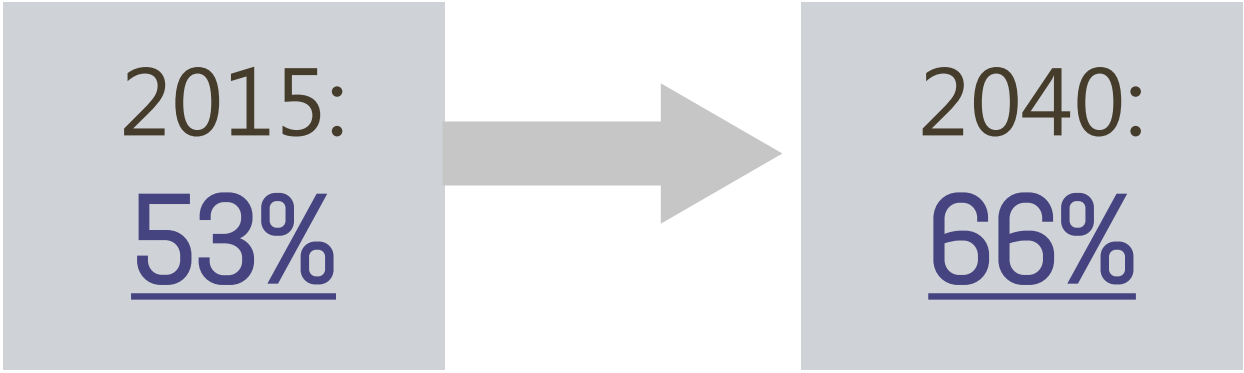
Growth in Activity Centers (2015-2040)



The majority of new jobs and population are forecast to be in dense housing and job centers refered to as Regional Activity Centers. Though the majority of the regional population will remain outide of Activity Centers in 2040, population is forecast to increase at a faster rate inside Activity Centers over the next 25 years. The majority of jobs today are located in Activity Centers, and this trend will continue in the future.

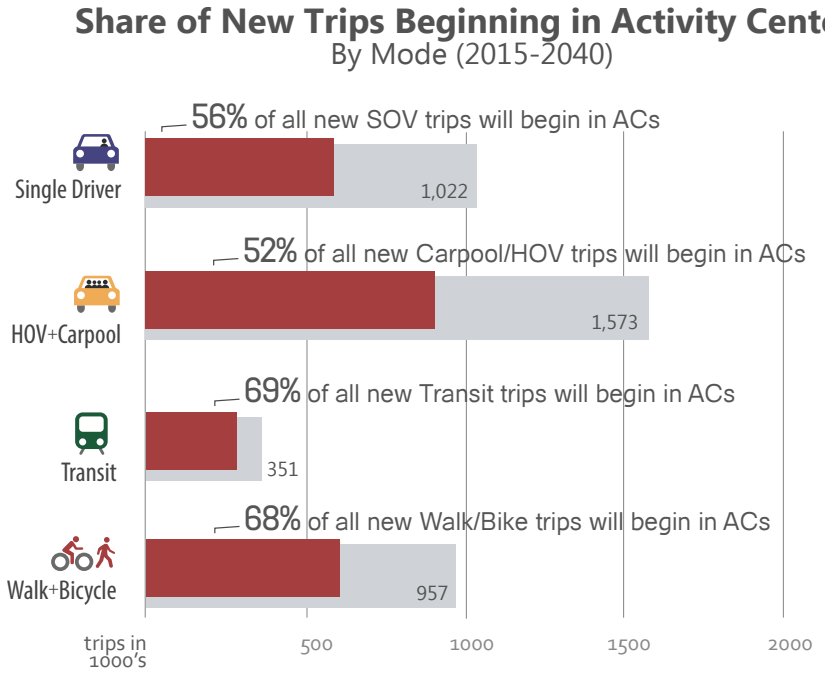
New Transit in Activity Centers (2015-2040)

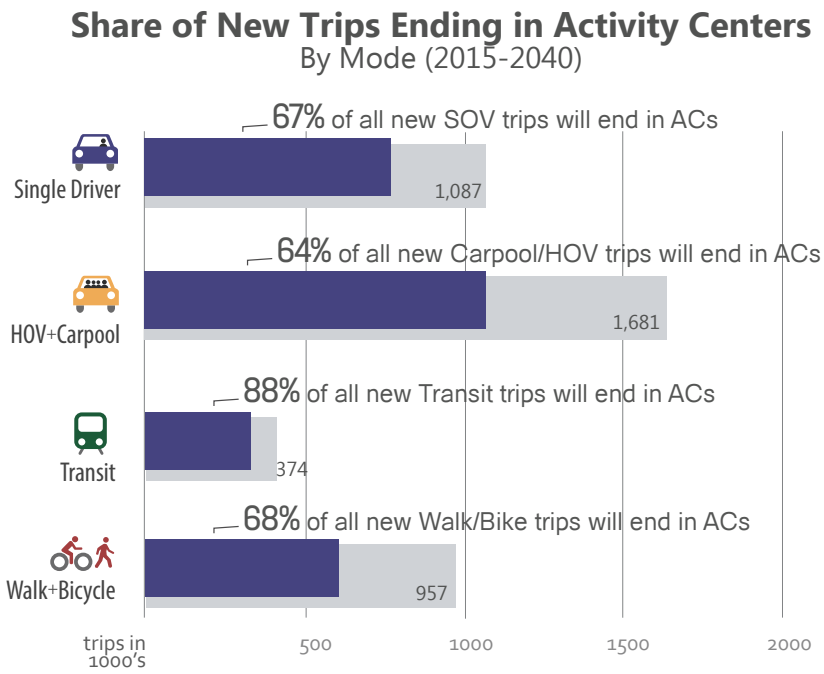
Activity Centers with High Capacity Transit



Most of the new transit projects included in the 2014 CLRP will serve Regional Activity Centers throughout the region. In 2040, 66% of Activity Centers are expected to be served by high capacity transit compared to 53% today.

New Trips in Activity Centers (2015 - 2040)

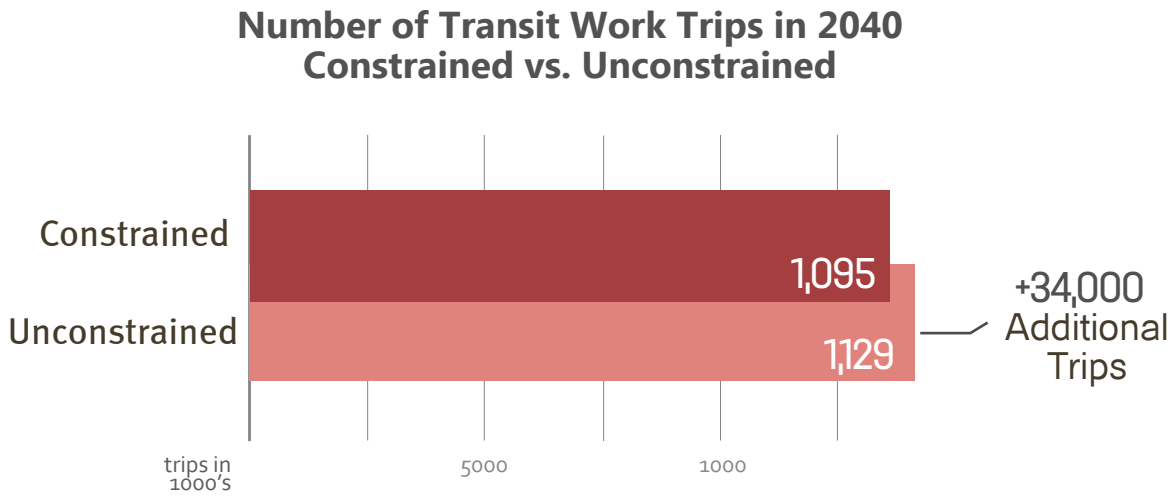




The majority of new trips on all modes are forecast to begin and end in Activity Centers, which are expeceted to be well served by transit and provide an environment that is friendly to walking and biking. Though 58% of the new population is expected in Activity Centers, 69% of new transit trips and 68% of new walk/bike trips are expected to begin in these places.

Since these places are forecast to be well served by transit and have a variety of destinations to travel to, 88% of all new transit trips are expected to end in Activity Centers.

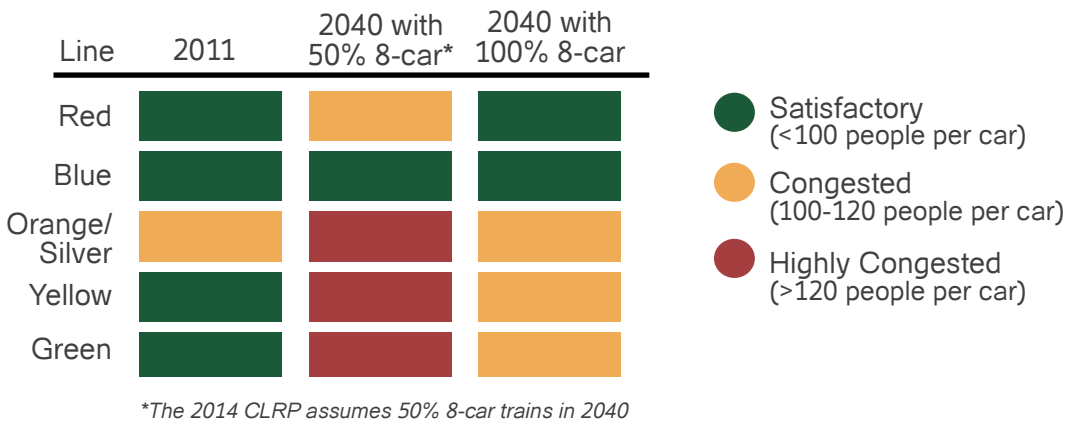
Unconstrained Transit (2015 - 2040)



To address the lack of identified funding for 8-car trains and core capacity station improvements, Metrorail ridership to or through the core area was constrained to 2020 levels.

When this constraint on Metrorail trips is lifted, there is an increase of 34,000 transit work trips in 2040. This brings the commute mode share for transit up slightly.

Transit Congestion (2011 - 2040)

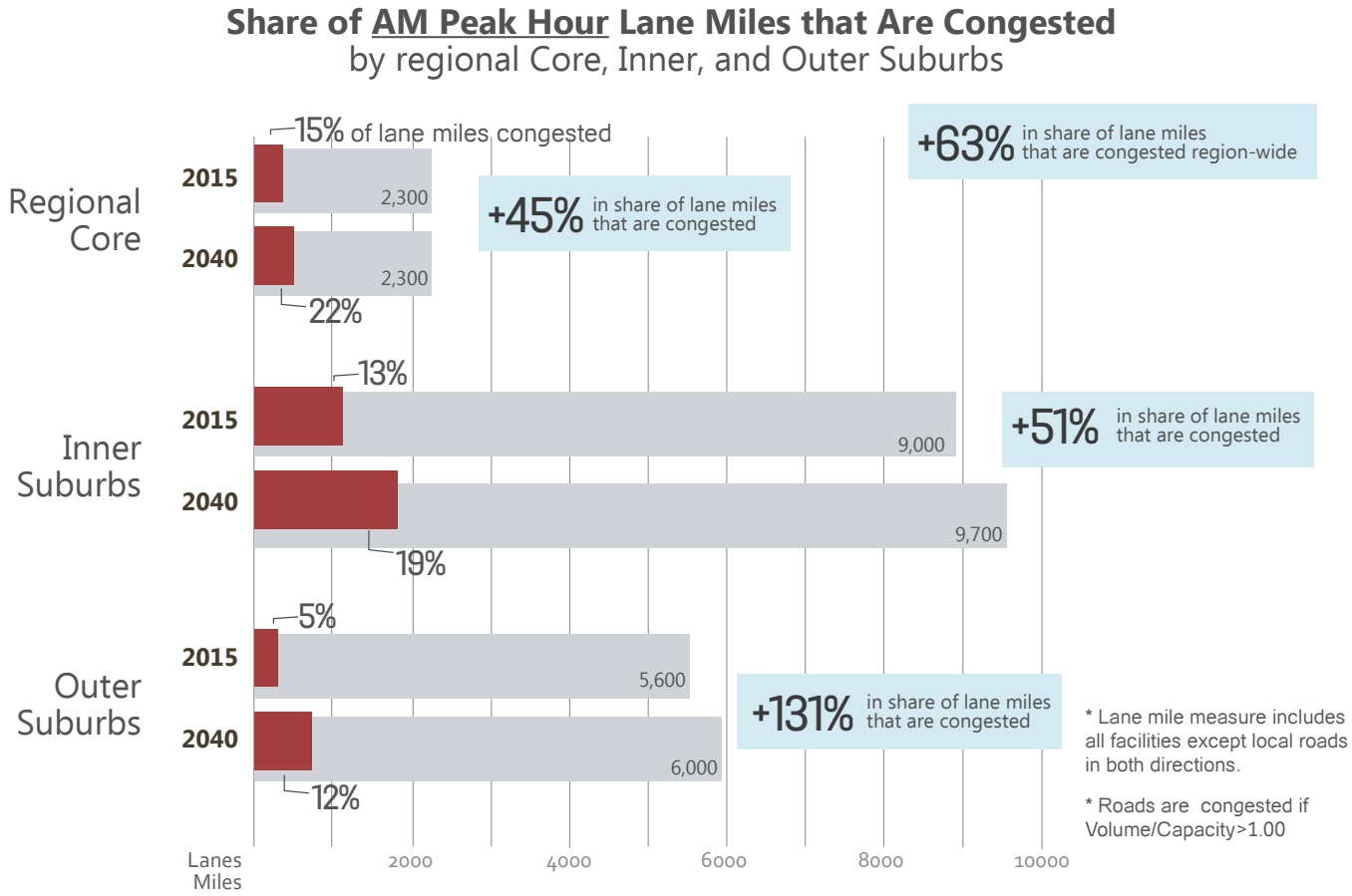


The 2014 CLRP assumes 50% 8-car trains in 2040

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

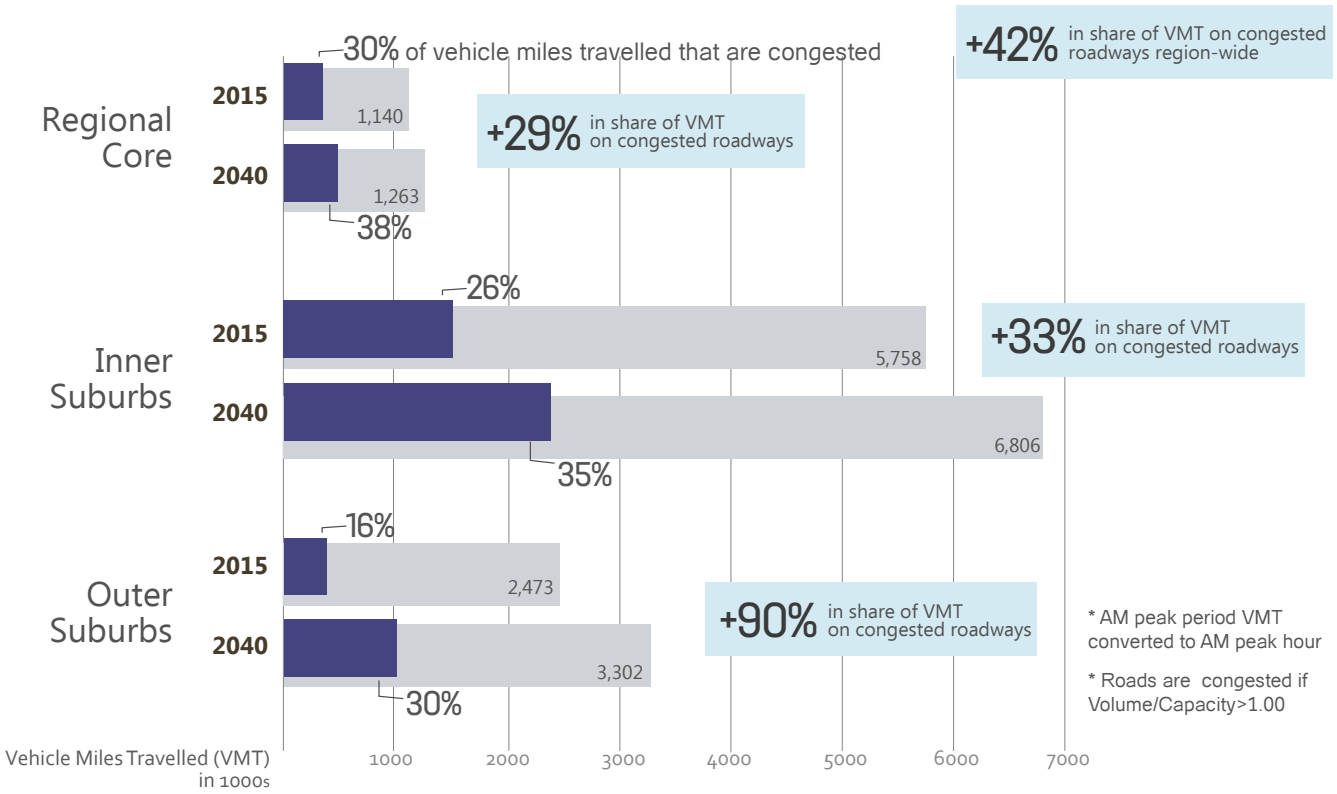
Without additional railcars beyond those currently funded, 4 out of 5 lines entering the core will become congested by 2040.

Roadway Congestion (2015 - 2040)



Overall, congested lane miles are a relatively small proportion of the total lane miles in the region both today and in 2040. However, the total number of congested lane miles is forecast to go up in all 3 sub-areas with the greatest expected increase in the inner suburbs. The share of lane miles that are congested is also expected to increase in all sub-areas, but the highest rate of increase is expected in the outer suburbs.

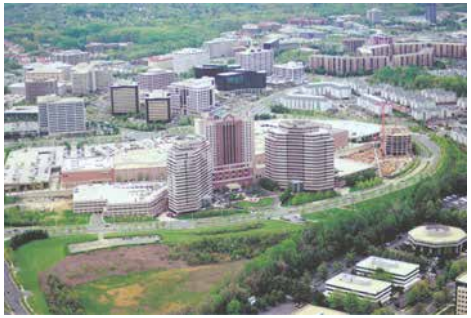
Roadway Congestion (2015 - 2040)



Though a relatively small share of lane miles are currently congested, a higher share of Vehicle Miles Travelled (VMT) is currently on congested roadways. This indicates that the roadways that are congested are some of the more heavily travelled in the region. In 2040, VMT on congested roadways is expected to increase in each sub-area as well as the share of VMT on congested roadways.

Accessibility to Jobs

What is Job Accessibility?



LOCATION OF JOBS

+

TRAVEL TIME
(BY AUTO OR TRANSIT)

=

ACCESSIBILITY

[NUMBER OF JOBS WITHIN 45 MINUTE COMMUTE]

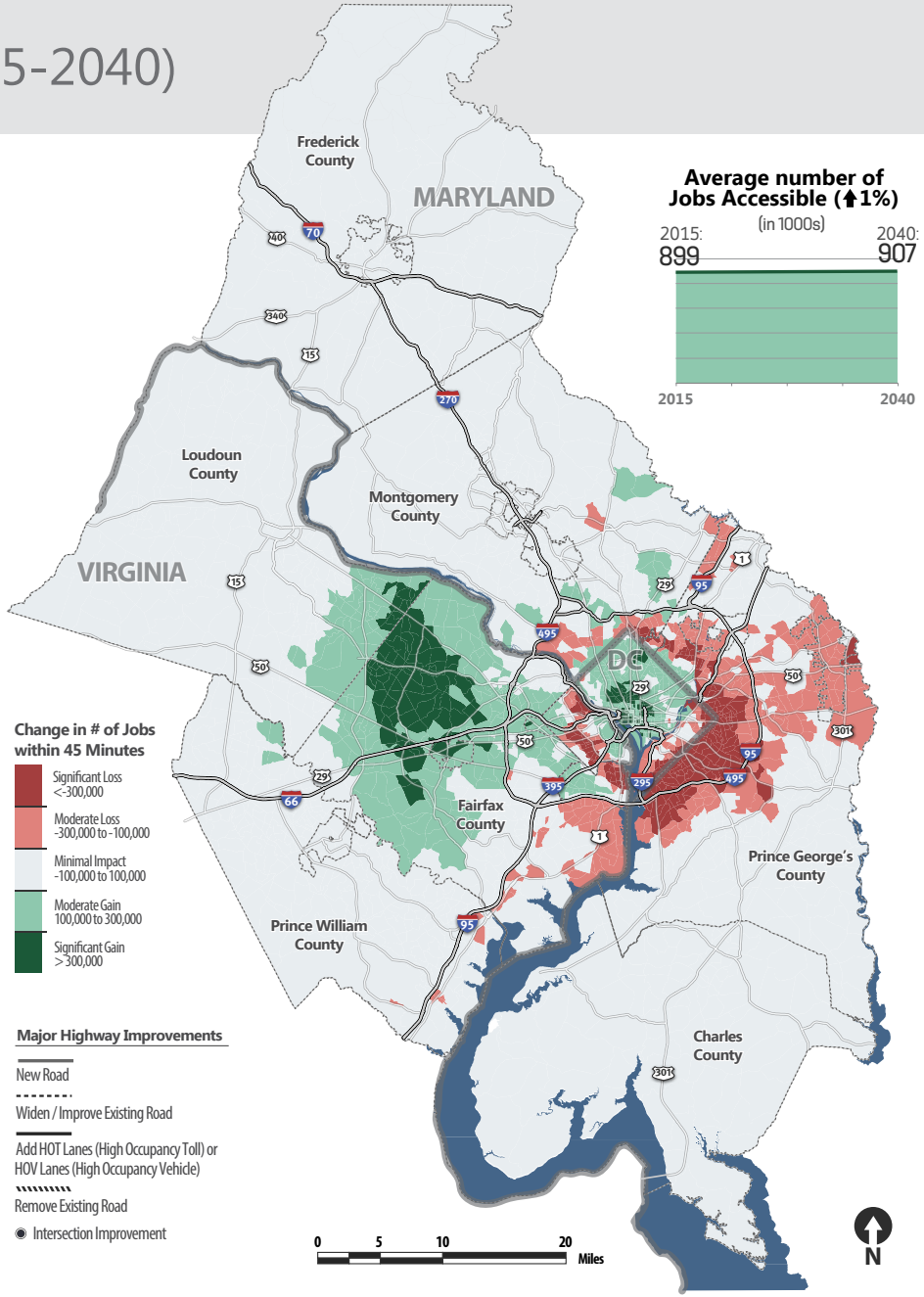
Jobs are considered to be accessible if they are within a 45 minute commute range

Accessibility to Jobs (2015-2040)

By Automobile

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

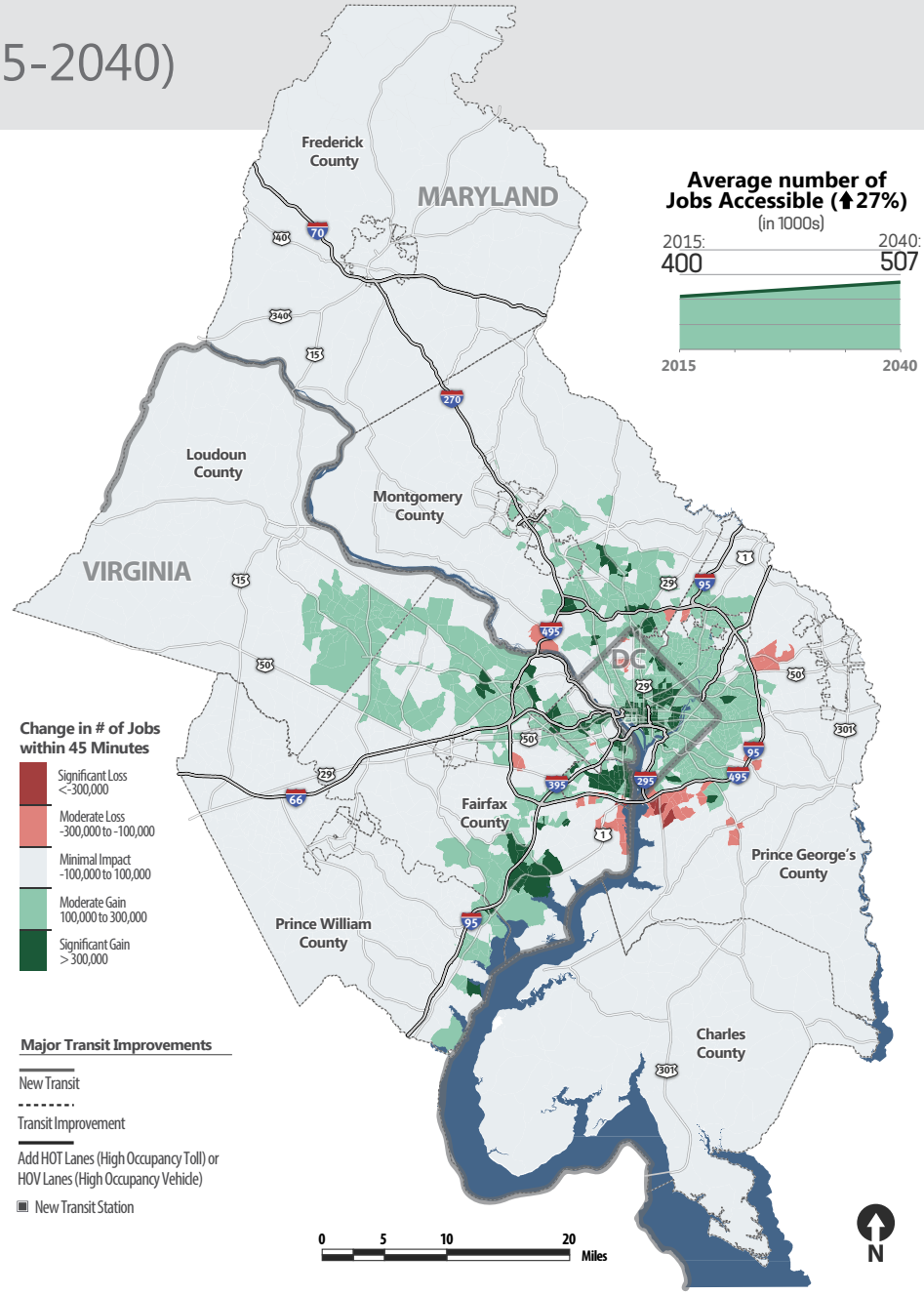
The greatest reductions in job accessibility are expected to be on the eastern side of the region, due to increases in congestion system-wide and a higher concentration of future jobs on the west side.



Accessibility to Jobs (2015-2040)

By Transit

Average accessibility by transit is forecast to increase, but will remain significantly lower than by automobile because transit does not reach all people or jobs in the region.

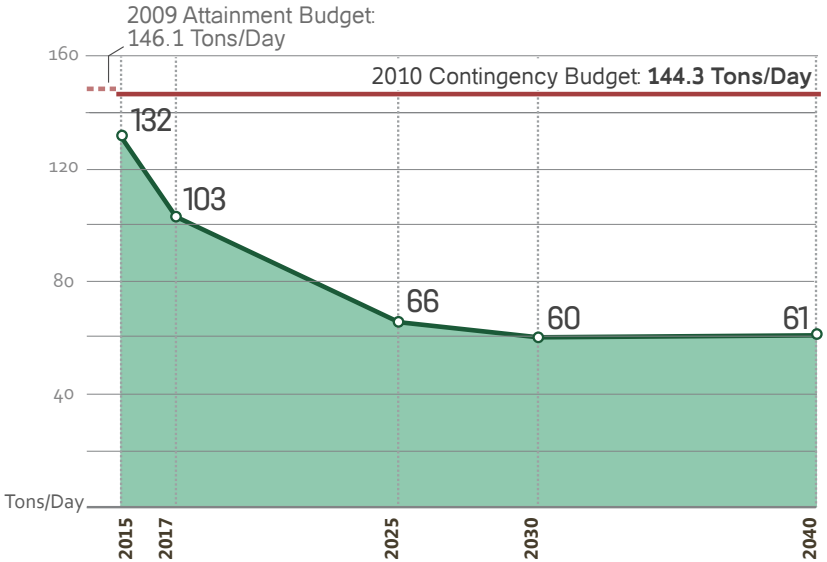


Air Quality (2015-2040)

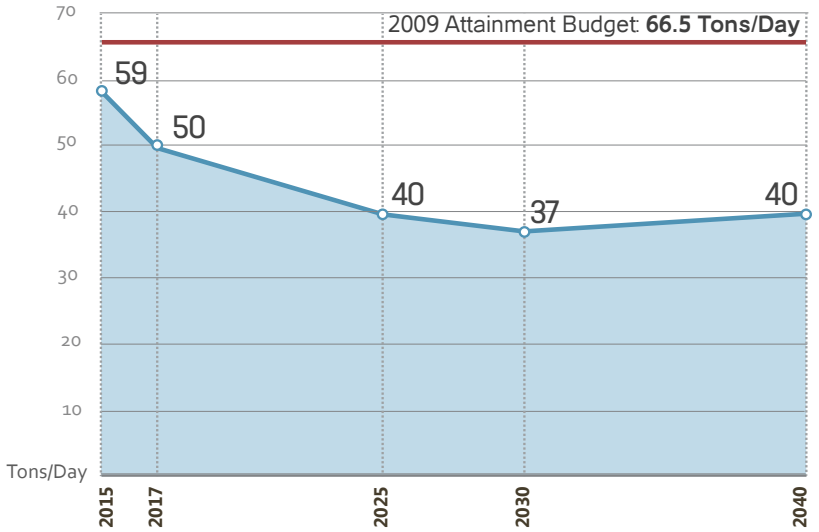
The CLRP shows substantial reductions in all main pollutants through 2020, with a very small uptick between 2030 and 2040.

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

Mobile Source NOx Emissions
(1997 PM2.5 NAAQS, 15 mg/m3)

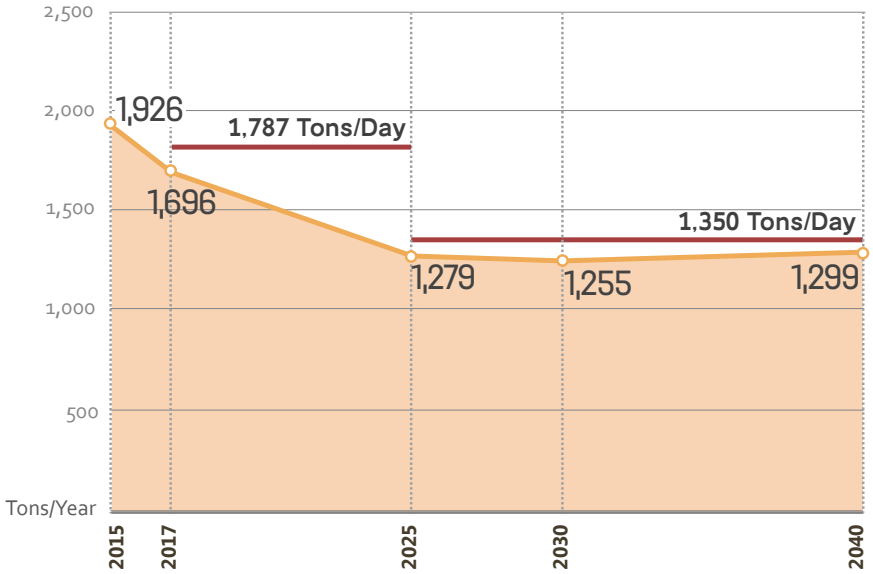


Ozone Season VOC Emissions
(1997 PM2.5 NAAQS, 15 mg/m3)

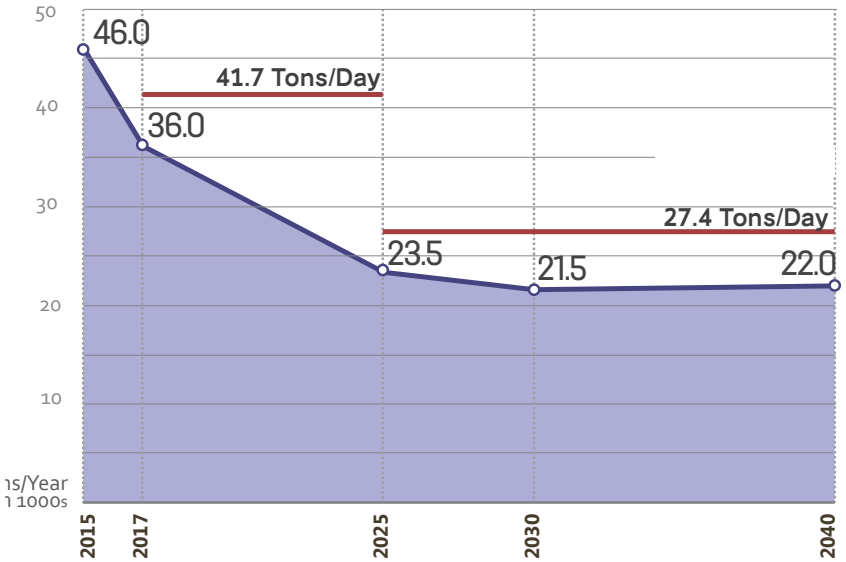


Air Quality (2015-2040)

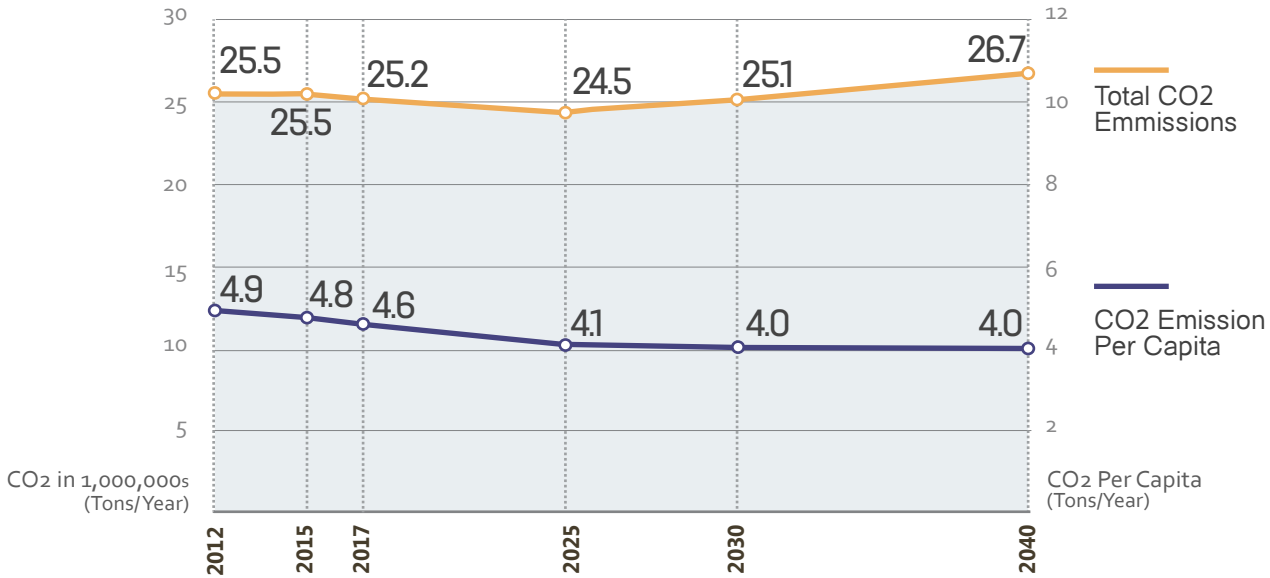
PM2.5 Direct Emissions
(1997 PM2.5 NAAQS, 15 mg/m3)



Precursor NOx Emissions
(1997 PM2.5 NAAQS, 15 mg/m3)



Carbon Dioxide (2015-2040)



*** The newest federal CAFE and TIER 3 vehicle standards are not included in this analysis, but will substantially reduce forecast emissions in the later years of this analysis.*

The COG climate change report of November 2008 set a goal of reducing the region's CO2 output to 80% below 2005 levels. To meet this goal, transportation related CO2 emissions would need to be reduced by 60% compared to 2005 levels by 2040.

While some small reductions in CO2 emissions in the short term are currently forecast, emissions are projected to increase after 2030. CO2 emissions per capita, however, are expected to drop by 20% between now and 2040.