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**Trends and Outlook for Transit Commuting in
the Washington Metropolitan Area**

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Abstract

Just one in seven commuters in the Washington, DC metropolitan area (WMA) commutes by public transit; this figure is expected to remain constant through 2040. Among current transit commuters in the WMA the most consistent trait is proximity to transit service, rather than income, age, vehicle ownership, or other factors. In the region's suburban areas, most transit commuters own vehicles but still choose to commute by transit. What are the implications of the current profile of transit commuters, and how do these relate to the region's future transportation situation and potential economic prosperity?

Introduction

The Metropolitan Washington Council of Governments (COG) reports that the Washington DC metropolitan area (WMA) will add more than one million additional jobs between 2010 and 2040¹. Since traffic congestion in the WMA is already among the worst in the United States, the region will need to make significant upgrades to its transportation network in order to accommodate this growth. Providing a network of public transit options that attracts and sustains ridership will be an essential component of the region's strategy.

The share of workers in the Washington metropolitan area (WMA) that commutes to work via public transit is 14 percent, a ratio that has remained relatively constant since 1990.² A recent study by the GMU Center for Regional Analysis³ forecasted that the transit commuting share would change little over the next 30 years, only reaching 15 percent by 2040. This paper examines the characteristics of transit commuters in the WMA and analyzes how existing commuting patterns can inform future decisions about investments in transit.

¹ According to MWCOC Round 8.2 Cooperative Forecasting, published July 25, 2013, available at <http://www.mwcog.org>

² Transit share in the WMA was reported as 13 percent in the 1990 Decennial Census.

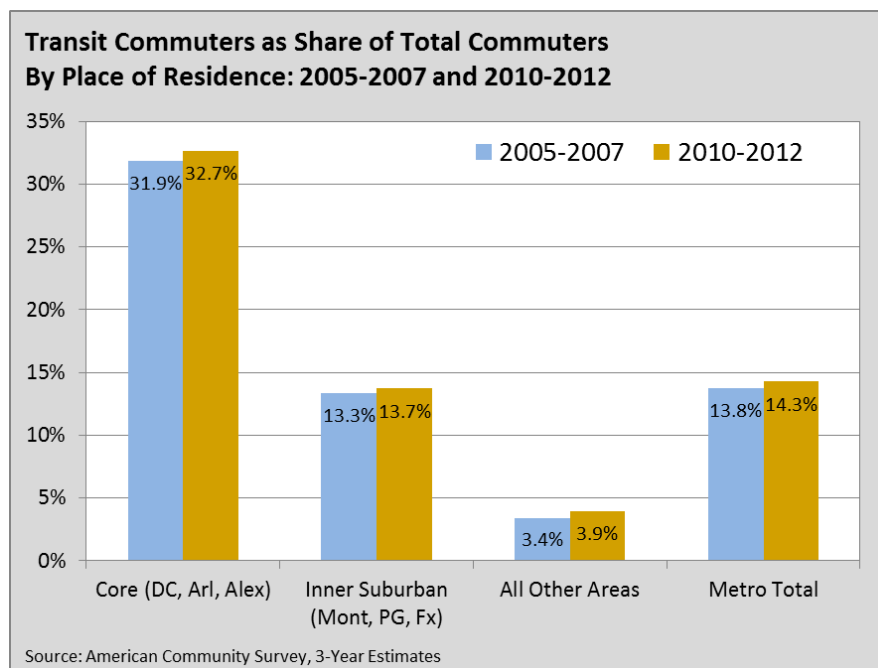
³ McClain, John, and Pisarski, Alan, "Connecting Transportation Investment and the Economy in Metropolitan Washington," published by CRA in October 2012, available at: http://cra.gmu.edu/pdfs/2030_Group_Report.pdf

Transit Commuting by Place of Residence

The current share of residents in the Washington, DC metropolitan area (WMA) that takes transit to work is 14.3 percent.⁴ The region's transit commuter share is up 0.5 percentage points from the 2005-2007 average of 13.8 percent. The share of residents using transit to travel to work varies greatly by where in the region people live. Among residents of the region's three central jurisdictions (the District of Columbia, Arlington County, and Alexandria) 32.7 percent use transit to go to work⁵. Transit usage is highest in DC, where 39 percent of residents commute via transit, compared with 27 percent in Arlington and 20 percent in Alexandria.

In the three "inner-ring" suburban counties of Fairfax, Montgomery, and Prince George's, 13.7 percent of residents commute by transit. Prince George's has the highest share of transit usage (18 percent) among this group, followed by Montgomery (16 percent) and Fairfax (nine percent). For the remainder of the Washington metro area, just 3.9 percent of residents commute by transit. The share of residents commuting by transit has increased slightly in all three sub-regional areas over the past five years.

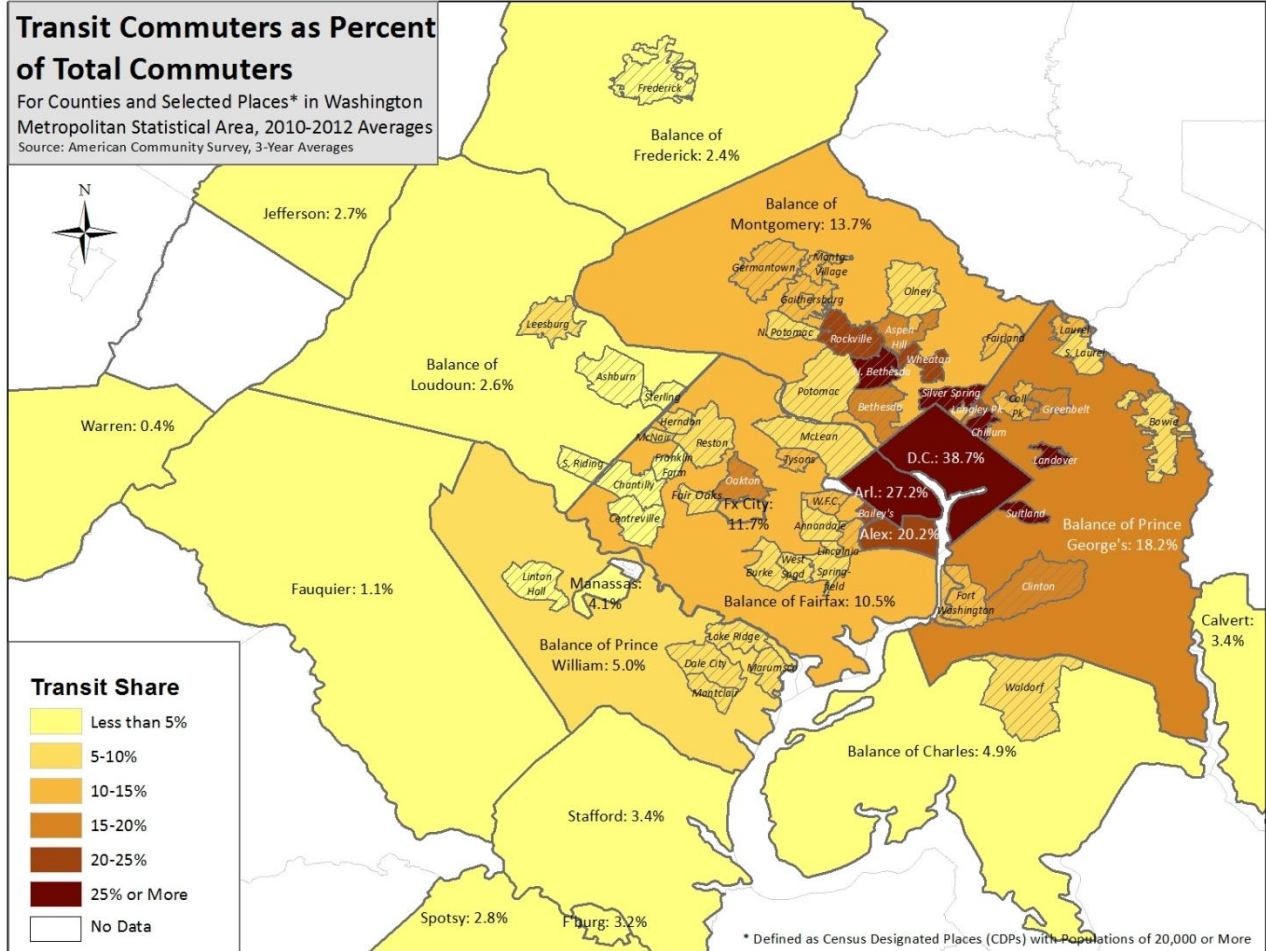
Figure 1



⁴ 3-year average for 2010-2012 as reported by the American Community Survey. The "2013 State of the Commute Survey" by the Metropolitan Washington Council of Governments (COG) reported that 17 percent of workers in the region commuted by transit. COG's region excludes several outlying jurisdictions with low transit shares, so it is to be expected that the transit commuting share for the entire WMA is somewhat below that of the COG region.

⁵ The TPB survey reported 34 percent for core counties and 15 percent for the inner ring counties.

Figure 2



There is significant variation in the usage of transit by commuters within many of the region's suburban counties. The American Community Survey reports this information for all counties, cities, and Census Designated Places (CDPs) with populations of 20,000 or greater.⁶ Figure 2 displays the shares of transit commuters for all such counties, cities, and CDPs in the regions.

Aside from the District of Columbia, Arlington, Alexandria, there are nine CDPs in the region in which at least 20 percent of residents commute to work by transit: seven of these are located in proximity to Metrorail stations in Montgomery or Prince George's Counties. These are: Chillum (29.4 percent), Silver Spring (28.3 percent), Suitland (27.8 percent), Landover (26.0 percent), North Bethesda (25.3 percent), Wheaton (21.4 percent), and Rockville (21.2 percent). The other two, Langley Park in Prince George's (20.6 percent) and Bailey's Crossroads in Fairfax (20.0 percent), are not located near Metrorail, but have high concentrations of transit-dependent residents; this issue is examined later in this paper.

⁶ No data were reported for Clarke County or the independent cities of Falls Church and Manassas Park, as each of these jurisdictions has fewer than 20,000 residents.

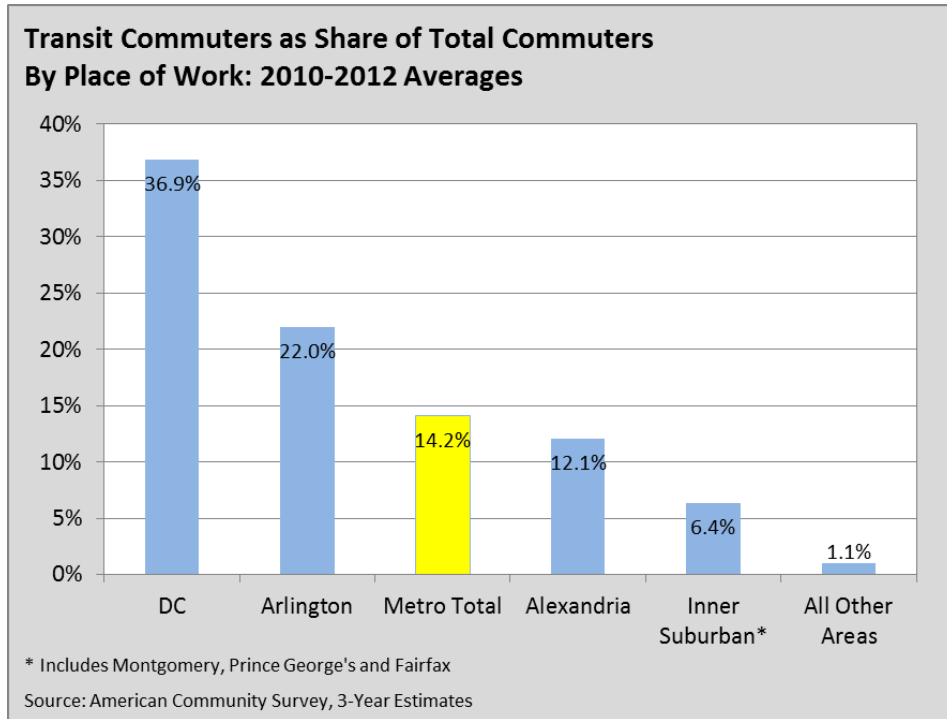
There are several CDPs in the inner-ring suburban counties where transit usage by commuters is significantly lower than for the remainder of their surrounding jurisdictions. Most of these areas are affluent enclaves located far from Metrorail stations, including: North Potomac, Olney, and Potomac, in Montgomery; Bowie and South Laurel in Prince George's; and Burke, Centreville, Chantilly, Franklin Farm, Herndon, and McLean in Fairfax County. This group also includes Annandale in Fairfax County which, despite being demographically similar to Bailey's Crossroads and Langley Park, only has a transit commuter share of 6.1 percent.

One outer suburban area with a particularly high concentration of transit commuters is Waldorf, in Charles County. In Waldorf, 9.1 percent of residents commute to work by transit, compared with just 4.9 percent of those who live elsewhere in Charles County.

Transit Commuting by Place of Work

The shares of commuters who travel to work via transit differ even more greatly by jurisdiction based on their places of work. Among those who work in the District of Columbia, 37 percent travel to their jobs via transit. At 22 percent, Arlington has the next highest share of commuters who take transit to work. People employed in these two jurisdictions account for 75 percent of all transit commuters in the WMA. Transit usage is far lower for people who work in other close-in areas: 12 percent those working in Alexandria use transit to access their workplaces, and fewer than 10 percent of people employed in the inner suburban areas use transit (this figure is only three percent in Fairfax County). Very few people who work outside of the core and inner-ring suburbs rely upon transit: just 1.1 percent of those working in the region's "outer" areas commute via transit.

Figure 3



Age of Commuters

Transit commuters in the Washington metro area tend to be younger than all commuters. The median age for transit commuters in the WMA is 38.1, which is nearly four years younger than the median age of 41.8 for all regional commuters. Based on median age, the youngest commuters in the region live in the core areas. Arlington, with a median age of 33.3 for transit commuters and 35.5 for all commuters, has the youngest commuting population, following closely by the District of Columbia and Alexandria. The only other counties with overall median commuter ages below the regional median are Loudoun (41.1) and Prince George's (41.6), but the median transit commuter ages are above the regional median even in these counties.

Table 1
Median Age of Commuters By Place of Residence, 2010-2012 Averages

Jurisdiction	By Place of Residence	
	All Commuters	Transit
DC District of Columbia	36.9	34.0
Calvert	45.0	47.7
Charles	42.8	42.3
MD Frederick	43.5	44.1
Montgomery	43.8	40.6
Prince George's	41.6	39.7
Arlington	35.5	33.3
Alexandria	38.3	36.4
Fairfax	43.2	42.3
Fauquier	45.6	51.9
VA Loudoun	41.8	39.4
Prince William	41.1	44.2
Spotsylvania	42.9	47.7
Stafford	43.1	47.7
Warren	44.4	52.1
WV Jefferson	42.6	44.2
Washington Metro Total	41.8	38.1

Source: American Community Survey, 3-Year Estimates, 2010-2012

The pattern of transit commuters being younger than other commuters holds true for the core and inner suburban jurisdictions, where transit commuters are younger than all commuters. However, in many outlying counties, particularly Calvert, Fauquier, Prince William, Stafford, Spotsylvania, and Warren, the median age for transit commuters is at least three years higher than for all commuters.

Median Earnings

For the entire Washington metro area, based on the place of residence, the median earnings level for transit commuters (\$50,203) is virtually equal to median earnings all commuters (\$50,288). There are wide variations in median earnings by jurisdiction within the region, though. The median earnings by place of residence range from \$62,510 in Arlington County to \$41,447 in Prince George's County. Median earnings by place of work are substantially higher in core areas than in outlying areas. The median income for those working in the District of Columbia (\$64,498) and Arlington (\$65,016) is more than 80 percent above the median earnings for those working in Prince William (\$35,625).

Table 2
Median Earnings for Commuters, 2010-2012 Averages
Major Jurisdictions and Washington Metro Total

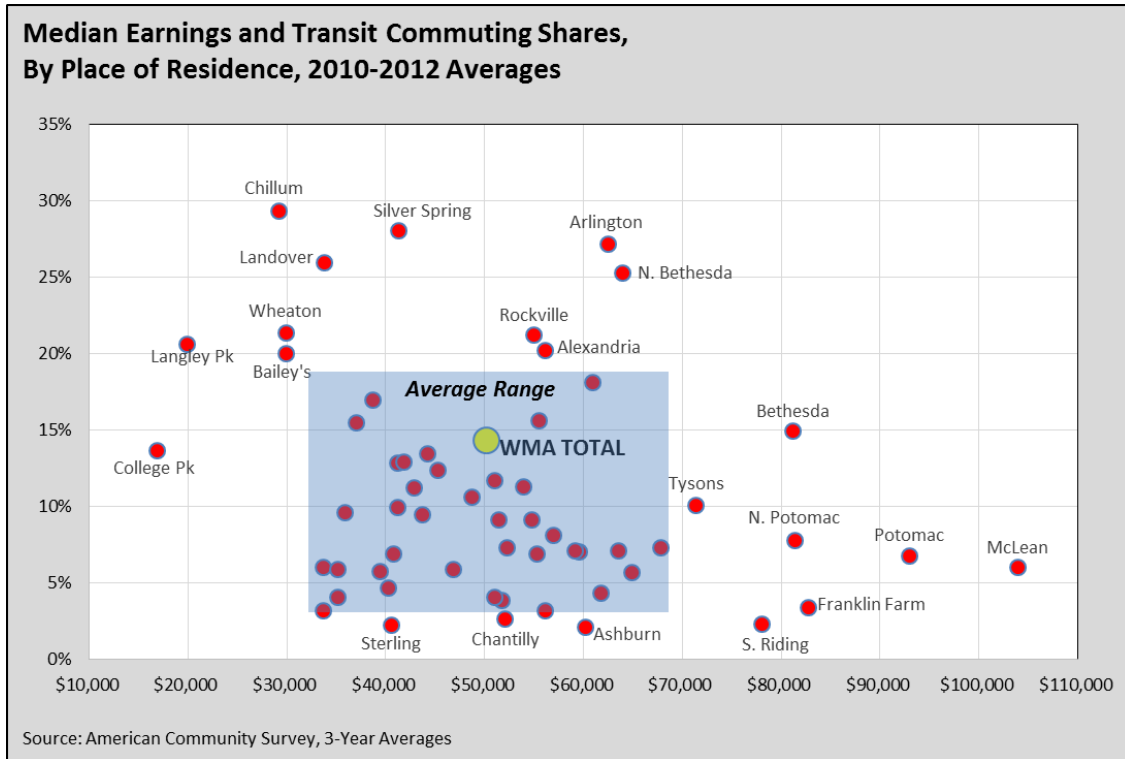
Jurisdiction	By Place of Residence		By Place of Work	
	All Commuters	Transit	All Commuters	Transit
District of Columbia	\$51,469	\$45,771	\$64,498	\$61,418
Montgomery	\$51,817	\$52,426	\$49,344	\$30,181
Prince George's	\$41,447	\$36,747	\$42,426	\$21,313
Arlington	\$62,510	\$60,640	\$65,016	\$63,017
Alexandria	\$56,080	\$52,592	\$52,604	\$38,043
Fairfax	\$55,522	\$66,265	\$55,239	\$24,927
Loudoun	\$60,802	\$82,797	\$43,459	\$15,993
Prince William	\$47,474	\$70,743	\$35,625	\$14,702
Washington Metro Total	\$50,288	\$50,203	\$51,152	\$51,637

Source: American Community Survey, 3-Year Estimates, 2010-2012

The income levels of commuters who ride transit to work vary greatly by location. The median earnings for transit commuters living in the District of Columbia, Arlington, Alexandria, and Prince George's are lower than the median income levels for all commuters in those jurisdictions. Conversely, the median earnings of transit commuters living in Fairfax, Prince William and Loudoun are all much higher than the median earnings of all commuters from those counties.

The earnings profile based on where people work is very different from the place of residence profile. While commuters who take transit to jobs in the District of Columbia and Arlington have similar earnings to all who commute to jobs in those locations, people who take transit to jobs in suburban areas earn much less than other commuters. The median earnings for commuters taking transit to jobs in Fairfax, Loudoun, Prince George's, or Prince William earn less than half as much as all workers in those areas.

Figure 4



Most of the region's Census Designated Places (CDPs) fall within a middle range in terms of earnings and transit usage, but some patterns do emerge among the outliers. Many of the individual places with above average transit commuting percentages have very low median incomes. Four places with both low median earnings and locations near Metrorail stations have some of the highest transit commuting percentages: Chillum, Landover, Silver Spring, and Wheaton. As discussed earlier, both Langley Park and Bailey's Crossroads have high transit commuting percentages despite not being located adjacent to Metrorail—their low earnings may partially explain this fact, but the high concentration of residents with no vehicles at home likely plays a role as well (see Figure 9). There are several higher-earning areas with high transit usage percentages, all of which are located around Metrorail stations: Arlington, North Bethesda, Rockville, Alexandria, and Bethesda.

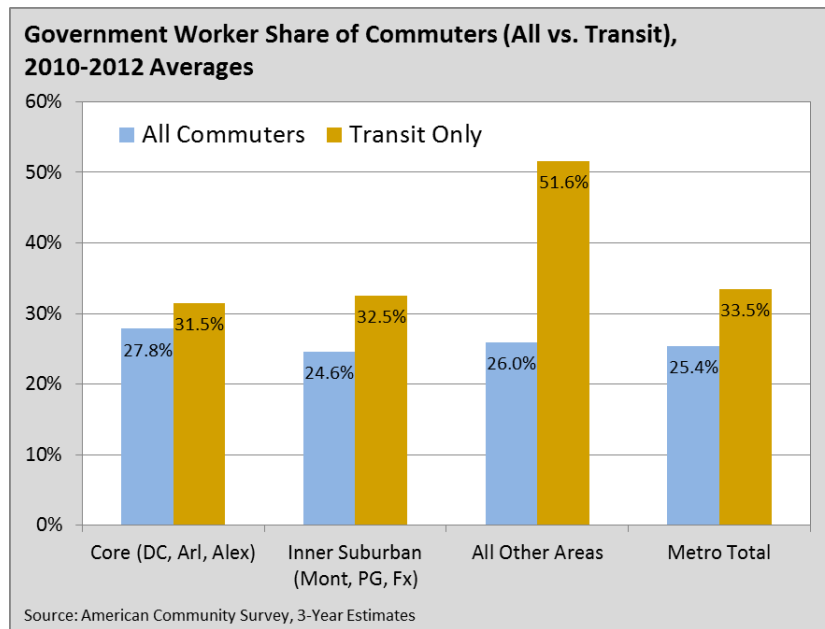
Aside from Bethesda the places with the highest median earnings in the region (McLean, Potomac, Franklin Farm, North Potomac, and South Riding) all have very low transit commuter percentages, but all are located several miles from rail transit. Some of the lowest transit commuter shares are in places that are far from rail transit but have modest median income levels: Sterling, Chantilly, and Ashburn. One unique situation is College Park, which has a moderate transit commuter share despite very low median earnings and proximity to transit—this is likely explained by its high concentration of college students, many of whom have low-paying, part-time jobs in proximity to the University of Maryland campus.

These patterns point to a bifurcated relationship between transit commuting and earnings in many suburban areas. Suburban residents who take transit to jobs in the District of Columbia or Arlington tend to be high earners who choose to use transit to access better employment opportunities. Conversely, those who take transit to jobs in suburban locations tend to be lower-wage workers who, in many cases, take transit out of necessity—this issue is explored later in this paper.

Influence of Government Workers

The American Community Survey tracks commuter data based on whether or not workers are government or private sector employees, though it does not separate Federal from other government employees. Among all workers who live in the Washington metro area, 25.4 percent are government employees, but 33.5 of transit commuters work for a governmental entity.

Figure 5

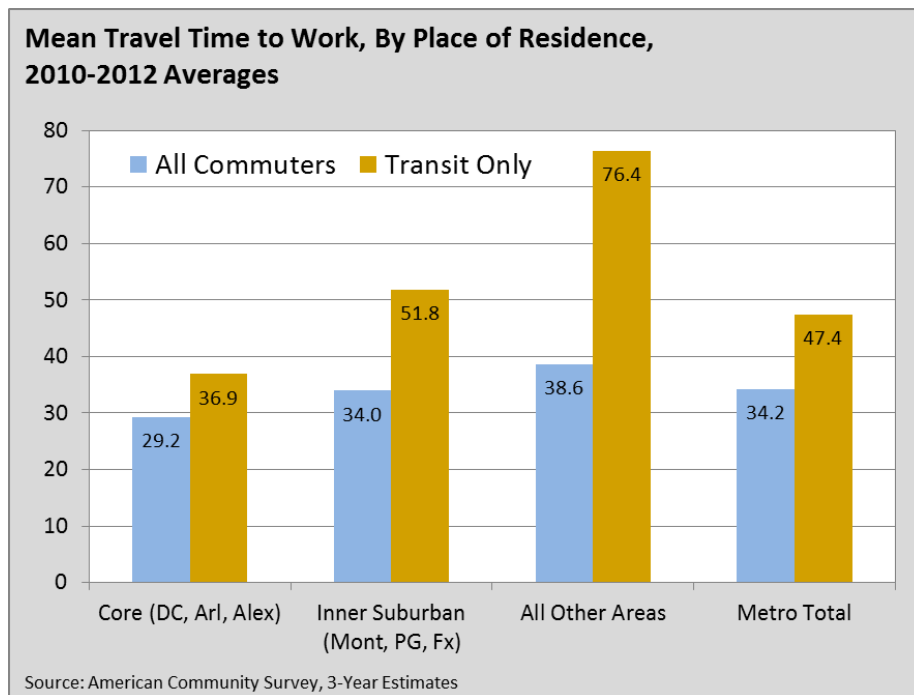


The further that transit commuters in the WMA live from downtown Washington, the more likely they are to be government employees. For residents of the District of Columbia, Arlington, or Alexandria, transit commuters are only marginally more likely to be government workers than non-transit commuters: 31.5 percent of transit commuters from those locations are government employees, compared with 27.8 percent of all commuters, a gap of 3.7 percentage points. The gap is slightly wider in the inner suburban counties (Fairfax, Montgomery, and Prince George’s) at 7.9 percent. For the outer suburban areas, though, 51.6 percent of all transit commuters are government employees, compared with just 26.0 percent of all commuters.

Length of Commute

Transit commuters in the Washington metro are likely to have longer trips to work than all other commuters. The mean travel time to work for transit commuters in the WMA is 47.4 minutes, which is 39 percent longer than the mean travel time of all WMA commuters (34.2 minutes). Mean commuting times are longer in outlying areas than in the core of the region. The mean commuting time for the three core jurisdictions (DC, Arlington, Alexandria) is 29.2 minutes, compared with 34.0 minutes in the inner suburbs, and 38.6 minutes in all other areas. The counties with the highest mean commuting times are Charles, MD (42.1 minutes), Warren, VA (41.3 minutes), Fauquier, VA (40.5 minutes), and Jefferson, WV (40.5 minutes).

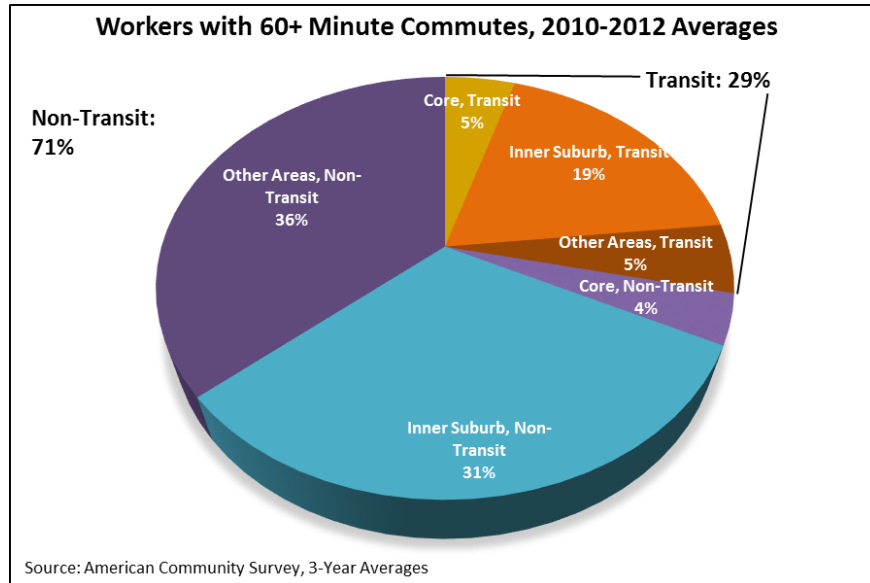
Figure 6



The difference in mean travel time for transit commuters versus all commuters is far more pronounced in the region's outlying areas than in its core. Transit commuters in the core jurisdictions have an average commute length that is 7.7 minutes longer than all commuters. By comparison the differences between the lengths of transit and all commutes are 17.8 minutes for inner suburban residents and 37.8 minutes for outlying residents.

While transit commuters average longer commutes than other commuters, there are far more non-transit commuters whose daily trips average 60 minutes or more than transit commuters, particularly in outlying areas. This disparity is because there are simply so many more non-transit commuters than transit commuters in outlying jurisdictions. There are about 505,000 commuters in the WMA who have daily commutes in excess of 60 minutes, of whom 361,000 (71 percent) do not use public transit.

Figure 7

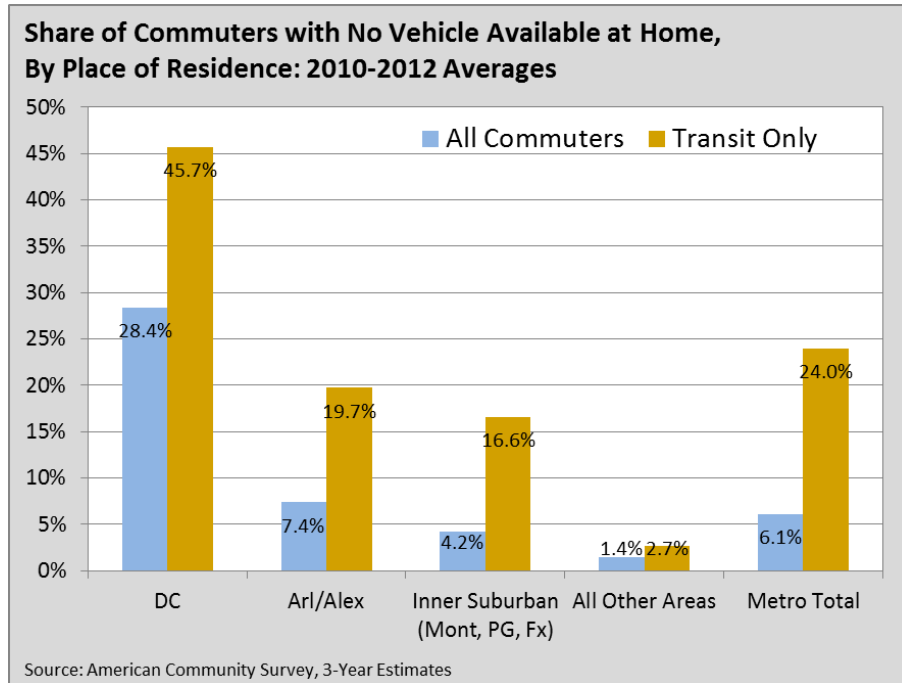


Though more transit riders than non-transit commuters in the region's core area have 60+ minute commutes, there are comparatively few commuters in the core with such long commutes. About two-thirds of the region's transit commuters with 60+ minute commutes live in Fairfax, Montgomery, or Prince George's, though far more non-transit commuters in these counties have commutes in excess of 60 minutes. Among the 210,000 commuters in outlying areas of the region with 60+ minute commutes, 87 percent are non-transit commuters.

Availability of Vehicles

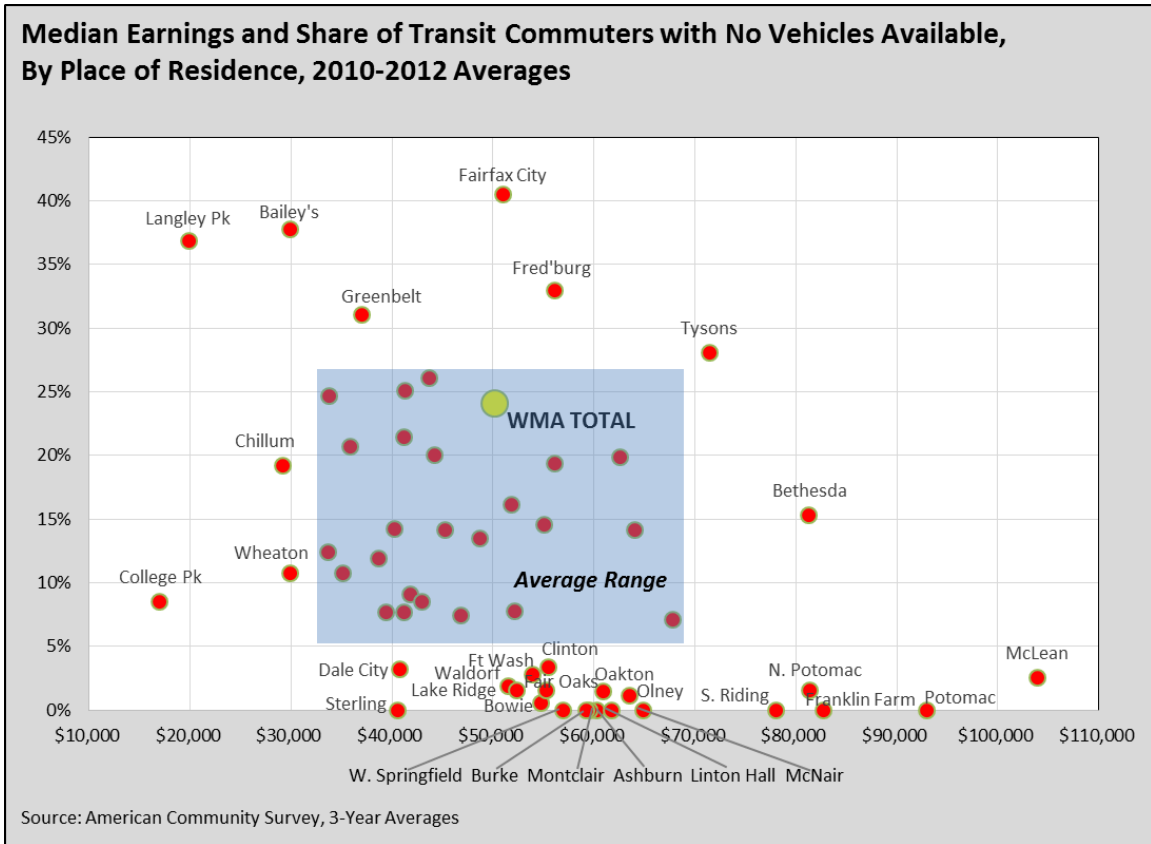
Among all WMA commuters, only 6.1 percent have no vehicles (i.e., automobiles) available to them, but 24.0 percent of transit commuters do not have a vehicle and are therefore dependent on transit or other forms of transportation. More than a quarter (28.4 percent) of working residents of the District of Columbia have no vehicles available at home, compared with just 7.4 percent in the other core jurisdictions (Arlington and Alexandria), 4.2 percent in the inner suburbs, and 1.4 percent in the outlying areas.

Figure 8



Transit commuters living in the core and inner suburban areas are far more likely to not have any vehicles available to them than are non-transit commuters, and are thus depended upon public transportation. In the District of Columbia nearly half (45.7 percent) of transit commutes do not have a vehicle. While the shares of transit commuters with no vehicles available are lower in Arlington and Alexandria (19.7 percent) and the inner suburban counties (16.6 percent), the percentages of commuters with no vehicles available are far higher in these locations for transit commuters than for others. Still, the fact that more than 80 percent of core and inner suburban transit commuters have a vehicle at home demonstrates that a very high percentage of these commuters use transit as a matter of choice, not necessity. In the region's outlying counties less than three percent of transit commuters have no vehicles at home: virtually no commuters in these areas are transit dependent.

Figure 9



In 17 of the region’s 55 major CDPs fewer than five percent of transit commuters had no vehicle available at home. While these low-dependency locations includes many affluent areas such as McLean, Potomac, Franklin Farm, North Potomac, and South Riding, it also includes several moderate-income places located reasonably close to the Beltway (e.g., Olney, Fair Oaks, Bowie, West Springfield, and Burke) and a number of lower-earning—but outlying—places like Sterling, Dale City, Waldorf, and Lake Ridge. It also includes some areas with reasonably high shares of transit commuters: Oakton (18.1 percent of commuters use transit), Clinton (15.7 percent), and Fort Washington (11.3 percent).

The CDPs with the highest concentrations of transit dependency among transit commuters include Langley Park and Bailey’s Crossroads which, as discussed above, have high shares of transit commuting in spite of not being directly adjacent to Metrorail stations. In both of these places about 37 percent of transit commuters do not have vehicles available at home and median earnings are well below the regional average. Other places with low median earnings and high transit dependency include Greenbelt, Chillum, and Wheaton. Bethesda and Tysons Corner stand out as places with high median earnings but relatively high rates of transit commuters with no vehicles at home.

Two places that stand out for having high rates of transit commuters with no vehicles, Fairfax City and Fredericksburg, may be skewed by their concentrations of college students from George Mason University and the University of Mary Washington, respectively.

Key Findings

- About one in seven commuters in the Washington metro area (WMA) uses public transit to travel to work each day; this ratio has remained relatively constant since 1990.
- Transit usage varies greatly by place of residence. About one-third of residents of the region's core (District of Columbia, Arlington, or Alexandria) commutes by transit, compared with one in seven residents of inner suburban areas (Fairfax, Montgomery, Prince George's), and just one in 25 residents of outer suburban areas.
- Most suburban areas with high percentages of transit commuters are areas located in proximity to Metrorail stations. Two exceptions are Langley Park (Prince George's County) and Bailey's Crossroads (Fairfax County), which both have low median incomes and high concentrations of residents who do not own vehicles.
- Three quarters of transit commuters in the region work in either the District of Columbia or Arlington. Fewer than 10 percent of people who work in Montgomery, Prince George's or Fairfax counties commutes by transit, and only one percent of people who work in outer suburban areas gets to work via transit.
- The median age of transit commuters in the WMA is about four years younger than for all commuters. This trend holds for residents of the core and inner suburban jurisdictions, but transit commuters who live in outlying counties tend to be older than other commuters from those areas.
- The median earnings levels for transit commuters and all commuters in the WMA are virtually equal. Transit commuters in the core area earn less than non-transit commuters; this is balanced out by higher earnings among transit commuters living in outlying areas.
- The likelihood that WMA residents commute by transit is largely a function of proximity to Metrorail, rather than income. Areas with high transit usage include both affluent areas like Arlington and Bethesda and lower-income areas such as Chillum, Landover, and Wheaton. Conversely, transit usage is low in areas located far from Metrorail stations, whether they are high-income (Potomac, McLean, Franklin Farm) or lower-income (Sterling, Manassas)
- Government employees are more likely than private sector employees to commute by transit. This trend is strongest in outlying counties, where more than half of transit commuters are public sector employees.
- Transit commuters who live in suburban areas have considerably longer commutes than do either core-area transit commuters or non-transit commuters in outlying areas.
- Though the share of transit commuters with 60+ minute commutes is higher than for non-transit riders, non-transit riders still account for 71 percent of 60+ minute commutes in the WMA. Among transit commuters who do have 60+ minute commutes, more than two-thirds live in Fairfax, Montgomery, or Prince George's counties.
- While only six percent of WMA commuters lack access to a vehicle, one-quarter of transit commuters lacks access to a vehicle and is therefore dependent upon transit. Nearly half of District of Columbia residents who commute by transit has no vehicle, compared with fewer than one in five residents of Arlington, Alexandria, Fairfax, Montgomery or Prince George's. Among outer suburban transit commuters, less than three percent has no vehicle available.

Implications and Outlook

The overall pattern of transit commuting in the Washington Metro Area (WMA) is straightforward: a person who lives near a Metrorail station and works in the District of Columbia or Arlington is the most likely to commute via public transit. One factor distinguishes suburban residents who commute by transit, though: while most own cars, they choose to commute by transit.

With a few notable exceptions, the only suburban areas with high percentages of transit commuters are those in convenient proximity to Metro stations. The two most prominent exceptions are Bailey's Crossroads and Langley Park, which stand out among other suburban communities in several ways. In both of these communities:

- There are very low median earnings levels among their working populations.
- There are very high percentages of transit-dependent commuters with no access to vehicles.
- There is frequent bus service on multiple corridors connecting to Metrorail and employment centers.
- More than 50 percent of residents are neither White nor Black, and there are very high concentrations of Hispanic residents.

Bailey's Crossroads and Langley Park have one more commonality: both are located along proposed rail transit corridors that are scheduled to begin service by 2020. The future Columbia Pike Streetcar (Bailey's Crossroads) and Purple Line light rail (Langley Park) systems that will serve these areas are expected to increase demand for transit-oriented housing development in these two areas that will, in all likelihood, increase transit usage in these areas.

There are a few other locations around the region where transit usage is expected to increase in the future due to the development of new service. Most notable among these is the Silver Line corridor in Fairfax and Loudoun counties, where the CDPs of Tysons Corner, Reston, Herndon, McNair⁷, and Ashburn are already experiencing demand for high-density residential and commercial development around future station sites.

Another interesting project is the Corridor Cities Transitway (CCT) in Montgomery County, which would provide bus rapid transit (BRT) service connecting Gaithersburg, North Potomac, and Germantown with the Metro Red Line and the MARC commuter rail. This system, which could be completed as early as 2020, is designed to serve a combination of suburban-scale employment and residential hubs along a nine-mile route (an additional six-mile extension is also proposed). The CCT's chosen mode (BRT), service to a mix of homes and employers, and suburb-to-suburb routing all make it an important test case for future transit service in the region's suburban jurisdictions.

While the data evaluated in this paper suggest that the best way to induce additional transit ridership is to extend transit service to more people, financial and political realities will make it very difficult to pursue additional expansions of mass transit in the WMA for at least the next 30 years. Knowing this, a

⁷ The McNair CDP, which includes the McNair Farms development and the southeast quadrant of the VA-267 and VA-28 interchange, is adjacent to two Phase II Silver Line stations: Herndon and Innovation Center.

better strategy for convincing more commuters to choose transit may be to encourage transit oriented development (TOD) that concentrates more housing units and office buildings around rail and bus lines. This approach would ideally include two strategies to leverage the existing transit system: 1) increase the number of seats and frequency of service on existing suburb-to-core transit routes; and 2) increase the amount of commercial development around outlying transit stations so that core area residents can make use of capacity in the transit system for “reverse commutes.”

Although a TOD-based development strategy is already the norm in core areas and is being pursued in several suburban jurisdictions, the majority of future development in the WMA is still expected to occur in low-density, auto-oriented areas far from public transit.⁸ This pattern is a product of powerful market forces: so long as a significant share of moderate-income households in the WMA desires large, single-family housing units, additional residential development will occur on the region’s fringes, where such housing can be provided at more modest prices. Even so, it stands to reason that continued worsening of traffic congestion and ever-longer commuting times will eventually limit the appeal of this lifestyle to many current and prospective residents.

The danger to the region is that, instead of choosing smaller, denser housing units closer to public transit, more people could instead seek jobs in less expensive and/or less congested regions. In this regard it is clear that the Washington metro area must pursue a two-pronged strategy to bring better transit service closer to more residents and bring more residents closer to better transit service. Failure to accomplish either of these goals could have extremely harmful effects on the region’s future prosperity.

⁸ McClain and Pisarski, *op. cit.*