

# ***Fairfax County Transit Development Plan***

## ***DRAFT Final: Background Existing Conditions***



**Developed by**



*and*



**Submitted to  
Fairfax County Department of Transportation  
September 2009**

### 3 EXISTING CONDITIONS

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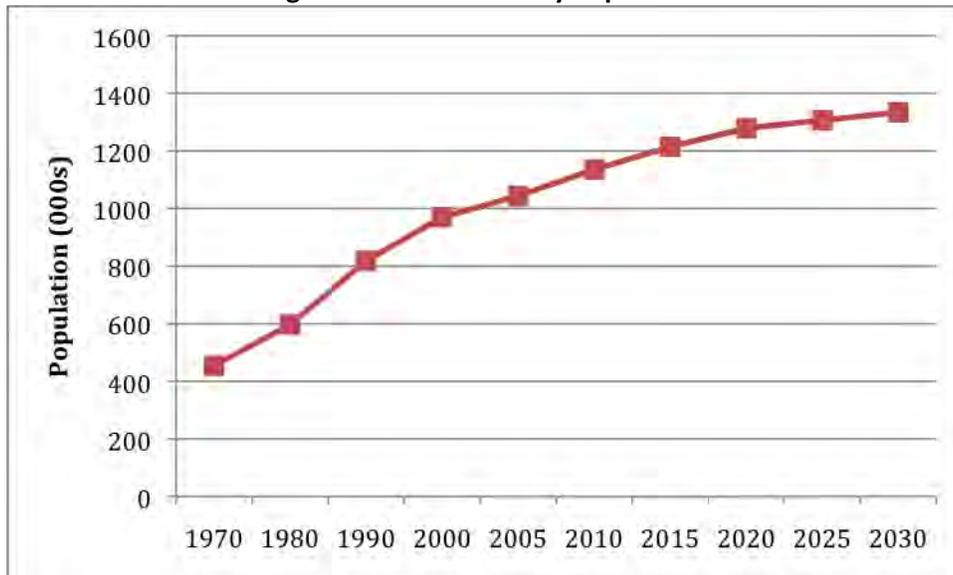
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### 3.1 POPULATION AND DEMOGRAPHICS

The population of Fairfax County has grown significantly over the past 35 years and will continue to grow, as seen in Figure 3.1. However, while the population more than doubled in the thirty years from 1970 to 2000, growth between 2000 and 2030 is only expected to be 38%. While the growth rate has slowed, the expected increase in population, along with the expected increases in surrounding jurisdictions, will continue to present challenges for moving around the County and the region.

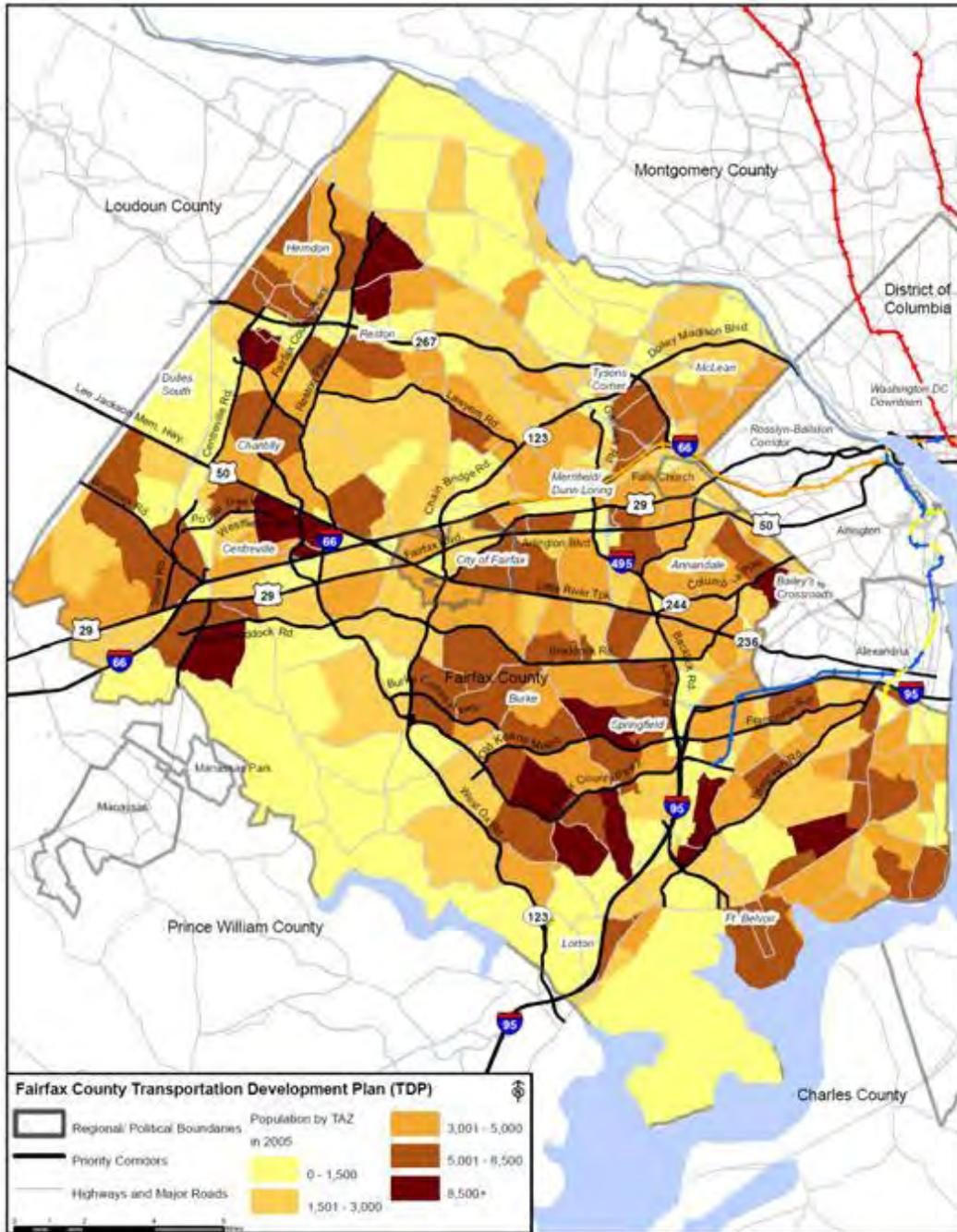
Fairfax County’s population of just over one million residents is spread throughout the County (see Figure 3.2), but are much more densely concentrated in parts of the County inside the Beltway (Falls Church and Annandale); south of the Beltway and east of I-95 (Franconia and Richmond Highway area); between the Beltway and Chain Bridge Road/West Ox Road (Vienna, Merrifield and Fairfax); and areas west of Reston Parkway (Reston, Herndon, Chantilly and Centreville. The areas of the County south of I-66 and west of the Fairfax County Parkway, between Chain Bridge Road and the Fairfax County Parkway, and north of the Dulles Toll Road (with the exception of Herndon) currently have much lower populations than the other parts of the County.

**Figure 3.1 Fairfax County Population**



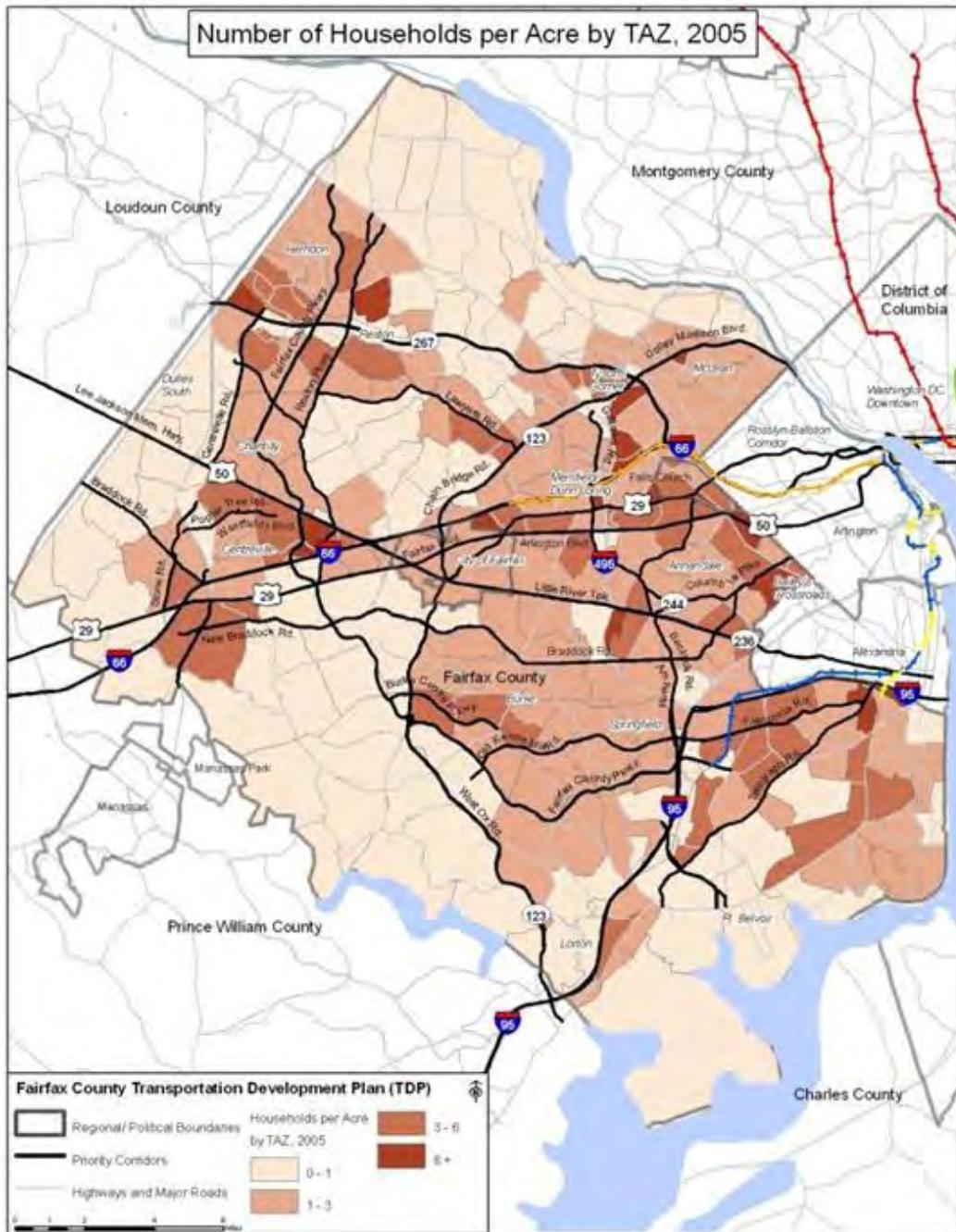
Source: U.S. Census and MWCOG Round 7.1 Forecasts

Figure 3.2 Fairfax County Population, 2005



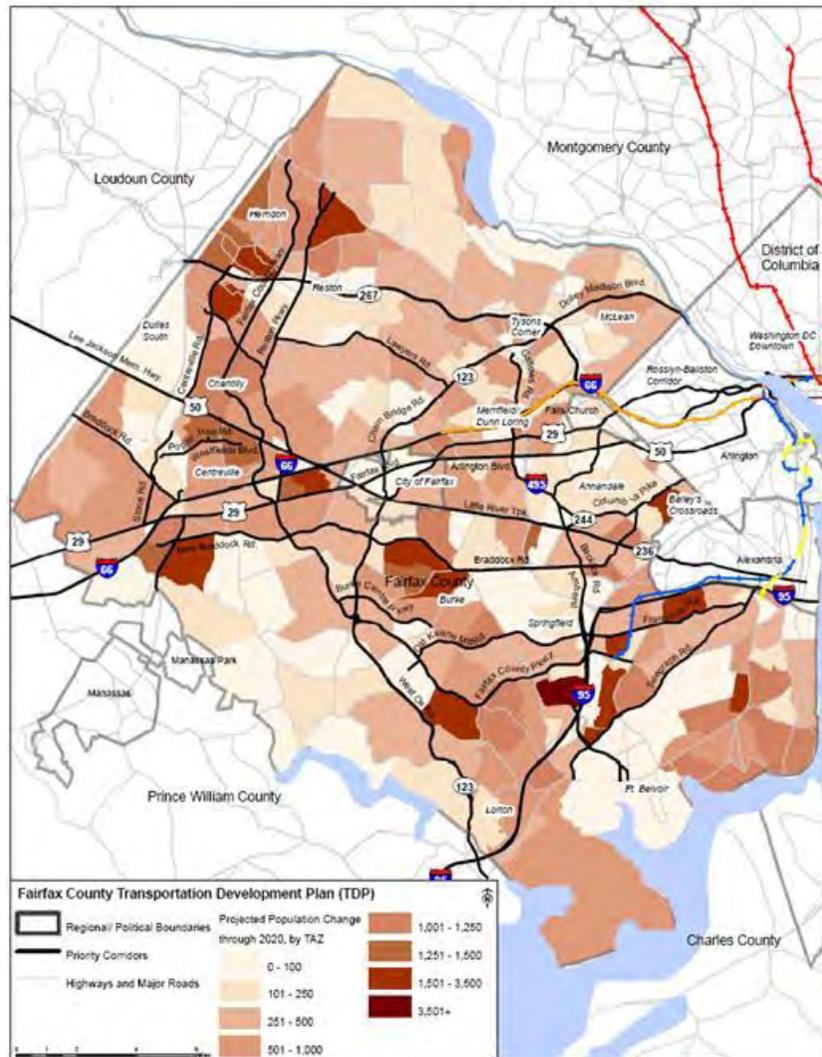
Source: MWCOG Cooperative Forecast, Round 7.1

Figure 3.3 Fairfax County Household Density



Source: MWCOG Cooperative Forecast, Round 7.1

Figure 3.4 Projected Population Growth, 2005 – 2020



Source: MWCOG Cooperative Forecast, Round 7.1

Figure 3.3 shows the population density in the County, and it is quite clear that the northern border of the County with the Potomac River, the southern border of the County with Prince William County and the Occoquan River, and a large swath cutting the middle of the County from north to south have low densities, on the order of 0-1 households per acre.

Figure 3.4 shows the expected population growth in the County between now and 2020, as determined by the Fairfax County Department of Planning in conjunction with the Metropolitan Washington Council of Governments (MWCOG) as part of the regional cooperative forecasting process. The map shows that the greatest absolute growth in population is expected to occur in the areas of the County with the greatest existing population

Between 2005 and 2030, it is anticipated that 53% of household growth in Fairfax County will occur in the regional activity clusters<sup>1</sup> of Bailey’s Crossroads, Dulles Corridor, Fairfax Center/City of Fairfax/GMU,

<sup>1</sup> Growth Trends to 2030: Cooperative Forecasting in the Washington Region, Fall 2007. MWCOG.

Springfield, Merrifield/Dunn Loring and Tysons Corner. Where this occurs, it will be helpful for bus service provision, as it is easier to provide service when the population is clustered in particular areas. However, the other 47% of household growth will be more difficult to serve with fixed route transit services.

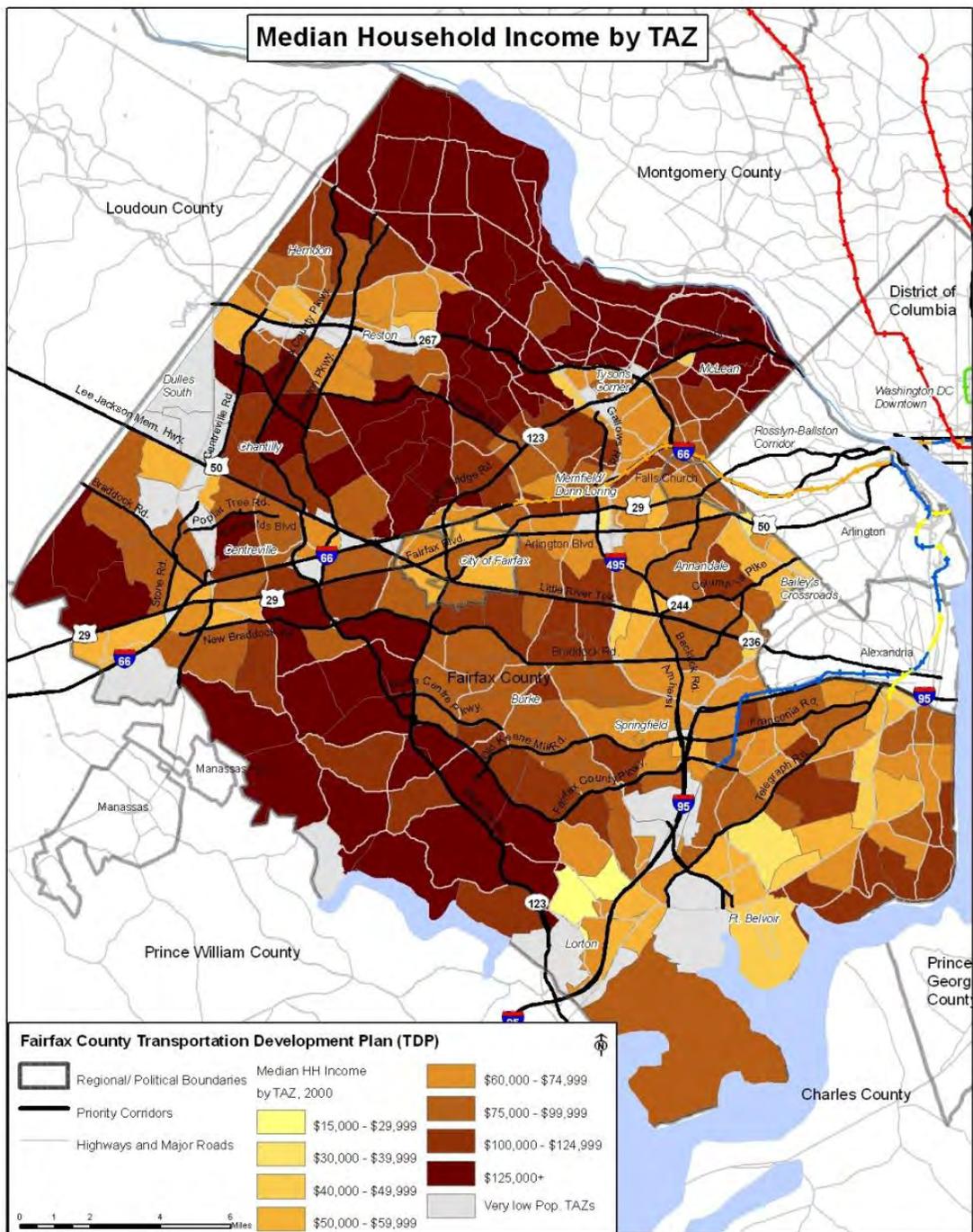
In January of 2008, Fairfax County was rated the wealthiest county in the United States by Forbes Magazine, with a median income of just over \$100,000.<sup>2</sup> The northernmost areas of the County, including McLean and Great Falls, roughly bounded on the south by VA 123, VA 267, Hunter Mill Road and Leesburg Pike, are low density, high income areas that have little need or desire for transit service. The area currently has little or no transit service (except via park-and-ride access). Other affluent areas with no transit service include the central section bounded by Lawyers Road and Reston Parkway, and the southwestern area beyond Fairfax County Parkway and West Ox Road (VA 123). Figure 3.5 shows that there are many areas of the County with median incomes higher than the Countywide median, with 11% of the residents residing in areas with median incomes greater than \$125,000. It is important, however, to look at where lower income residents reside, even within the highest income areas of the County. For example, while the median household income in the Reston-Herndon area tends to be greater than \$60,000, the area still has one of the highest concentrations of low-income households (income less than \$30,000) in the County (see Figure 3.6).

The County also has other sections with high concentrations of low-income households. Notable among these is the area inside the beltway between Little River Turnpike (VA 236) and US 29, as well as the southeastern corner of the county surrounding Richmond Highway. The rest of the county has a mixture of income levels. Much of the recent development tends toward upper income levels, but there has also been a significant amount of townhome, condominium, and apartment development targeted at moderate income households.

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<sup>2</sup> [http://www.forbes.com/2008/01/22/counties-rich-income-forbeslife-cx\\_mw\\_0122realestate.html](http://www.forbes.com/2008/01/22/counties-rich-income-forbeslife-cx_mw_0122realestate.html), November 21, 2008

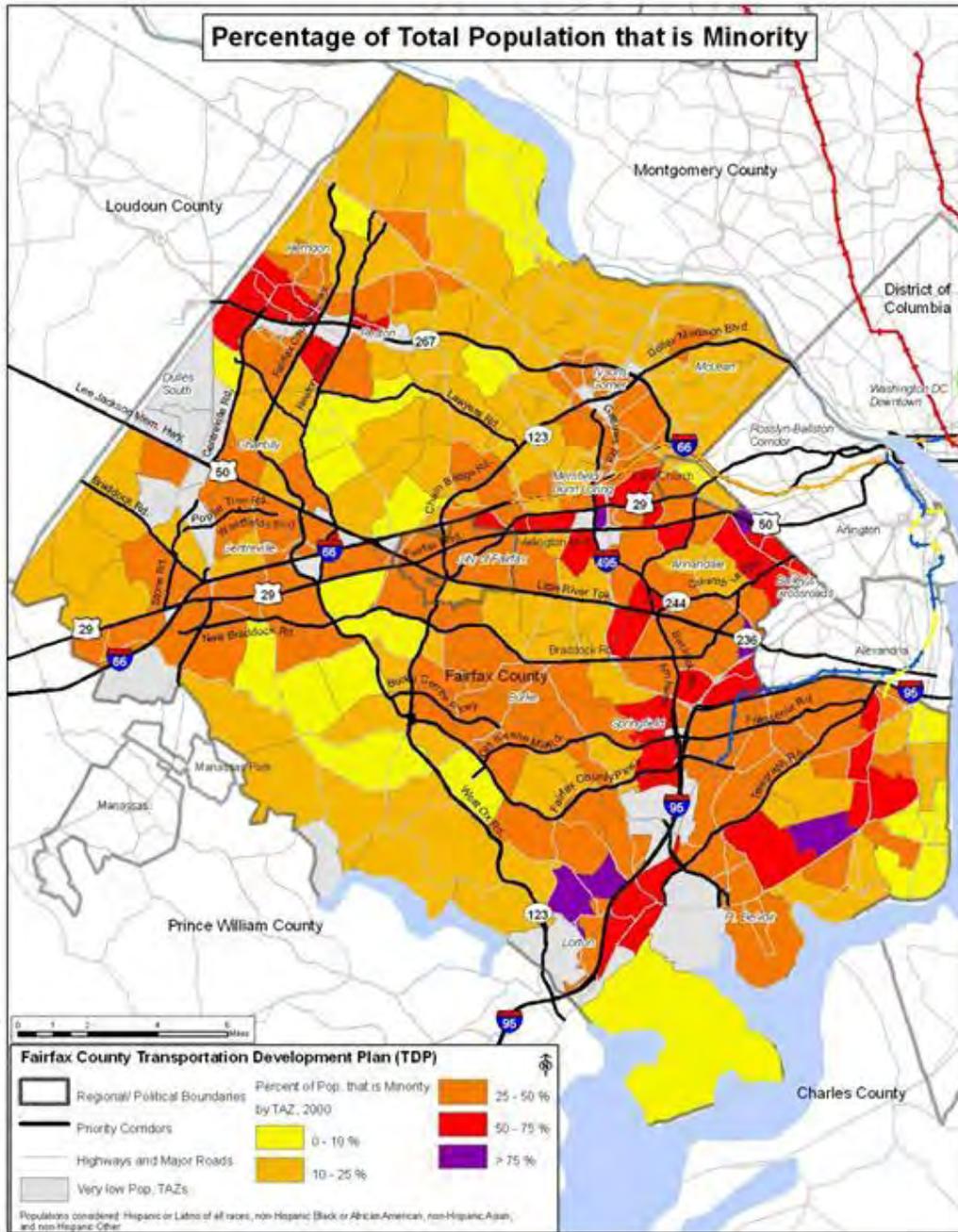
Figure 3.5 Median Household Income, 2000



Source: U.S. Census Transportation Planning Package and Analysis by MWCOG

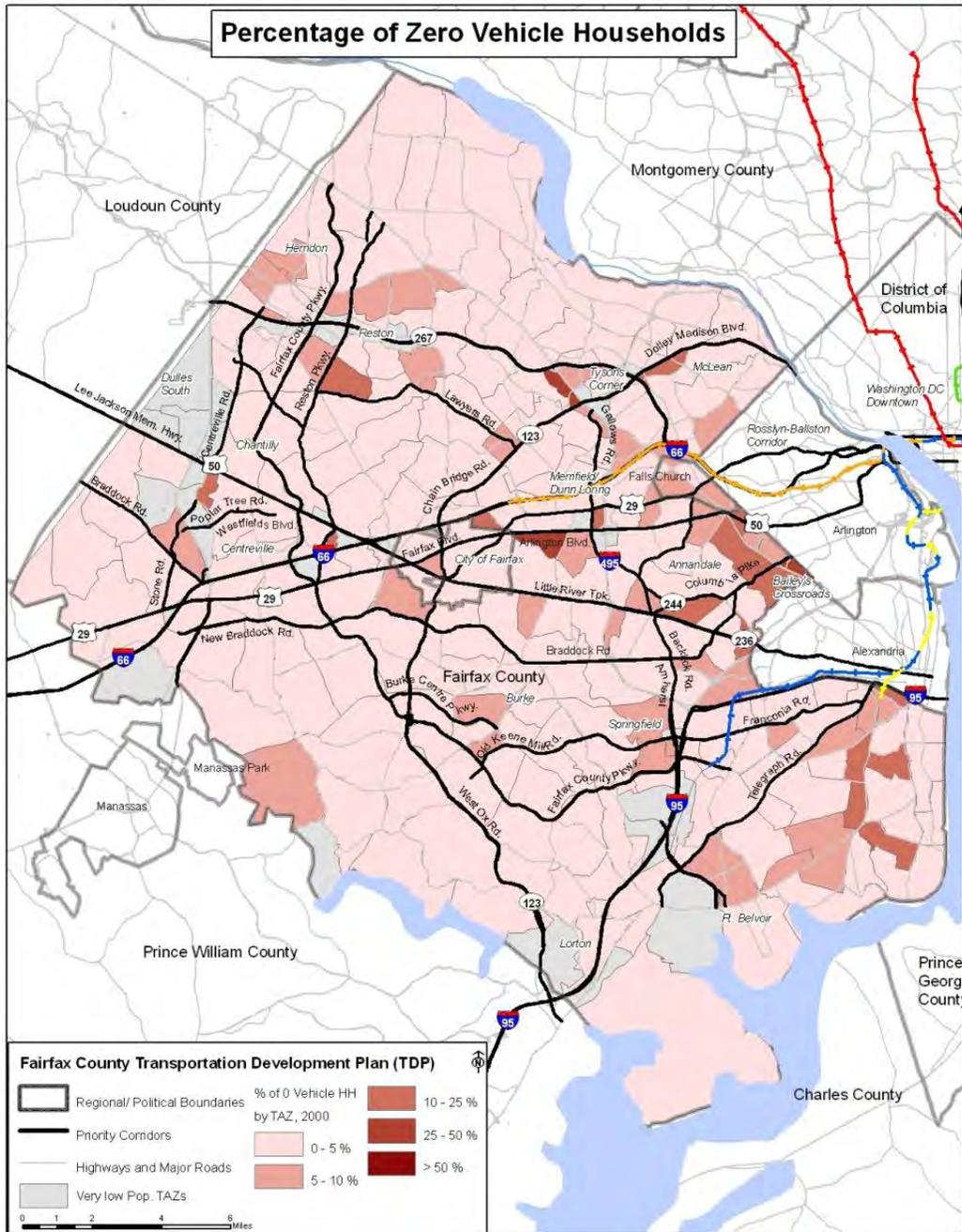


Figure 3.7 Minority Population, 2000



Source: U.S. Census Transportation Planning Package and Analysis by MWCOC

Figure 3.8 Zero Car Households, 2000



Source: U.S. Census Transportation Planning Package and Analysis by MWCOC

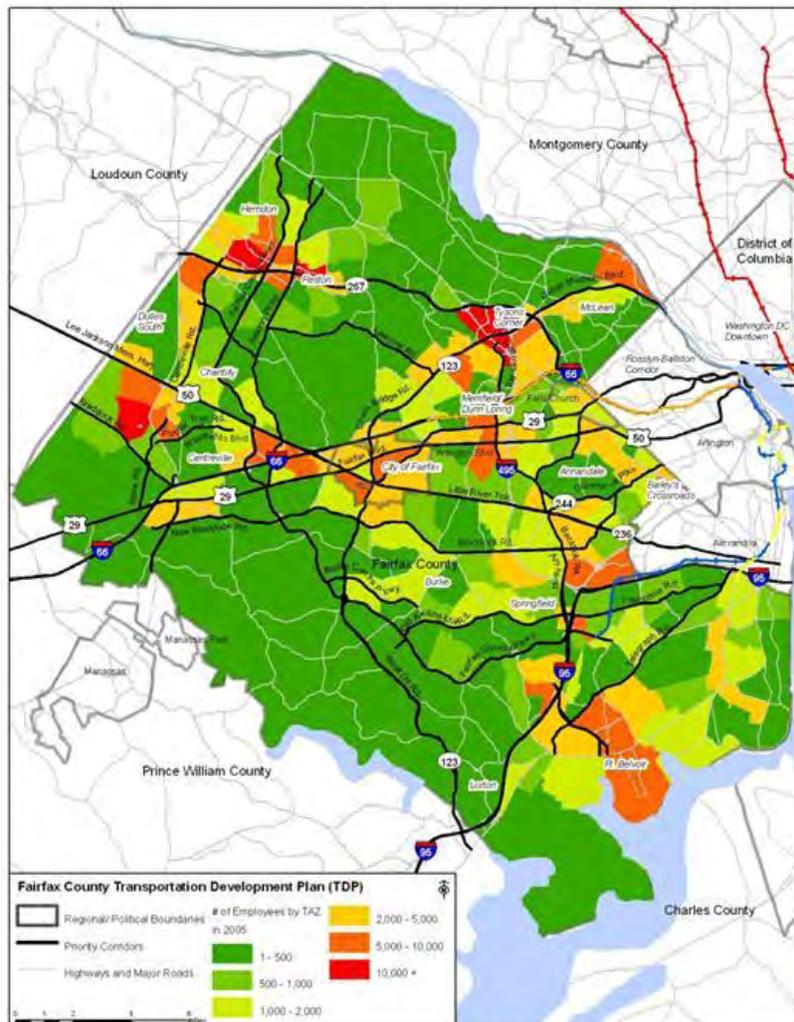
### 3.2 EMPLOYMENT

Fairfax County’s 2005 employment numbered 604,000 and is expected to increase by 30% to 782,200 by 2020. 2030’s employment projection is expected to be 40% higher than in 2005, for a total of 847,600 jobs in the County. This growth rate is about the same as the growth rate anticipated in population, so the percentage of people commuting into Fairfax for work will remain the same, all other things being equal, but the absolute numbers will increase, further taxing existing road and transit networks.

As shown in Figure 3.9, the majority of employment in the County is focused around the activity centers of the Dulles Corridor, Tysons Corner, Central Fairfax and Springfield and at and around the military base at Fort Belvoir. Employment densities, shown in Figure 3.10, are also greatest in these locations.

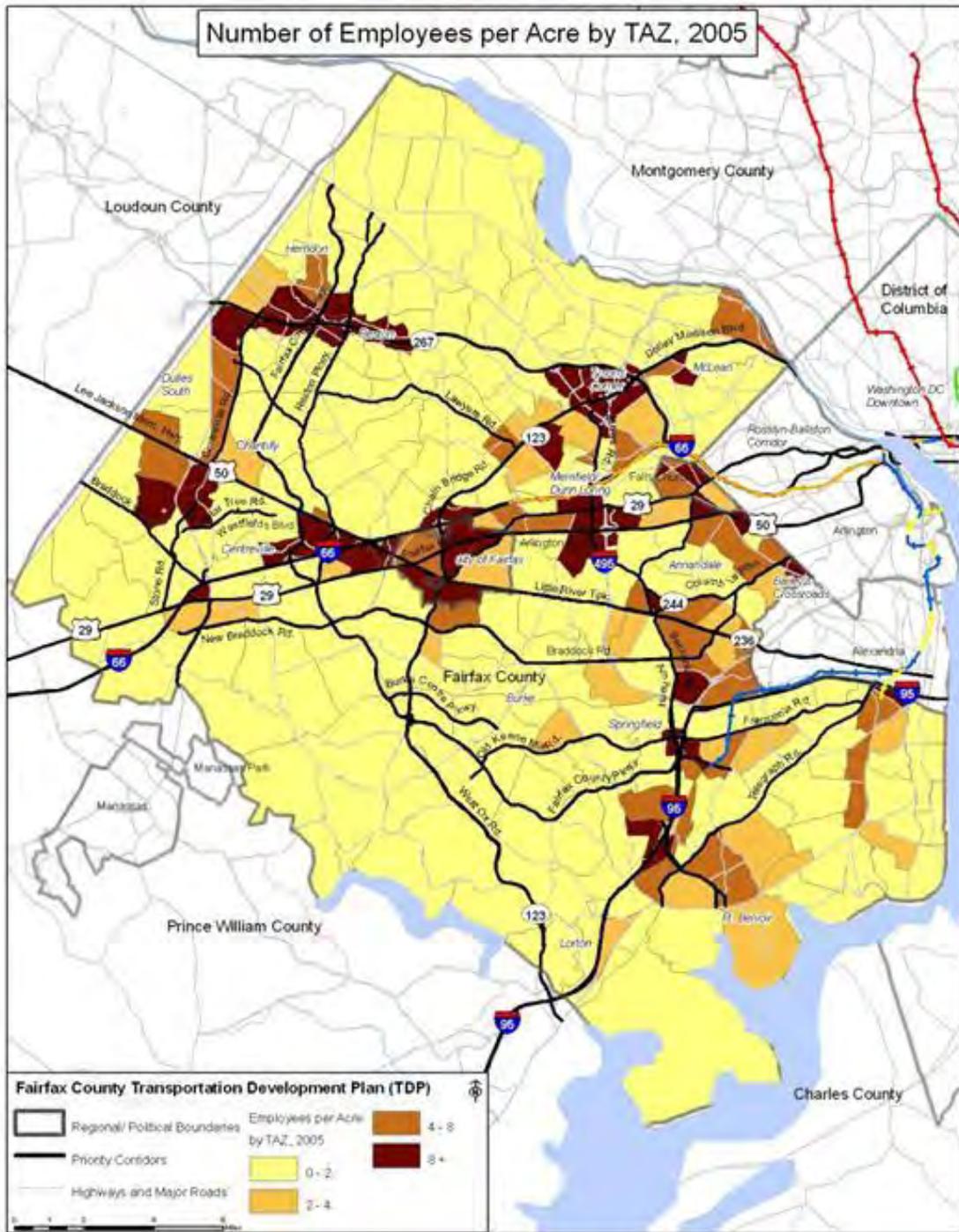
Employment in the County is expected to grow by nearly 30 percent between 2005 and 2020 and 40 percent by 2030. Most, 79 percent, is expected to occur within activity centers, which makes it easier to provide transit service.

**Figure 3.9 Fairfax County Employment, 2005**



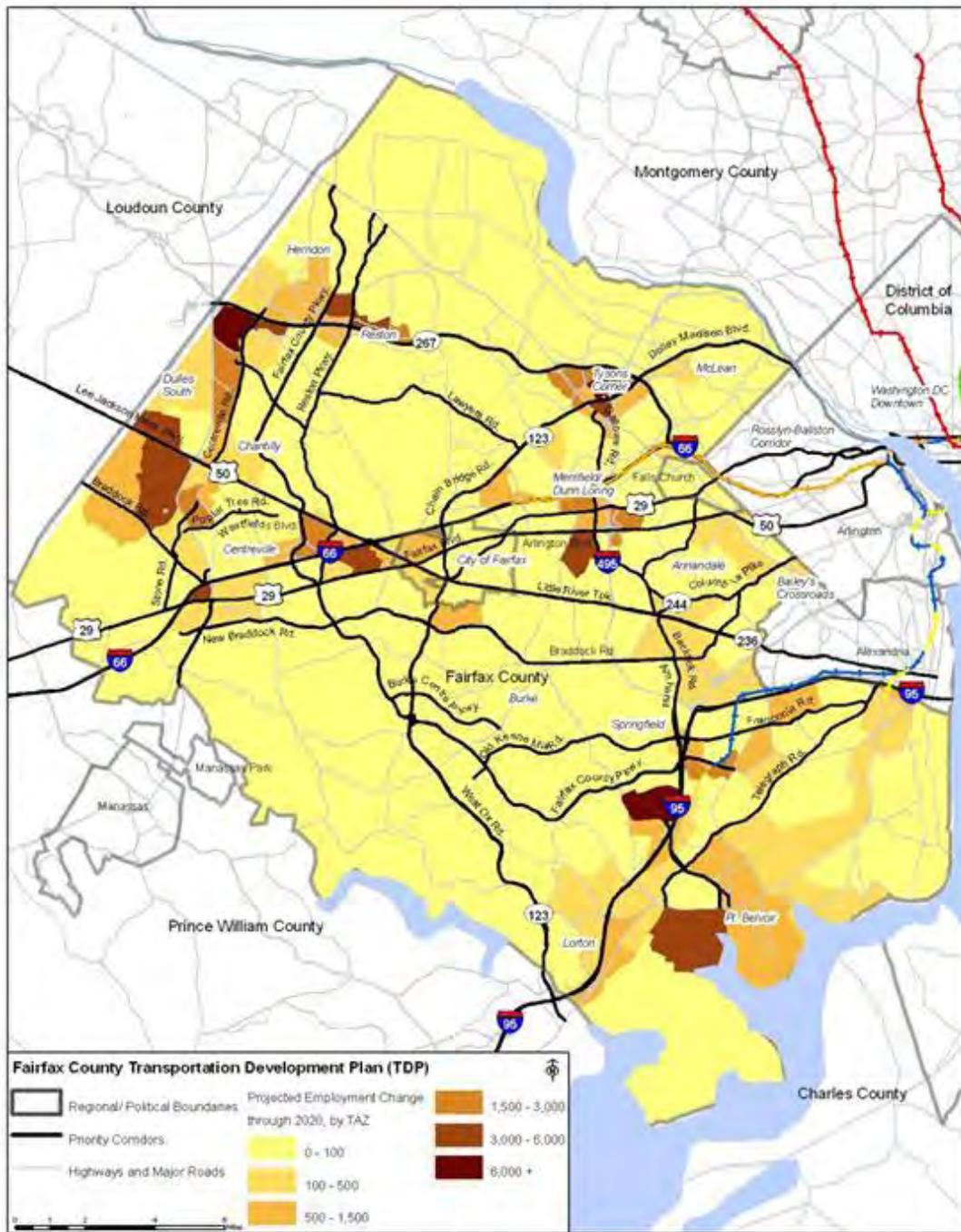
Source: MWCOG Cooperative Forecast, Round 7.1

Figure 3.10 Fairfax County Employment Density



Source: MWCOG Cooperative Forecast, Round 7.1

Figure 3.11 Projected Employment Growth, 2005 – 2020



Source: MWCOG Cooperative Forecast, Round 7.1

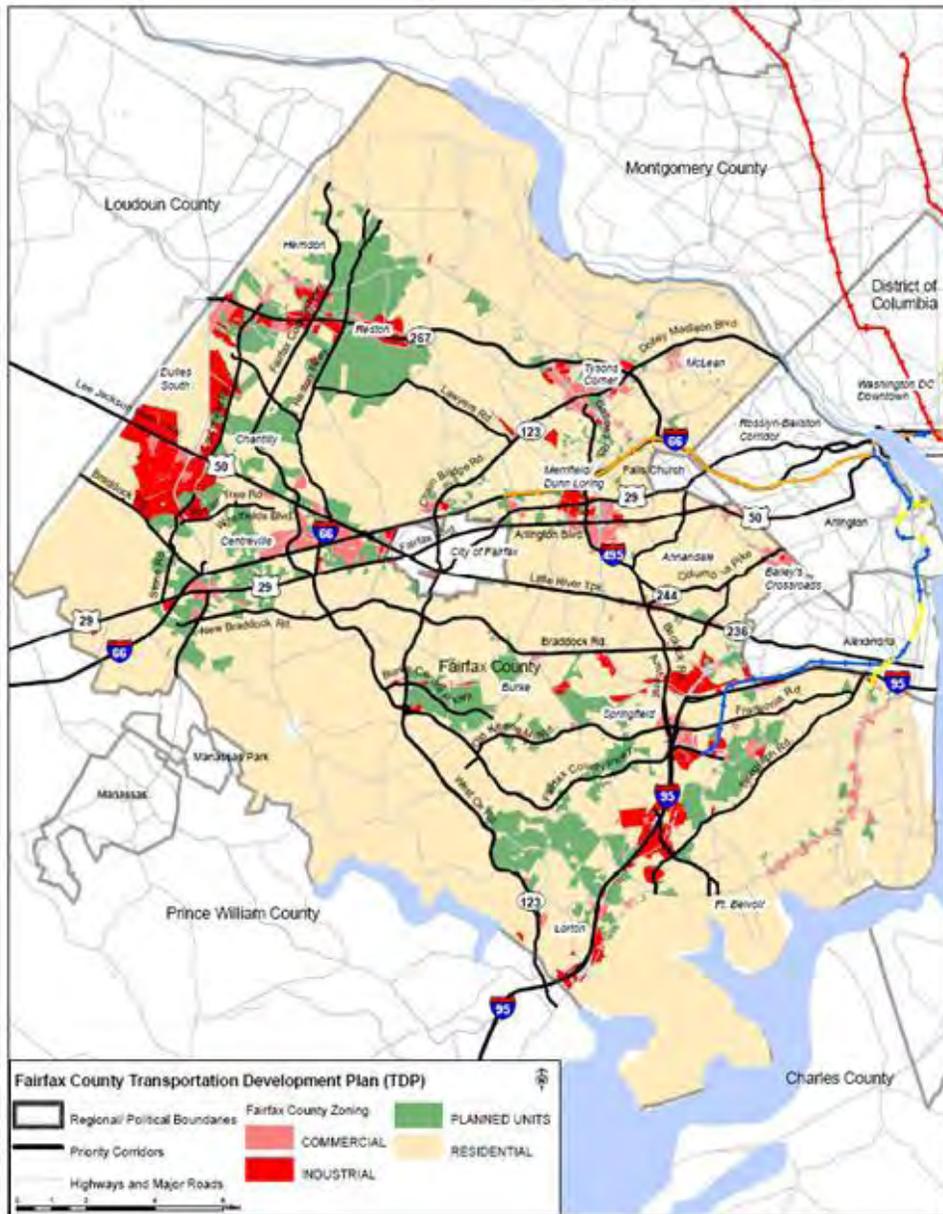
### 3.3 LAND USE

The County's land use policies are depicted in Figures 3.12 and 3.13. The first shows the current (as of 2001) land use and zoning at a general level in terms of residential, commercial, industrial and planned. The second shows the County's most recently adopted Comprehensive Plan zoning. The Comprehensive Plan land use map shows that the County is anticipating intense pockets of mixed use development, mainly in Tysons Corner, Merrifield/Dunn Loring, near Dulles (particularly along Centreville Road), Centreville, and Fairfax (near the Government Center). Smaller pockets of intense mixed use development appear in the South County in Springfield and Lorton. What these mixed use areas mean for transit is a diversified ridership base, with an all day population for both for work and living. Mixed use areas tend to be more transit supportive due to the ability of residents and employees to accomplish many purposes within a small area. Mixed use development also makes the area easier to serve by transit because of the different trip purposes, as opposed to a residential or commercial area which are more heavily peaked.

In terms of residential density, it is clear that the County intends to keep the higher density areas to the parts of the county east of Route 123 and west of Reston Parkway. Particularly dense residential areas will remain in Springfield, Annandale, Centreville and Herndon. Areas with a lot of office use, another draw for transit, are located in Tysons Corner, Dulles area, Fairfax and Merrifield/Dunn Loring.

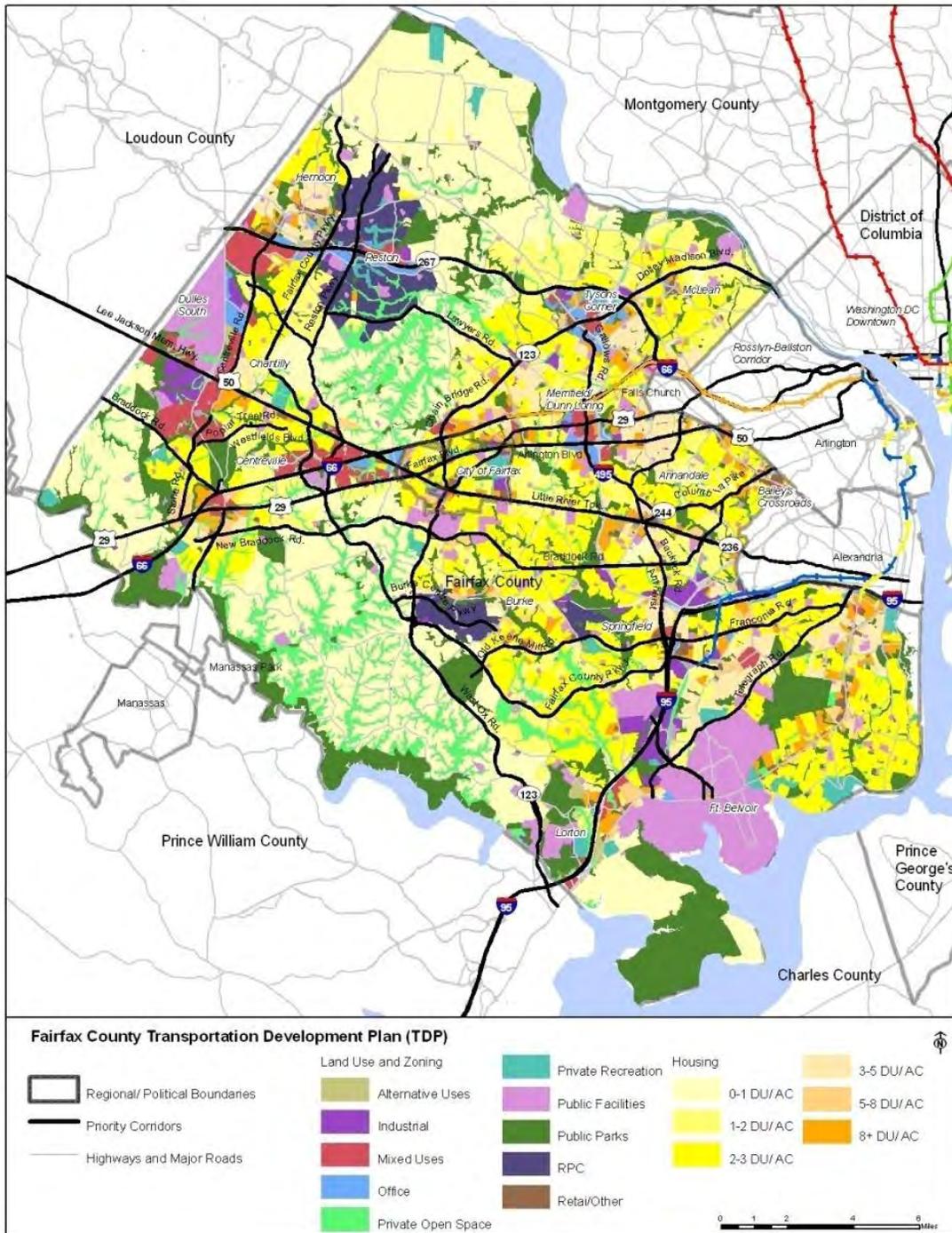
The zoning that the County has set forth, with a few exceptions, is not much different than what is out there today in the County. However, it is important to take the Comprehensive Plan Zoning requirements into account as the transit plans for the next ten years are developed.

Figure 3.12 Current Land Use and Zoning, 2001



Source: Fairfax County Department of Planning and Zoning

Figure 3.13 Comprehensive Plan Land Use and Zoning, 2007



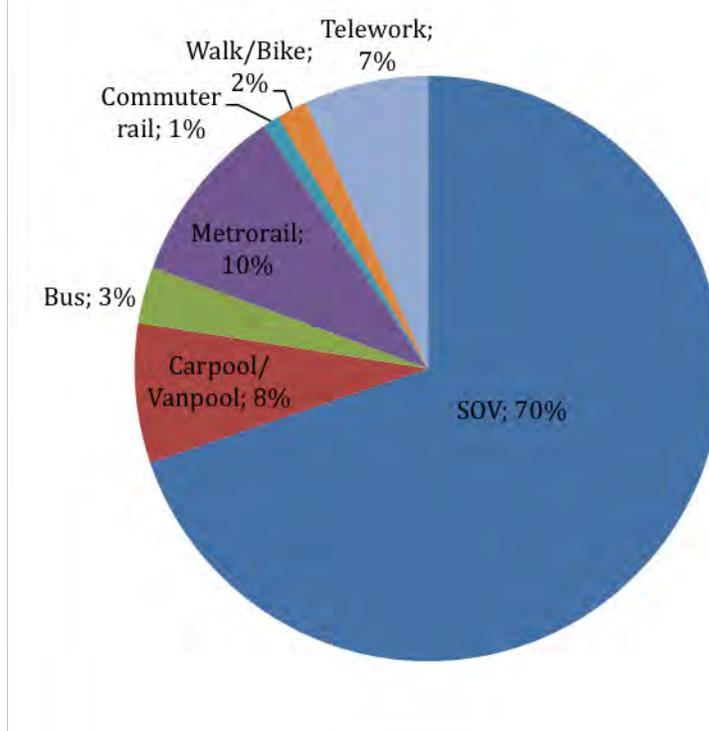
Source: Fairfax County Department of Planning and Zoning

### 3.4 TRANSPORTATION AND TRAVEL TRENDS

According to the 2007 Metropolitan Washington Council of Governments (MWCOG) State of the Commute Survey, the average commute time for Fairfax County residents is 34 minutes and 14 miles, slightly less than the regional average of 35 minutes and 16.3 miles. The survey also indicated that 47% of County residents commute outside the County for work or school. The TDP’s resident survey revealed the exact same trip pattern, with 53% of respondents who work outside their home commuting to a workplace or school within Fairfax County.

Figure 3.14 shows the primary mode of travel to work on Fairfax County according to the State of the Commute Survey. The TDP resident survey indicated similar patterns, but accepted multiple responses. Overall, the vast majority of the County commutes via single occupancy automobile, but there are a significant number who take transit.

**Figure 3.14 Primary Mode of Travel to Work in Fairfax County State of the Commute Survey, 2007**



Source: 2007 State of the Commute Survey, MWCOG

**Table 3.1 Primary Mode of Travel to Work in Fairfax County**

	Total
	n= 662 <sup>3</sup>
<b>Net: Car</b>	88%
Drive alone	79
Drive with passengers	8
Carpool/Vanpool	5
<b>Net: Public Transportation</b>	18
Metrorail	14
<b>Net: Bus</b>	9
Metrobus	6
Fairfax Connector	3
VRE	1
Ride a motorcycle/Bicycle	2
Walk	1
Other	1

Source: TDP Resident Survey, 2008

In addition to looking at how residents of the County commute, it is important to look at where they commute to. The residents surveyed as part of the resident survey were asked for the zip code of their employment location, and the results are broken down in Table 3.2, below. It is important to recognize the substantial number of County residents who remain within the County to work, contributing to congestion within the County on both the highways and arterials.

**Table 3.2 Jurisdiction of Work of Fairfax County Residents**

Jurisdiction of Work	Percent of Employed Population
Fairfax/Falls Church	53 %
District of Columbia	18 %
Arlington County	9 %
City of Alexandria	5 %
Prince George's	2 %
Prince William	2 %
Montgomery County	2 %
Loudoun County	2 %
Manassas	<1 %
Other	7 %
Don't Know	1 %

<sup>3</sup> Totals more than 100% due to multiple responses accepted

In addition to looking at a jurisdiction level for commute patterns, the regional travel demand model was used to help determine the commute patterns of Fairfax County residents at a finer grain, by using Transportation Analysis Zones (TAZs). The current trip patterns (2005) and forecasts (2020) are from the Transportation Planning Board (TPB) Travel Forecasting Model, Version 2.2, utilizing the 2007 CLRP and FY 2008-2013 TIP Air Quality Conformity regional modeling process adopted by the TPB on January 16, 2008. Table 3.3 shows the number of home-based work trips from Fairfax County to various regional activity centers. It is clear that downtown DC attracts the greatest number of workers from Fairfax County, and the number is not expected to change significantly during the planning horizon for the TDP. The Dulles Corridor is the second most popular work destination for County residents and it is expected to continue to grow over the next 10-15 years. This will necessitate joint coordination between Fairfax and Loudoun Counties as the travel between the two Counties grows, as parts of the Dulles Corridor are outside of Fairfax in Loudoun County. Within Fairfax, Tysons, Fairfax Center, Merrifield/Dunn Loring and Springfield will continue to be popular work destinations and will also grow significantly, particularly Springfield, where commuters from within Fairfax County are expected to grow by nearly 55%.

**Table 3.3 Home Based Work Trips from Fairfax County to Regional Activity Centers**

Activity Center	2005	2020	Change
Downtown DC	61,620	63,734	3.4%
Dulles	43,277	57,980	34.0%
Tysons	34,764	46,603	34.1%
Fairfax Center	28,110	34,428	22.5%
Rosslyn-Ballston	17,334	21,157	22.1%
Merrifield/ Dunn Loring	17,058	20,053	17.6%
Springfield/I-95	13,880	21,414	54.3%
Baileys Crossroads	11,946	12,839	7.5%
Crystal City/Pentagon	11,821	13,650	15.5%
Montgomery County	9,461	8,736	-7.7%
Manassas	2,025	2,972	46.7%
Potomac Mills	893	2,834	217.4%
Bethesda/Friendship Heights	856	798	-6.7%
Greenbelt/College Park	396	398	0.8%
Leesburg	343	801	133.7%
New Carrollton	295	321	9.0%
Gainesville	292	631	115.9%
Silver Spring	155	65	-58.3%
National Harbor	111	485	338.9%
Konterra	85	123	44.7%

Figures 3.15 through 3.20 show the County broken down into TAZs and where people originate for home-based work trips to some of the most common destinations for County residents. In addition, for the three largest job centers within Fairfax (Dulles, Tysons and Springfield, the maps show where else throughout the region employees are commuting in from. This information is extremely useful for developing an overarching plan for where commuter service would need to be located both within the County and within the region. In addition, the legend of each map indicates the percentage of trips that are projected to be taken on transit to the destination in question. These projections are based on the highway and transit networks that were modeled in the 2007 CLRP and FY 2008-2013 TIP; hopefully, by recommending additional services as part of the TDP, the transit mode share for these activity centers can grow beyond what is currently projected.

For example, Figure 3.15 indicates where people within Fairfax County live who have work destinations in downtown DC. It is clear that the South County area around I-95, Telegraph Road and Richmond Highway currently and will continue to supply the most Fairfax County workers to DC. In addition, almost all of the areas east of Route 123 will need service into DC, be it via express bus or via feeder bus to Metrorail.

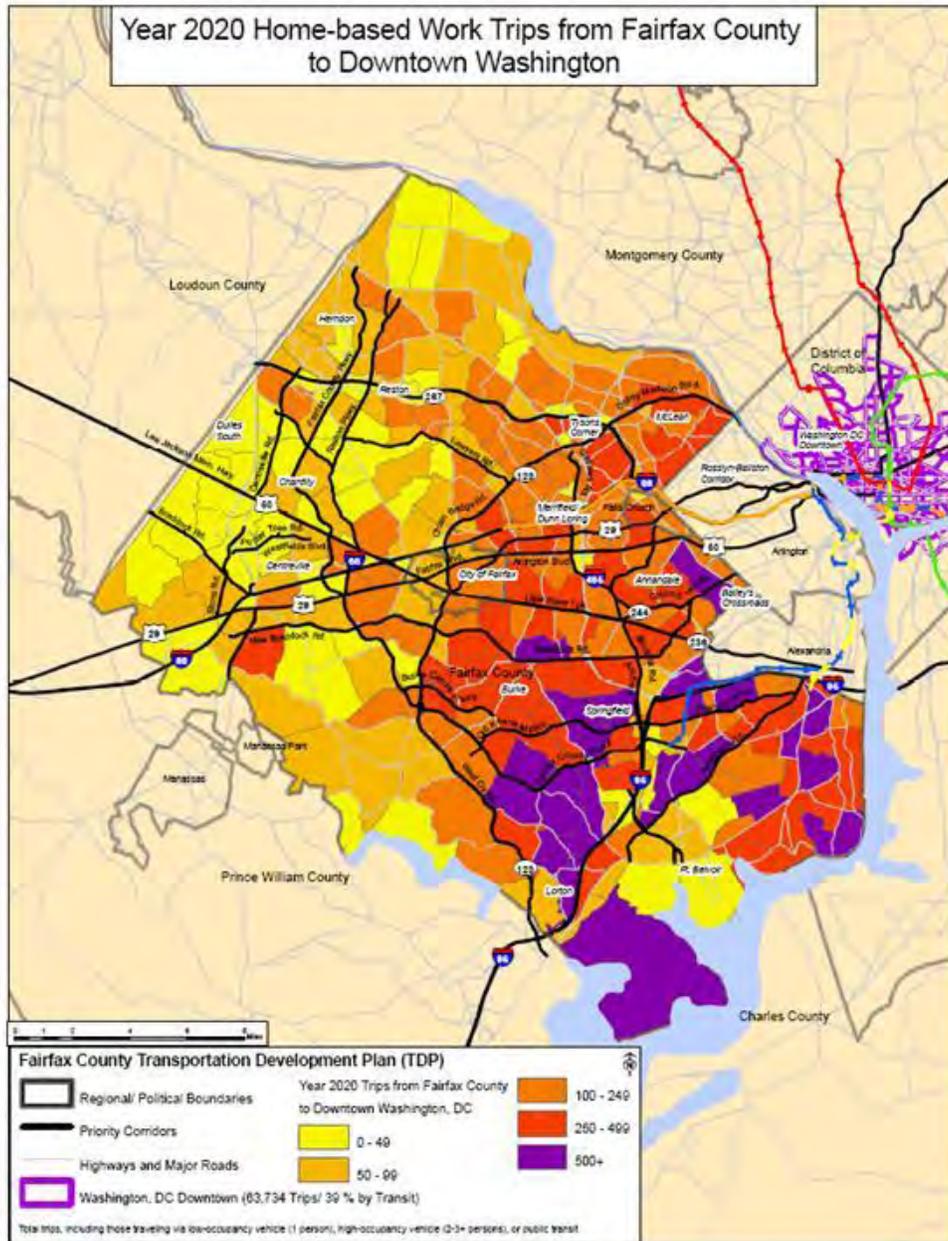
The Dulles Corridor map in Figure 3.16 shows a few key points. First, it appears that a large portion of the projected commuters to the Dulles Corridor will live within that area. Shorter commutes tend not to be conducive to transit due to short trip times, but service within the Dulles Corridor is nevertheless needed, as the transit mode share projected for this area is just 4%. In addition, areas to the immediate east and southeast, along West Ox Road, also have larger numbers of commuters to the Dulles Corridor. The arrows on the Dulles map indicate where large contingents of commuters are coming in from outside the County. Nearly 30,000 trips are expected to go to the Dulles Corridor every day from Loudoun County, and another 11,000 from Prince William County and the City of Manassas. These are huge markets that warrant future commuter service. Finally, both Arlington and Montgomery Counties will export over 1,000 workers to the Dulles Corridor in 2020, both high enough numbers to warrant a look a transit service.

Figure 3.17 shows the home-based work trips to Tysons Corner from elsewhere in Fairfax County and throughout the region. The projection shows 11% arriving by transit, but a large part of that are users of the new Dulles Rail extension through Tysons to Weihle Avenue. While the Tysons Corner area will have a lot of commuters living in the area, residents of many of the other parts of the County also work in Tysons Corner. Areas west of Tysons, including large numbers from the Reston/Herndon area, down to New Braddock Road, as well as areas south of Tysons west of I-95 also provide a significant number of commuters. From outside the County, extremely large numbers of commuters come into Tysons, especially from Loudoun County, with over 9,000 daily trips, Arlington and Montgomery Counties, with over 5,000 trips per day each, Prince William with 4,000 trips, and more than 2,000 trips each from the District, Prince George's County and the City of Alexandria.

Figure 3.18 shows that residents of the central part of the County are more likely to commute to the City of Fairfax and other parts of Central Fairfax, including the Government Center area. Only 3% of the trips are projected to be on transit. Home-based work trips to Springfield (Figure 3.19) are extremely well concentrated east of 123 and south of Little River Turnpike. There is also a significant number of work trips to the Springfield area from Prince William County, more than 10,000 commuters. There are a few scattered pockets of commuters outside of that area, but the majority fall within those boundaries. From outside the County, more than 1,000 trips each come in from Arlington and Prince George's Counties and over 2,500 come in from the City of Alexandria. In total only 2.5% of trips to the Springfield area are projected to be by transit. Given the short commute distances, it will require high quality transit service to get people out of their cars for commuting within Springfield, but commuters in from Prince William County would be well served by commuter bus service, as well as local bus service to get around once at work.

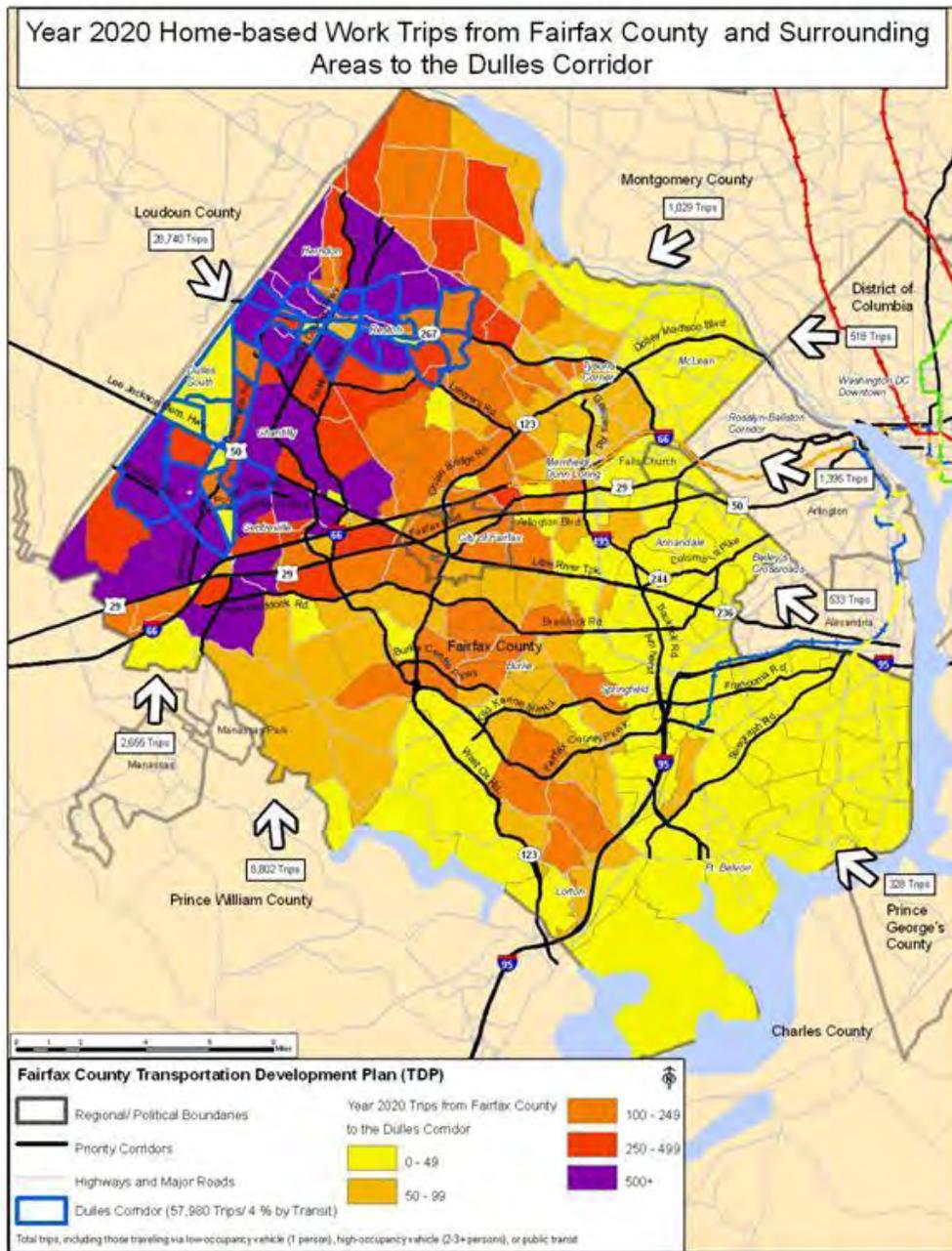
Finally, there are a significant number of trips from locations within Fairfax County to the Rosslyn-Ballston corridor in Arlington. Most of these trips are from the area east of 123. In addition, 35% of the trips are projected to be taken via transit due to the Metrorail service that runs through the center for the area. Some additional bus service to the area, particularly from the south County area that is not served by the Orange Line, as well as feeder bus service to the Orange Line in the north part of the County, would provide better transit service to the area.

Figure 3.15 HBW Trips From Fairfax County To Downtown DC, 2020



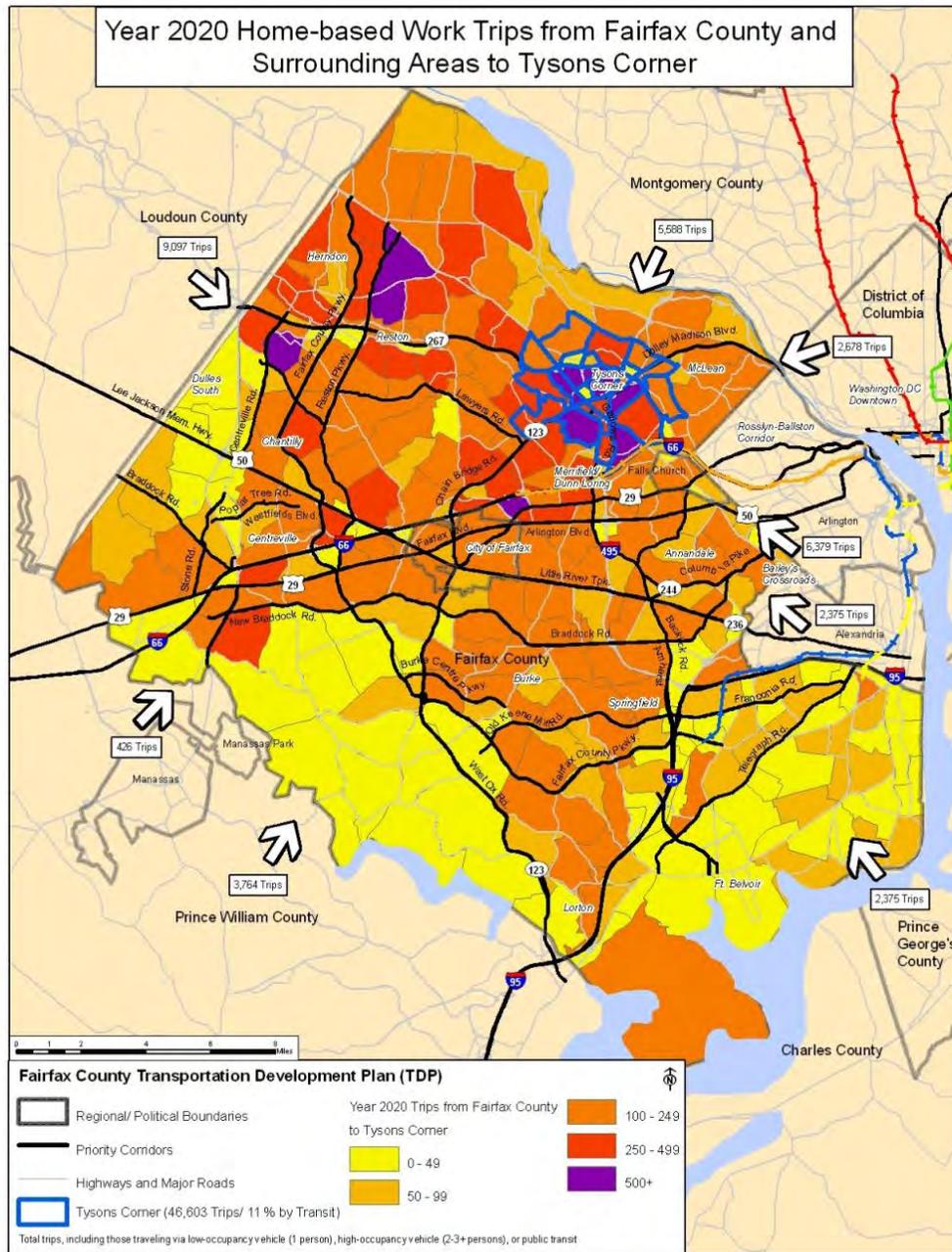
Source: MWCOG TPB Travel Forecasting Model 2.2

Figure 3.16 HBW Trips From Fairfax County To Dulles Corridor, 2020



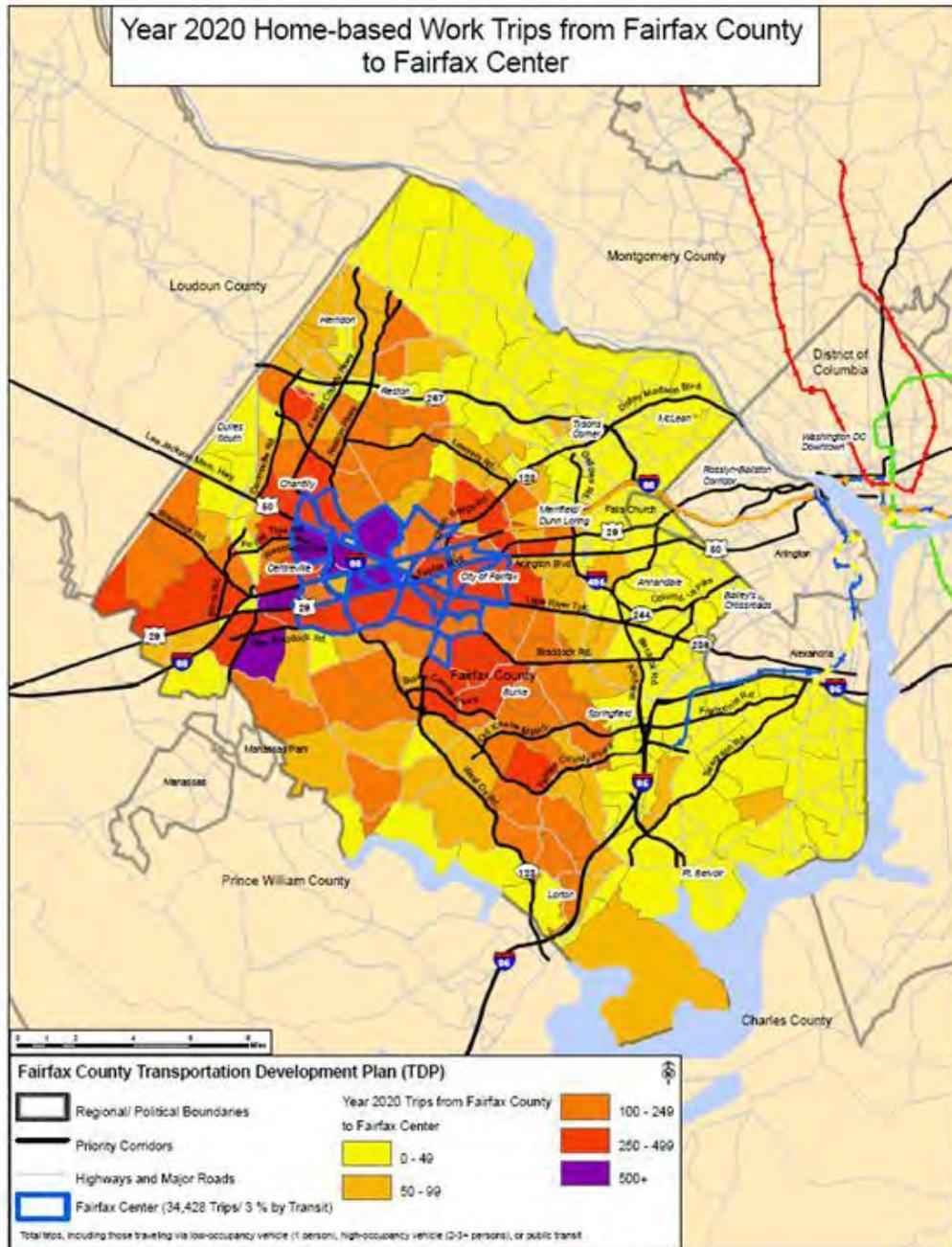
Source: MWCOG TPB Travel Forecasting Model 2.2

Figure 3.17 HBW Trips From Fairfax County To Tysons Corner, 2020



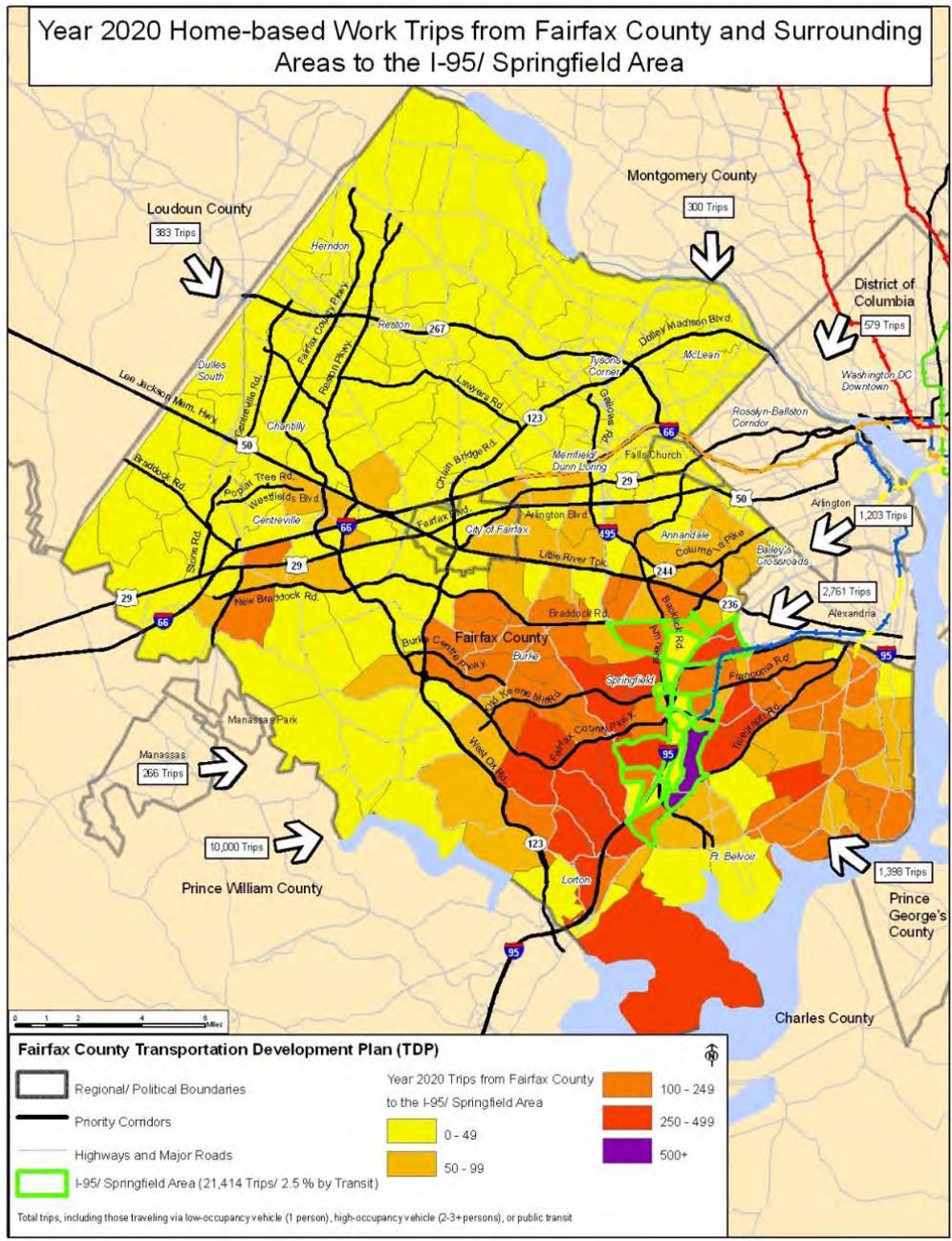
Source: MWCOG TPB Travel Forecasting Model 2.2

Figure 3.18 HBW Trips From Fairfax County To Fairfax Center, 2020



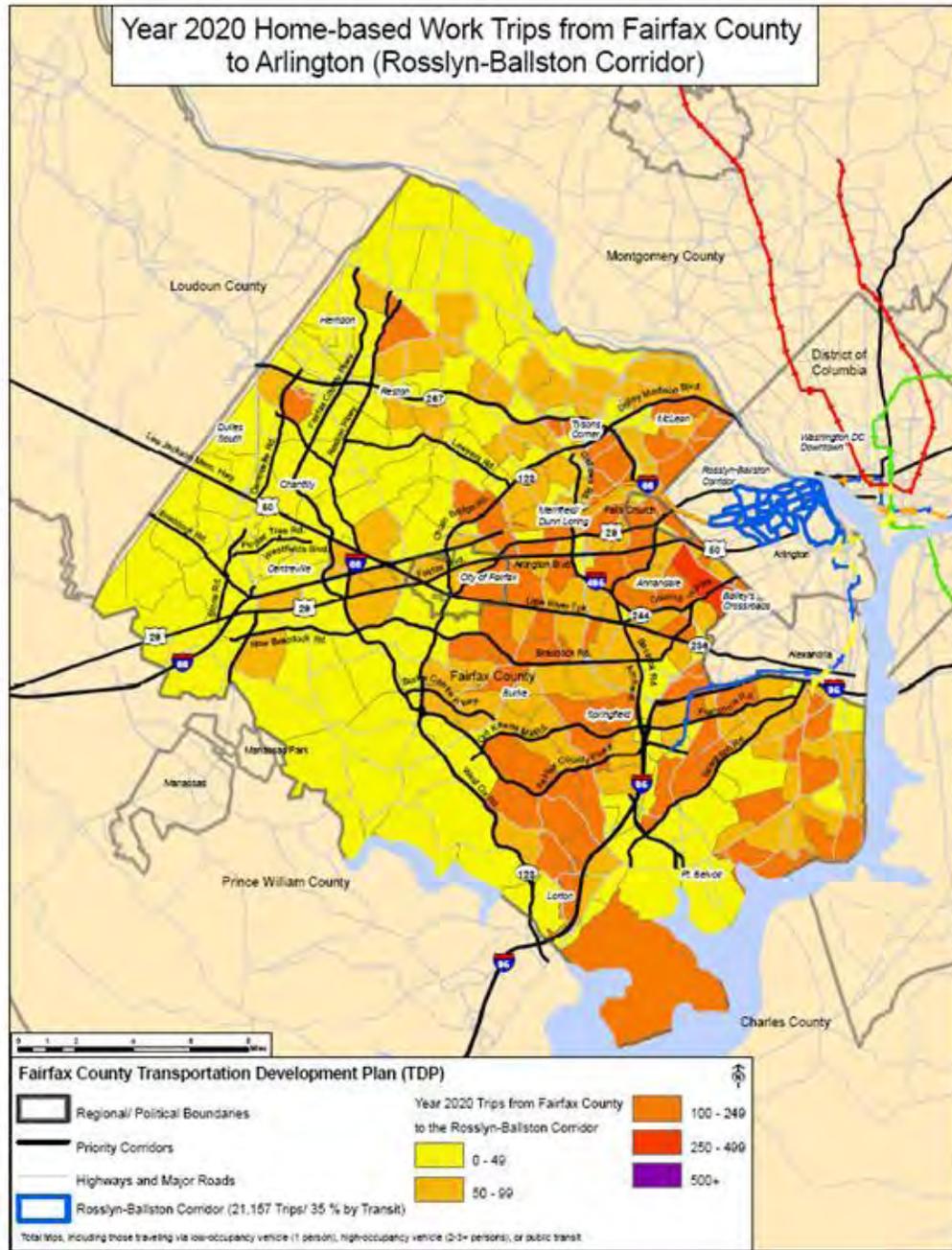
Source: MWCOG TPB Travel Forecasting Model 2.2

Figure 3.19 HBW Trips From Fairfax County To Springfield, 2020



Source: MWCOC TPB Travel Forecasting Model 2.2

Figure 3.20 HBW Trips From Fairfax County To Rosslyn Ballston, 2020



Source: MWCOG TPB Travel Forecasting Model 2.2