Housing the Region's Future Workforce

Policy Challenges for Local Jurisdictions

Final Report

by

Lisa A. Sturtevant, PhD

Stephen S. Fuller, PhD

George Mason University School of Public Policy

Center for Regional Analysis

Arlington, Virginia

October 25, 2011

Acknowledgements

The Center for Regional Analysis would like to thank the following sponsors for their support for this research project:

2030 Group

Bank of America

Stephen T. Antosh

Thomas S. Bozzuto

Sidney O. Dewberry

Emanuel J. Friedman

William Hazel

Donald and Angela Irwin

Robert C. Kettler, Kettler Inc.

NVR, Inc.

Gordon Smith, Miller and Smith Inc.

We would also like to thank the Metropolitan Washington Council of Governments for their support and sponsorship of the Housing the Region's Future Workforce conference.

Summary of Key Research Findings

Over the next 20 years, the Washington DC metropolitan area will add more than a million net new jobs. At the same time, the region will need 1.8 million replacement workers to fill jobs vacated by retirees and others. The ability to absorb these new workers into the region and to ensure robust regional economic growth depends critically on providing a sufficient amount of housing of the right types and prices and in the right places. The share of gross regional product that leaks out of the metropolitan area is expected to increase from four to eight percent over the next two decades as more and more of the region's workers commute to homes outside of the region. The level of traffic congestion is worsening and our region's workers face some of the most arduous and longest commutes in the nation. Employers are concerned about the ability to attract new workers because of the price and availability of housing. Without local cooperation and a regional housing strategy, the future health of the Washington area economy could be threatened.

This research analyzes the future housing demand associated with net new job growth in the Washington DC metropolitan area between 2010 and 2030. Because it is a jobs-driven forecast of housing demand, it explicitly links the economic opportunities in the region to the availability and affordability of housing. The housing demand forecasts include an analysis of the type (single-family and multi-family), tenure (owner and renter), price or rent, and location of the housing that will be needed over the next 20 years. The analysis includes two sets of housing unit forecasts that take into account inter-jurisdictional commuting levels and rates.

These housing demand estimates are based on an analysis of the need for housing units for the region's expected 1.05 million net new workers. As such, the forecasts significantly underestimate the amount of housing that will ultimately be needed to accommodate both net new and replacement workers. However, even the conservative estimates of housing need reflect rates of new construction that are far greater than the pace of housing construction in the recent past and are greater than the amount of housing called for by many local jurisdictions' comprehensive plans.

Key Findings

- The Washington DC metropolitan area is expected to add **1.05 million net new jobs** between 2010 and 2030. Many of these jobs will be in the relatively high wage professional and technical services sector, but many of the region's new workers will be entry-level workers. There also will be substantial growth in the education, health, leisure and accommodation and retail trade sectors. Workers in these sectors often have more moderate wages. The employment growth over the next 20 years generally is focused in the region's existing employment centers. However, some jurisdictions (e.g. Loudoun County) will experience a much faster rate of job growth than the regional growth rate.

- More than one-third of the region's job growth will be in the professional and technical services sector (about 370,000 net new jobs.) While jobs in this sector tend to have higher than average wages, many of the new professional and technical service sector jobs will be entry-level positions. The region will also add nearly 130,000 administrative and waste services jobs and 117,000 jobs in the health services sector.

- If each jurisdiction provided enough housing to accommodate all of its future workers, the Washington DC region needs to add **731,457 net new housing units** between 2010 and 2030. This supply of housing assumes that the amount of jurisdiction-to-jurisdiction commuting stays at present levels. Supplying this amount of housing will require the construction of about 36,500 net new housing units each year regionwide, an annual pace of construction never before seen in the region and below what local jurisdictions have accounted for in their comprehensive plans.

- If the new jobs added in the local jurisdictions have the same in-commuting rates of current jobs, the housing need is 348,282 new units. This low estimate implies that a half a million new workers will commute to their jobs from places outside the region, creating unsustainable levels of traffic congestion over the next two decades.

- The types of housing that will be needed to accommodate new workers over the next 20 years reflects the changing demographics of the working age population and the mix of jobs the region is expecting. The housing demand forecasts suggest a need for **283,677 single-family houses** (single-family detached and townhomes) and **447,780 multi-family units**. Thus, over 60 percent of the new housing units needed in the region over the next two decades will be multi-family while less than 40 percent will be single-family. The region's current housing stock, by contrast, is 67 percent single-family and 33 percent multi-family. There will need to be substantial changes in builders' approaches to new home construction and local governments' policies for guiding residential development in order to accommodate this needed housing growth.

- There will be a shift in the homeownership rate for future residents of the Washington DC region. Currently, the region's homeownership rate is 64 percent. However, **only 55 percent of the new workers to the region over the next 20 years will live in owner-occupied housing units**, while 45 percent will rent.

- The region's new housing must be priced so that it is affordable to new workers. While the Washington DC metropolitan area will continue to attract many high-wage jobs over the next 20 years, many new workers will be entry-level workers and others will work in sectors that traditionally have lower wages. In addition, a greater share of workers will live alone and consequently will have only one income. As a result, the region will need a substantial amount of ownership and rental housing with relatively moderate prices and rents. Based on the housing need forecasts, **more than two-thirds of owner-occupied units need to be priced below $400,000**. **More than half of new renters will need housing with rents less than $1,250 a month.** Thus, in order to keep new workers living within the region, there is a need for relatively smaller and more moderately priced housing in the decades to come. Much of the moderately priced housing will not be new construction, but rather must be preserved from the existing stock.

Policy Implications

These jobs-driven housing demand forecasts have several implications for local governments, builders, economic development professionals, and employers in the region:

1. Local jurisdictions are planning for an insufficient amount of housing to accommodate future workers.

2. More housing is needed closer to jobs, in existing and growing regional employment centers.

3. There is a need for more multi-family housing and smaller, more affordable owner and renter homes in the region.

4. A lack of a sufficient supply of housing contributes to worsening traffic and quality of life and threatens our region's economic vitality.

Table 1. Net New Jobs: 2010 – 2030
Washington DC Metropolitan Area

Jurisdiction	Net New Jobs 2010-2030	Percent Change 2010-2030
District of Columbia	**152,130**	**20.8**
Calvert	14,588	64.2
Charles	20,401	47.0
Frederick	41,950	42.5
Montgomery	163,008	34.5
Prince George's	76,578	23.7
Suburban Maryland	**316,525**	**32.9**
Alexandria	41,340	39.0
Arlington	46,640	26.1
Clarke	1,086	26.3
Fairfax*	168,833	26.7
Fauquier	10,261	48.5
Loudoun	146,909	104.7
Prince William**	81,241	58.2
Spotsylvania***	44,362	77.5
Stafford	33,786	84.6
Warren	4,022	32.7
Northern Virginia	**578,480**	54.9
Jefferson Co WV	6,720	47.7
Washington Metro Area	**1,053,855**	**38.2**

Source: IHS Global Insight, GMU Center for Regional Analysis.
Full-time jobs only.
*Includes the cities of Fairfax and Falls Church
**Includes the cities of Manassas and Manassas Park
***Includes the city of Fredericksburg

Table 2. Estimates of Housing Demand: 2010 – 2030
Washington DC Metropolitan Area
High and Low Estimates*

Jurisdiction	High Estimates	Low Estimates
District of Columbia	**122,613**	**36,784**
Calvert	9,764	8,007
Charles	13,608	8,029
Frederick	27,336	19,956
Montgomery	108,522	69,454
Prince George's	52,382	28,286
Suburban Maryland	**211,612**	**133,731**
Alexandria	30,922	6,494
Arlington	34,342	8,929
Clarke	744	431
Fairfax	110,947	52,145
Fauquier	6,870	4,740
Loudoun	98,171	51,049
Prince William	55,065	30,286
Spotsylvania	30,375	13,061
Stafford	22,680	11,793
Warren	2,702	1,756
Northern Virginia	**392,817**	**174,191**
Jefferson Co WV	4,414	3,576
Washington MSA	**731,457**	**348,282**

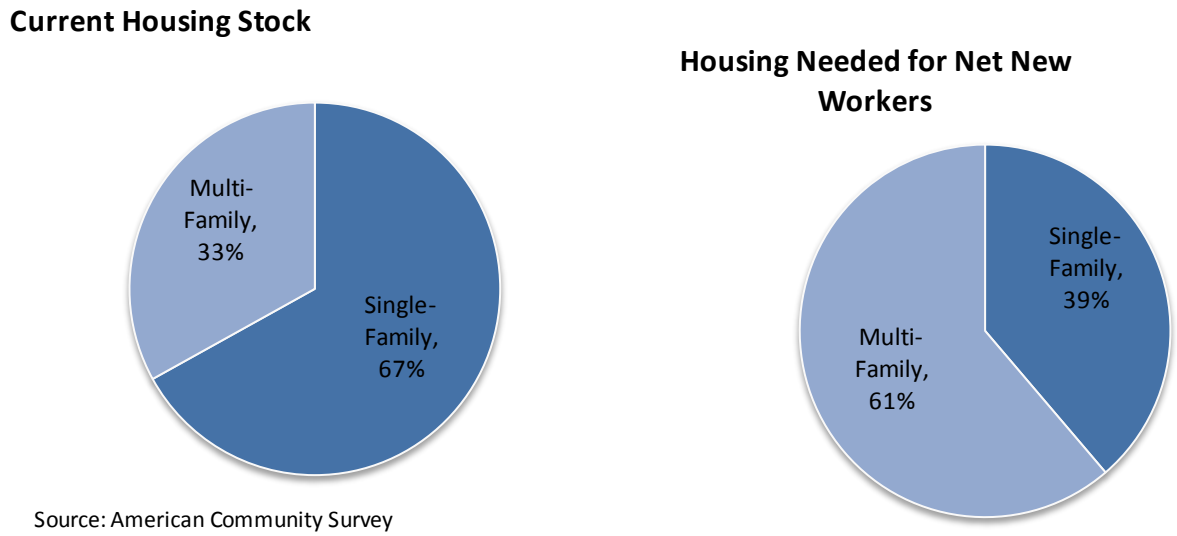
*The high estimates assume all new workers housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes. The low estimates assume that new jobs in each jurisdiction have the same in-commuting rates as current jobs.

Table 3. Estimates of Housing Demand by Unit Type: 2010 – 2030
Washington DC Metropolitan Area
High Estimates*

Jurisdiction	Total Units	Single-Family (includes townhouses)	Multi-Family
District of Columbia	**122,613**	**9,886**	**112,726**
Calvert	9,764	5,467	4,297
Charles	13,608	7,541	6,067
Frederick	27,336	15,446	11,890
Montgomery	108,522	36,658	71,864
Prince George's	52,382	20,416	31,965
Suburban Maryland	**211,612**	**85,529**	**126,084**
Alexandria	30,922	2,442	28,481
Arlington	34,342	3,515	30,827
Clarke	744	427	317
Fairfax	110,947	51,254	59,693
Fauquier	6,870	4,092	2,778
Loudoun	98,171	59,768	38,403
Prince William	55,065	32,083	22,982
Spotsylvania	30,375	17,228	13,148
Stafford	22,680	13,328	9,352
Warren	2,702	1,545	1,157
Northern Virginia	**392,817**	**185,681**	**207,136**
Jefferson Co WV	4,414	2,581	1,833
Washington MSA	**731,457**	**283,677**	**447,780**

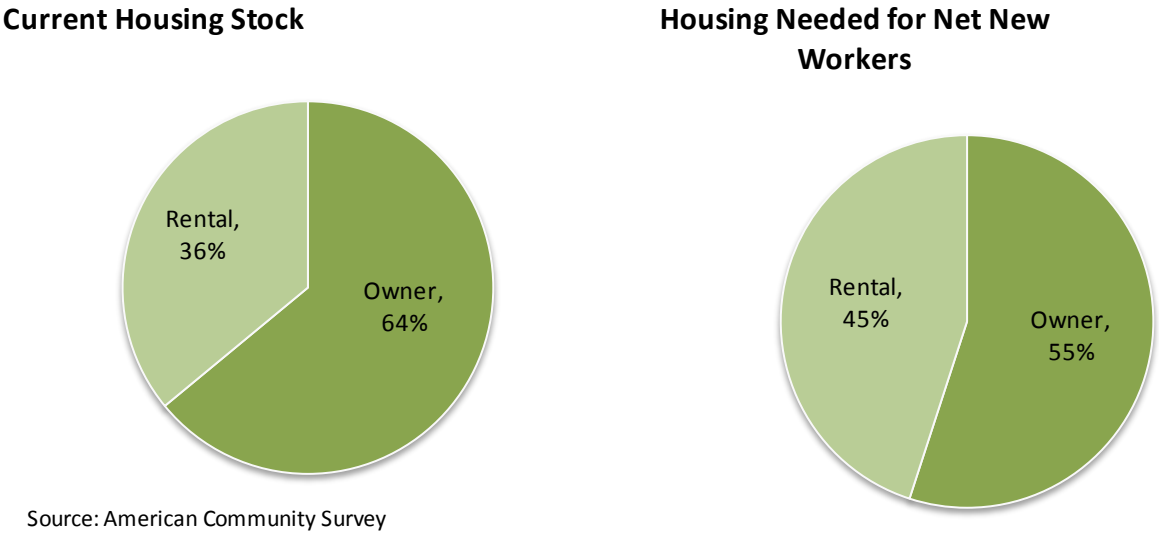
*The high estimates assume all new workers housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes.

Figure 1. Comparing Unit Types: Existing and Needed



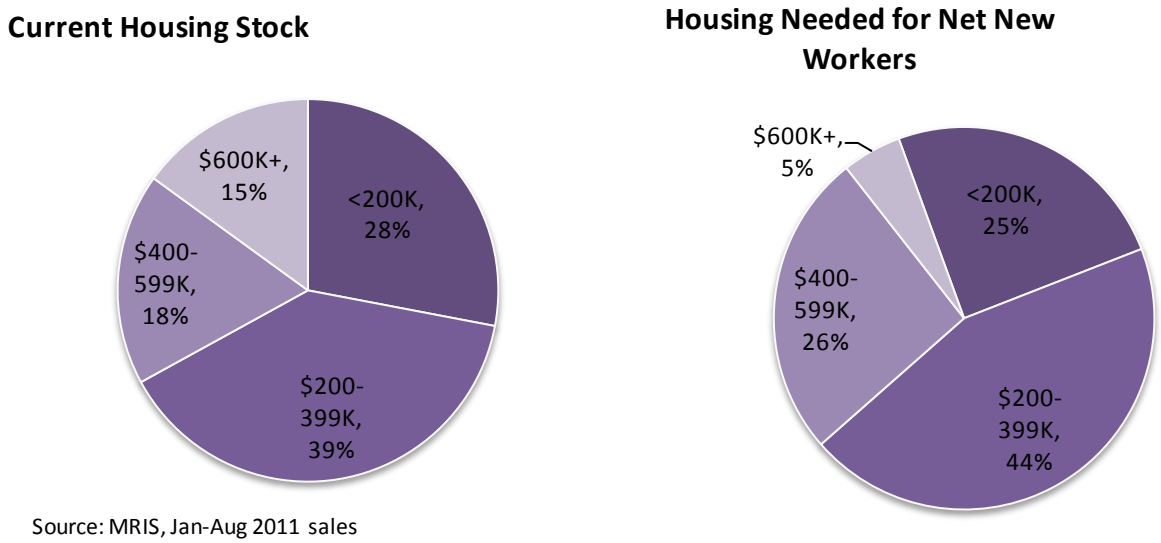
Source: American Community Survey

Figure 2. Comparing Owner versus Rental Unit Types: Existing and Needed



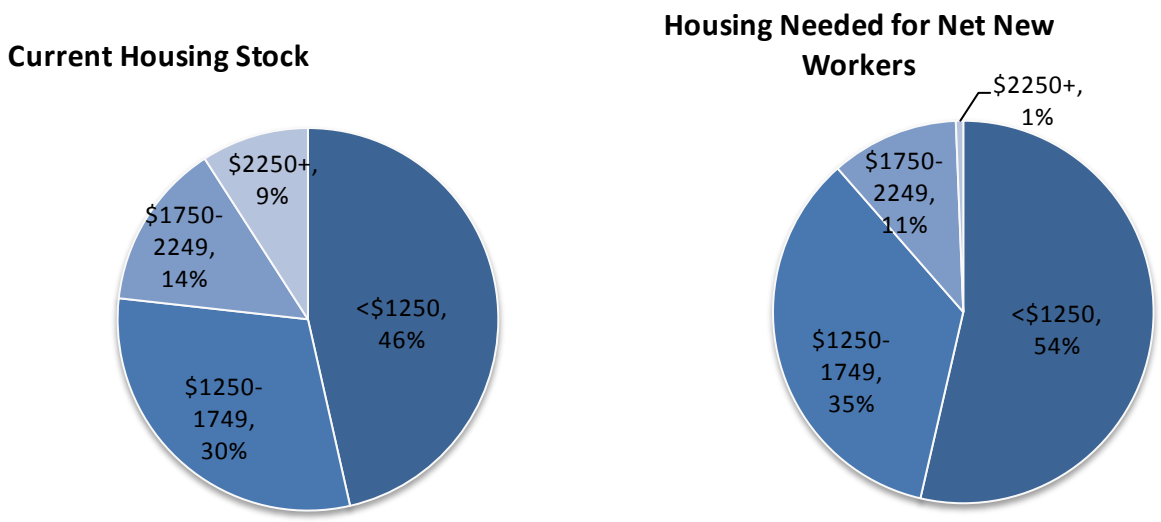
Source: American Community Survey

Figure 3a. Comparing Home Prices: Existing and Needed



Source: MRIS, Jan-Aug 2011 sales

Figure 3b. Comparing Rents: Existing and Needed



Source: American Community Survey

The Role of Housing in Achieving the Washington Metropolitan Area's Economic Potential

Regional Economic Outlook

The economic forecasts for the Washington metropolitan area point to continuing gains in income and employment over the coming two decades. These gains will be achieved even as the region's economy adjusts to significant changes in its sectoral structure and their respective performances following the Great Recession of 2008-2009 and the redefined role of the federal government as a major force in the metropolitan area economy. While the regional economy is not projected to grow as fast in the coming two decades as it has in the last two decades, it is positioned to add as many as one million net new jobs, a potential gain of 38 percent over today's employment level.

But beyond the sheer number of jobs being added, the region will also experience an even greater change in the mix of its existing workforce over this period as Baby Boomers retire (their departure from the workforce will accelerate each year going forward and peak in 2017-2018). Combined with the normal turnover of workers in the workforce (workers relocating outside of the region, choosing not to work for a variety of reasons, or switching jobs to a different sector), the demand for workers not currently in the workforce to backfill these replacement positions is estimated to total 1.8 million.

These changes—net new jobs and replacement jobs—will accelerate the structural changes naturally occurring in the region's economy. As a result, the economic growth (gain in gross regional project) projected for the Washington region over the 2010-2030 period is 82 percent (inflation adjusted), increasing its GRP from $425 billion in 2010 to $775 billion in 2030. This significant gain in GRP, far exceeding net new job growth, suggests that the economy in 2030 will be substantially different than it is today and that the types of jobs being added will consist of disproportionally higher value added positions than the job mix that characterizes today's economy.

Risks to the Region's Economic Outlook

While this economic forecast suggests that the Washington region has significant growth potential and that its economy will remain robust and vital, these projections raise important challenges. They are not guaranteed. In order for the Washington metropolitan area to secure this potential economic growth it will need to meet the labor force requirements of this new economy as well as the other critical supporting requirements, including transportation services, water and sewage treatment capacity, and the cultural, social, environmental and other amenities that have made the region attractive to workers moving here from other regions in the U.S. and the world. And, most importantly, the region will need to be able to meet the housing requirements of this new workforce.

As of 2010, the Washington metropolitan area was more dependent on non-resident workers—commuters coming in daily to work from outside its borders and returning home each night—than any other metropolitan area in the country. This demand for labor not residing in the metropolitan area is seen in the area's highway congestion and crowded commuter trains. While this percentage may not seem large at 4.25 percent, it translates into approximately 230,000 long-distance commuters coming and going every day. Besides the traffic generated by this commuting (the Washington area now ranks number one in congestion delays)[1], this pattern generates a significant transfer of GRP generated within the Washington area economy ($17.5 billion) to places of residence outside the region where it is spent and taxed.

If these commuting patterns persist as the Washington area grows over the coming 20 years due to an insufficient increase in the region's housing supply (not just as measured in the number of units but also the tenure and price mix), this dependence on non-resident workers to fill the region's jobs is projected to grow to 8.75 percent by 2030 and account for a loss of $68 billion (in 2010$s) that year from the regional economy significantly reducing its tax base and retail market potential. This increased dependency on non-resident workers would increase the number of workers commuting into the region every day to work to 700,000 and more than double the demand of transport services to accommodate these work trips. Clearly, the region does not have the financial capacity or the land to build its way out of this looming problem of inadequate inter-regional transportation.

A principal source of this looming transportation problem is the inadequate supply of housing within the region to house its workforce. The inadequate supply of housing is also the source of the traffic congestion that is generated from intra-regional (i.e. jurisdiction-to-jurisdiction) commuting. If more workers working in the Washington area lived in the Washington area the requirements for interregional transportation would decline. And, if more workers working in each of the Washington region's jurisdictions lived in the jurisdiction within which they worked, the intra-regional transportation congestion for which the Washington area has become famous could be reduced.

The consequences of not having enough housing to house the region's future workforce close to where this workforce will be working are enormous. Even if the long-distance commuting capacity could be provided, there would still be a significant transfer of wealth out of the region to adjacent jurisdictions, an erosion of the region's tax base, and serious environmental effects, not to mention the unnecessary consumption of energy and loss of personal time and efficiency. But, not having these long-distance commuters to do the region's work would seriously threaten the Washington region's economic growth potential going forward. Housing the workforce is key to the Washington region being able to sustain its economic vitality and to achieve its economic growth potential.

[1] Schrank, David, Tim Lomax, and Bill Eisele. 2011. *TTI's 2011 Urban Mobility Report*. Texas Transportation Institute, The Texas A&M University System.

Housing Policy and the Region's Economic Development

Housing needs to be thought of as an economic development strategy. Those jurisdictions that have sufficient housing to accommodate a growing proportion of their future workforce requirements will have a competitive advantage over jurisdictions that must import their workers. Jurisdictions that have sufficient housing for their workforce will not have to provide the same transportation services that jurisdictions dependent on non-resident workers will have to provide.

For the Washington region to grow efficiently and reduce its dependence on imported labor, all jurisdictions need to have a housing policy that reflects their specific housing requirements to accommodate future economic growth and the workforce demands that this growth implies. Today, no jurisdiction in the Washington area has a housing policy designed to respond adequately to its economic growth potential and workforce requirements.

Housing is where the workforce lives, it is where workers spend a large proportion of their income and where they pay their taxes. Recognizing and institutionalizing this critical link between housing and economic growth is critical to the future viability of the Washington region's economy. The Washington region cannot achieve its future growth potential without having the workforce to support this expanding economy. And, this workforce will not be available to the region's future businesses in the absence of sufficient housing, located to minimize the need to commute, and priced at levels fitting the ranges of jobs and incomes projected for the Washington region over the next 20 years. Without meeting the region's future demand for housing the Washington area will not maintain its position as one of the most advanced and dynamic economies among the nation's metropolitan areas and will lose position to other metropolitan area economies that have achieved the necessary balance between housing and their future workforce requirements.

Employment-Driven Forecasts of Housing Demand in the Washington Metropolitan Area

The objective of this research is to forecast the amount of housing that will be required to house the region's future workers in order to help ensure that the region can achieve its future economic potential. This research starts with jobs as the driver of demand for housing and uses assumptions about workers' wages, age structure, and household composition to forecast the amount, type and price of housing that the region will need over the 2010 – 2030 period.[2] Specifically, this research addresses four questions:

1. **How much housing will be needed to house the region's new workers?** The forecasts assess the amount of housing that will be needed to accommodate the region's net new workers between 2010 and 2030, including an analysis of this need relative to recent construction trends.

2. **Where should this housing be located?** With the goal of keeping levels of traffic congestion from getting worse over the next two decades, the housing demand forecasts explicitly link the location of needed housing to the locations of new jobs, at the jurisdiction level.

3. **What types of housing units will be needed?** In addition to understanding the overall amount of housing needed, these forecasts assess the demand for single-family (detached and townhouses) and multi-family housing, and owner and rental housing.

4. **What prices and rents will new workers be able to afford?** The housing available to the region's future workforce must be priced at levels that are affordable. The forecasts take the wages of new jobs into account to forecast housing need at different price and rent levels.

How much housing will be needed to house the region's new workers?

If each jurisdiction in the Washington metropolitan area supplied enough housing to house all of its future workers, the region would need to add 731,457 net new housing units between 2010 and 2030 (Table 4.) These "high" forecasts assume that all new workers are housed in the jurisdiction in which they work and therefore the volume of intraregional commuting levels will not increase from present levels.

[2] The detailed methodology is included in the Appendix. The year 2010 is used as the beginning of the forecast period for the sake of convenience.

Table 4. Estimates of Housing Demand: 2010 – 2030
Washington DC Metropolitan Area
High and Low Estimates*

Jurisdiction	High Estimates	Low Estimates
District of Columbia	**122,613**	**36,784**
Calvert	9,764	8,007
Charles	13,608	8,029
Frederick	27,336	19,956
Montgomery	108,522	69,454
Prince George's	52,382	28,286
Suburban Maryland	**211,612**	**133,731**
Alexandria	30,922	6,494
Arlington	34,342	8,929
Clarke	744	431
Fairfax	110,947	52,145
Fauquier	6,870	4,740
Loudoun	98,171	51,049
Prince William	55,065	30,286
Spotsylvania	30,375	13,061
Stafford	22,680	11,793
Warren	2,702	1,756
Northern Virginia	**392,817**	**174,191**
Jefferson Co WV	4,414	3,576
Washington MSA	**731,457**	**348,282**

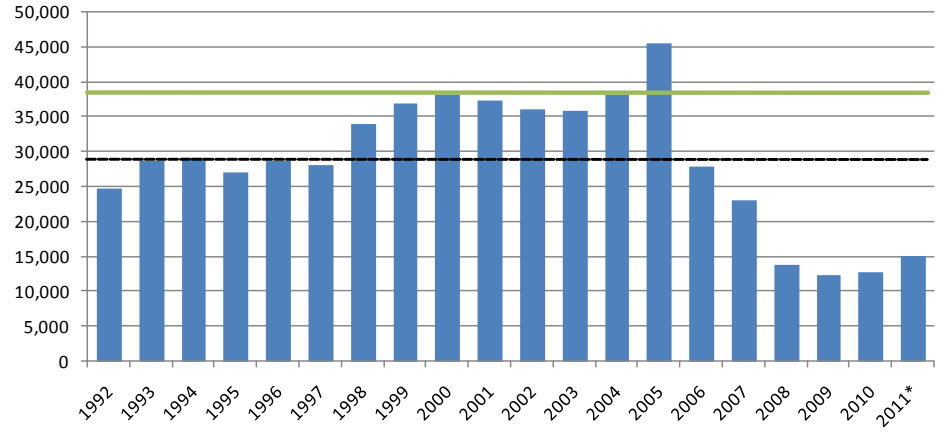
*The high estimates assume all new workers housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes. The low estimates assume that new jobs in each jurisdiction have the same in-commuting rates as current jobs.

Of course, not all of the workers in a jurisdiction live in the jurisdiction in which they work. Households with multiple workers live in one jurisdiction while the workers might commute to different jurisdictions. Some people choose to live outside the jurisdiction in which they work for reasons other than the commute, such as proximity to natural resources or family. Some people are recent job changers, taking a new job within the region without changing their residence. However, there are many people who would like to live closer to where they work but cannot find adequate and affordable housing. As a consequence of all of these factors, there is a substantial amount of intraregional commuting. There is also a steady stream of commuters on highways and railways coming into the region from jurisdictions outside the region.

As part of these housing demand forecasts, a "low" series of estimates were produced that assumes that the net new jobs in each jurisdiction have the same in-commuting rates as current jobs. That is, each jurisdiction houses only a portion of its new workers over the next 20 years. The current level of in-commuting varies considerably from jurisdiction to jurisdiction. For example, about 70 percent of jobs in the District of Columbia are held by people who live outside of the city. By contrast, only 18 percent of jobs in Calvert County, Maryland are held by non-Calvert County residents. Based on the assumption of continued in-commuting rates, the region would need to add 348,282 net new housing units over the next 20 years. These "low" estimates imply that an additional half a million people who work in the Washington metropolitan area would live outside the region. These low forecasts would create an intolerable level of congestion on the region's roads and transit system.

To limit the strain on the region's transportation, to maintain the region's high quality of life, and to keep more economic activity in the region, the "high" forecasts provide the best goal for housing production. The "high" estimates imply that the region would need to add more than 38,000 new housing units each year between now and 2030. Over the past 19 years, the region has averaged 28,600 building permits each year (Figure 4.) Since the bursting of the housing bubble in 2006 and 2007, the amount of residential construction has dropped dramatically. The number of building permits issued in the Washington metropolitan area has dropped to historically low levels in 2009 and 2010. While there is some indication that building activity has picked up somewhat in the region—particularly in multi-family rental construction inside the Beltway—the number of residential building permits issued in 2011 is still expected to be below recent levels and far below what it needed to achieve an adequate supply of housing. These housing demand forecasts indicate a need for a jump start of the residential construction sector and sustained building activity in the years to come.

Figure 4
Residential Building Permits
Washington Metropolitan Area



Source: U.S. Census Bureau
*Annualized 2011 total based on data through June

Where should this housing be located?

Because the majority of the region's job growth over the next 20 years will occur in Northern Virginia, the demand for housing is greater there than in Suburban Maryland. Between 2010 and 2030, there will be a need for 392,817 new housing units in Northern Virginia to house its 578,480 new workers, with more than half of these units needed in Fairfax and Loudoun counties. In Suburban Maryland, there will be a demand for 211,612 net new units to accommodate 316,525 future workers, and more than half of the new housing in Suburban Maryland will be needed in Montgomery County. An increase of 152,130 jobs in the District of Columbia suggests a need for 122,613 housing units over the next 20 years if all of the District's new workers were to be housed in the city.

Nearly two-thirds of the new housing needed over the next 20 years will be needed in the region's core or Beltway jurisdictions, a subregion that includes the District of Columbia, Montgomery and Prince George's counties in Maryland, and the city of Alexandria, and Arlington and Fairfax counties in Virginia. While 63 percent of the future housing need is forecasted for these jurisdictions, the pattern of residential construction activity has been focused on the more suburban jurisdictions. Over the last 19 years, less than half of all of the building permits issued in the Washington metropolitan area were in one of the core or Beltway jurisdictions. This share has declined over the past two decades, from 56 percent of all residential building permits in 1992 to 44 percent in 2010.

In addition to the core and Beltway jurisdictions, there will be significant demand for housing in Loudoun County as a result of its strong anticipated job growth. Between 2010 and 2030, Loudoun County would need to add 98,171 net new housing units to house nearly 150,000 new workers, which suggests construction of about 5,000 units per year. This level of construction activity is not unprecedented in Loudoun County. In 2002 through 2006, the county issued more than 6,000 residential building permits each year. On average, over the past 19 years there has been an average of 4,234 building permits issued annually in the county.

These housing demand forecasts do not suggest locations for housing *within* jurisdictions. However, based on the assessment of the need for housing of different types and price/rent ranges (see below), a substantial portion of the housing that will be needed by future workers will need to be located close to established and growing employment centers, near transit and transportation networks and in more compact developments.

What types of housing units will be needed?

The housing forecasts include an assessment of the demand for four different types of housing units—single-family owner, single-family rental, multi-family owner, and multi-family renter. (Single-family includes both single-family detached homes and townhouses. Multi-family includes units in rental and condominium buildings.)

The types of housing that will be needed to accommodate new workers over the next 20 years reflect the changing demographics of workers and the mix of future jobs in the region. The single biggest need over the next two decades will be for multi-family rental units. About 39 percent of the housing unit forecasts—285,644 units—are in the multi-family rental category (Table 5.) The next biggest category is the single-family owner category, where there will be a need for 236,990 housing units over the next 20 years. There will also be demand for 162,136 owner-occupied multi-family units, or condominium units. Only a small percentage of the housing unit forecasts—6.4 percent—will be single-family rental units.

Table 5. Estimates of Housing Demand by Unit Type: 2010 – 2030
Washington DC Metropolitan Area
High Estimates*

Jurisdiction	Total Units	Single-Family		Multi-Family	
		Owner	Renter	Owner	Renter
District of Columbia	**122,613**	**8,308**	**1,578**	**38,386**	**74,340**
Calvert	9,764	4,261	1,206	1,226	3,071
Charles	13,608	6,109	1,432	1,655	4,413
Frederick	27,336	12,235	3,211	3,393	8,498
Montgomery	108,522	29,989	6,669	24,588	47,276
Prince George's	52,382	17,827	2,589	10,292	21,673
Suburban Maryland	**211,612**	**70,421**	**15,108**	**41,153**	**84,931**
Alexandria	30,922	2,020	422	8,390	20,090
Arlington	34,342	3,036	478	12,035	18,792
Clarke	744	342	85	95	221
Fairfax	110,947	46,031	5,223	32,381	27,312
Fauquier	6,870	3,362	731	914	1,864
Loudoun	98,171	49,976	9,791	13,570	24,833
Prince William	55,065	25,942	6,141	7,569	15,413
Spotsylvania	30,375	13,331	3,897	3,791	9,356
Stafford	22,680	10,906	2,422	2,940	6,412
Warren	2,702	1,227	318	330	827
Northern Virginia	**392,817**	**156,173**	**29,508**	**82,015**	**125,121**
Jefferson Co WV	4,414	2,087	494	582	1,251
Washington MSA	**731,457**	**236,990**	**46,687**	**162,136**	**285,644**
		283,677		**447,780**	

*The high estimates assume all new workers are housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes.

These housing demand forecasts suggest a need for 283,677 single-family houses and 447,780 multi-family housing units. Thus, over 60 percent of the housing units needed for the region's net new workers will be multi-family, while less than 40 percent will be single-family. The region's current housing stock, by contrast, is 67 percent single-family and 33 percent multi-family (Table 6.)

There will also be a shift in the homeownership rate for future residents of the Washington DC region, largely due to changes in the age structure and household compositions of new workers. Currently, the homeownership rate in the region is 64 percent. However, only 55 percent of the new workers to the region over the next 20 years will live in owner-occupied units, while 45 percent will rent. The shifts in housing type and owner/renter status suggest a need for changes in builders' approaches to new home construction and local governments' policies for guiding residential development in order to accommodate this needed household growth.

Table 6. Comparing Unit Types: Existing and Future Housing
Washington DC Metropolitan Area

Jurisdiction	Current Housing Stock (%)*	Housing Needed for Net New Workers (%)
Single-Family	67	39
Multi-Family	33	61
Owner	64	55
Renter	36	45

*2009 American Community Survey

What prices and rents will new workers be able to afford?

To ensure that new workers are able to live in the region, housing must be available at the right prices and rents. The region's housing must be priced so that it is affordable to new workers. While the Washington metropolitan area will continue to attract many high-wage jobs over the next 20 years, the new workers coming to the region will have wages all along the income spectrum. Furthermore, a growing share of workers will live alone and will therefore have only one income. As a result, the Washington region will need a substantial amount of housing at relatively moderate prices and rents.

Of the 1.05 million net new jobs that will be added to the region's economy, the strongest growth will be in the professional and technical services and management sector, where there is expected to be more than 370,000 net new jobs added between 2010 and 2030 (Table 7.) These jobs tend to be relatively high wage jobs—the median wage for professional and technical services jobs in the region is $75,000 compared with an overall median wage of

$44,000. However, there will be strong job growth regionally in a number of other sectors, including those with lower wages. The region will add 129,701 jobs in the administrative and waste services sector, 117,304 jobs in the health services sector, and 94,928 jobs in the construction sector. These sectors all have median wages below the overall median.

Table 7. Employment Forecasts by Sector: 2010 - 2030
Washington DC Metropolitan Area

Sector	Net New Jobs	Median Wage ($)
Total	1,053,855	44,000
Construction	94,928	35,000
Manufacturing	-2,505	56,000
Transportation & Utilities	24,972	37,000
Wholesale Trade	14,384	38,000
Retail Trade	61,689	20,000
Information	23,900	65,000
Finance & Insurance	16,438	55,000
Real Estate	15,061	45,000
Prof & Tech Services; Management	370,412	75,000
Admin & Waste Services	129,701	27,500
Education	41,343	40,000
Health Services	117,304	35,000
Leisure & Hospitality	51,057	14,750
Other Services	26,773	35,000
Government	60,497	75,000
Military	7,901	75,000

Source: IHS Global Insight, 2009 American Community Survey. Data on military wages were not available from the ACS. Therefore, the median wage for military employment was assumed to be the same as the median wage for government employment.

The median wages were used to calculate household incomes and to estimate home prices and rents that are affordable to the region's net new workers. It was assumed that the maximum affordable home price was four times the household income, while the maximum rent depended on household income and did not exceed 30 percent of household income (Table 8.)

About one-quarter of the owner-occupied units that will be needed—98,314 units—will need to be priced below $200,000 (Table 9.) About 44 percent will need to be priced between $200,000 and $399,999 and 26 percent between $400,000 and $599,999. Only about five percent of the forecasted owner-occupied units will need to be priced at $600,000 or higher.

Table 8. Household Income and Maximum Home Prices and Monthly Rents

Household Income	Home Price	Monthly Rent
Less than $50,000	Less than $200,000	Less than $1,249
$50,000-74,999	$200,000-299,999	$1,250-1,314
$75,000-99,999	$300,000-399,999	$1,315-1,749
$100,000-124,999	$400,000-499,999	$1,750-1,874
$125,000-149,999	$500,000-599,999	$1,875-2,249
$150,000 or more	$600,000 or more	$2,250 or more

There will also be a substantial need for moderately priced rental units. Based on this analysis, there will be a demand for 178,138 rental units with rents below $1,250 per month (Table 10.) These units constitute about 54 percent of the total forecasted rental units. Another 35 percent will need to have rents between $1,250 and $1,749. Only 11 percent are in the $1,750 to $2,249 rental range and less than one percent of the forecasts rental units will have rents of $2,250 or more.

The demand for moderately priced owner and rental units does not mean that all of these more affordable units must be new construction. In some markets, it would be very difficult to build new units at these lower prices and rents without significant subsidy. These forecasts suggest that the preservation of existing affordable owner and rental housing is essential for ensuring a sufficient supply of affordable housing for the region's future workforce.

Table 9. Estimates of Housing Demand: 2010 – 2030
Owner-Occupied Units
Washington DC Metropolitan Area
High Estimates*

Jurisdiction	Total Owner-Occupied Units	Home Price (2010 $s)			
		Less than $200,000	$200,000 – 399,999	$400,000 – 599,999	$600,000 or More
District of Columbia	46,694	8,189	25,595	12,911	0
Calvert	5,487	2,477	1,978	997	35
Charles	7,763	3,581	3,448	631	103
Frederick	15,628	6,567	8,298	763	0
Montgomery	54,577	16,712	23,109	12,073	2,684
Prince George's	28,119	8,767	15,506	3,846	0
Suburban Maryland	**111,574**	**38,104**	**52,339**	**18,309**	**2,821**
Alexandria	10,410	1,322	7,808	4,529	1,413
Arlington	15,072	184	202	49	2
Clarke	437	4,129	27,664	37,077	9,543
Fairfax	78,412	1,571	1,724	867	113
Fauquier	4,275	18,703	27,522	15,454	1,868
Loudoun	63,547	10,896	15,407	6,011	1,196
Prince William	33,511	7,128	7,740	1,902	352
Spotsylvania	17,122	4,311	5,491	2,363	1,679
Stafford	13,846	761	615	160	21
Warren	1,557	1,959	4,122	3,341	989
Northern Virginia	**238,188**	**50,965**	**98,294**	**71,752**	**17,177**
Jefferson Co WV	2,669	1,056	1,081	491	41
Washington MSA	**399,125**	**98,314**	**177,309**	**103,463**	**20,039**

*The high estimates assume all new workers are housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes.

Table 10. Estimates of Housing Demand: 2010 – 2030
Renter-Occupied Units
Washington DC Metropolitan Area
High Estimates*

Jurisdiction	Total Owner-Occupied Units	Monthly Rent (2010 $s)			
		Less than $1,250	$1,250 – 1,749	$1,750 – 2,249	$2,250 or More
District of Columbia	**75,919**	**39,893**	**25,089**	**10,937**	**0**
	0				
Calvert	4,278	3,180	942	154	2
Charles	5,845	4,653	1,019	168	5
Frederick	11,708	8,312	3,141	256	0
Montgomery	53,945	31,257	19,804	2,654	230
Prince George's	24,262	13,761	9,440	1,061	0
Suburban Maryland	**100,038**	**61,163**	**34,346**	**4,293**	**236**
Alexandria	19,270	6,422	7,702	4,684	462
Arlington	307	203	96	7	0
Clarke	32,535	7,595	15,546	8,552	842
Fairfax	2,595	1,686	786	117	6
Fauquier	34,624	20,613	11,788	2,130	93
Loudoun	21,555	13,009	7,642	830	74
Prince William	13,253	9,561	3,377	298	17
Spotsylvania	8,834	5,816	2,583	356	79
Stafford	1,145	818	303	23	1
Warren	20,512	10,188	6,433	3,631	260
Northern Virginia	**154,629**	**75,910**	**56,257**	**20,629**	**1,833**
Jefferson Co WV	**1,745**	**1,170**	**489**	**84**	**2**
Washington MSA	**332,331**	**178,136**	**116,181**	**35,942**	**2,071**

*The high estimates assume all new workers are housed in the jurisdiction in which they work and jurisdiction-to-jurisdiction commuting levels will not increase from present volumes.

Study Limitations

The demand for housing depends on a number of factors. Modeling this housing demand necessarily involves making several simplifying assumptions. Some of the complexity of housing need will be excluded from the analysis. Some of the limitations of the research are described briefly in this section.

The housing demand forecasts exclude the housing needed to accommodate replacement workers. There is a need for 731,457 housing units to house the 1.05 million net new workers that will be needed in the region between 2010 and 2030. Over the same time, there will be a need for 1.80 million replacement workers, as the current workforce ages and retires. Some retiring workers will leave the region, thus freeing up a housing unit for a new or replacement workers. However, many of the retiring workers will stay in the region. It is estimated that over a 20-year period, about 40 percent of people age 55 and older move out of state. Thus, when workers in the Washington DC region retire, the majority stay in their houses in the region.[3] *As a result, the housing demand forecasts presented in this report understate the actual need for housing.*

It is assumed that there are no major shifts in the housing unit preferences of future cohorts or in the direction of Federal policies related to homeownership. These forecasts are based on data on the housing characteristics of current residents by age group, household composition and household income in order to make estimates of future housing needs. This method assumes that there are no major changes in the housing unit preferences of future cohorts. Some housing professionals and researchers have suggested that future cohorts will shift their housing preferences to more rental housing and more compact housing closer to transit.[4] It is unclear whether a major shift in housing preferences would actually materialize, particularly over the relatively short time period of two decades. *If there is a shift, however, there will be an even greater demand for multi-family units and more compact single-family development.*

In addition, this research makes no assumptions about the direction of Federal policies related to homeownership which might make owning relatively less attractive or feasible over time. If there are major changes to federal tax treatment of mortgage interest deduction (which is unlikely, particularly in the short term) or on downpayment and other requirements for securing a home mortgage, then homeownership may be less desirable or less achievable for future workers. *Thus, there could be a shift to a need for more rental housing in the region.*

It is assumed that workers' housing location choices are related solely to their place of work. The "high" forecasts were generated to keep current jurisdiction-to-jurisdiction commuting levels constant over the next 20 years. The means to achieving this goal is to place all workers'

[3] Sergeant, Julie F., David J. Ekerdt, and Rosemary Chapin. 2008. "Measurement of Late-Life Residential Relocation: Why Are Rates for Such a Manifest Event So Varied?" *Journal of Gerontology* 63B(2): S92-S98.
[4] See, for example, *Generation Y in the Marketplace,* a presentation by RCLCO available at www.rclco.com.

homes in the jurisdictions in which they work. This is obviously an oversimplified assumption. Many households with multiple workers have work places in different jurisdictions. Workers have become increasingly more mobile with respect to work, changing jobs more frequently than in the past. And while telecommuting is still a small part of the labor force, with a very small share of workers regularly working from home, some workers are not tied to a physical workplace.

These housing demand forecasts are not meant to suggest that people should live in the same jurisdiction in which they work. Rather, these forecasts provide general guidance for the amount of housing that would be required so that workers have the options for affordable housing closer to where they work. *The overall quantity of housing needed could be redistributed slightly throughout the region given other factors that influence housing choice.*

Policy Implications

Housing needs to be included as a component of local economic development strategies. For the Washington region to grow efficiently and achieve its economic potential, all jurisdictions need to have a housing policy that reflects the specific types of housing needed to accommodate future workers. The results of these housing demand forecasts suggest several implications for local housing policy.

Local jurisdictions are planning for an insufficient amount of housing to accommodate future workers. The Washington metropolitan area jurisdictions, in cooperation with the Metropolitan Washington Council of Governments (MWCOG), produce forecasts of housing units as part of the MWOG cooperative forecasting process.[5] According to the most recent forecasts, local jurisdictions anticipate about 556,000 additional housing units between 2010 and 2030. This level of new housing is insufficient to house the 1.05 million net new workers, suggesting a deficit of about 175,000 units, or about 254,000 new workers that will live outside the region and commute in. If the 1.8 million replacement workers are taken into consideration, the amount of housing the local jurisdictions are planning for vastly understates the need.

The deficit varies substantially across the region (Table 11.) Generally, the MWCOG forecasts for the outer suburbs are higher than the housing need suggested by the employment-driven housing demand forecasts. In Northern Virginia, there is a deficit of 88,608 units when the MWCOG cooperative forecasts are compared to the employment-driven housing forecasts. The biggest deficit is in Loudoun County, where the employment growth suggests a need for 98,171 net new units in Loudoun County between 2010 and 2030 while the county is forecasting only 47,878 new housing units over the 20 year period. In Suburban Maryland, there is a deficit of

[5] The local jurisdictions and MWCOG produce forecasts of population, households and employment. The household forecasts are used as an estimate of housing unit forecasts. The latest forecasts are Round 8 and were completed in 2010.

24,696 units when the MWCOG forecasts are compared with the need suggested by future job growth. Montgomery County will need 108,522 to accommodate its future workers but the county currently forecasts that there will be 77,500 new housing units in the county over the next 20 years. In the District of Columbia, there is a difference of 70,568 units, primarily due to the large share of in-commuters in the District.

The MWCOG forecasts suggest not only a continuation of housing suburbanization but also—more importantly—suggest that the region's jurisdictions overall are not planning for enough housing to accommodate the region's future workers. The lack of housing in the region will mean that more workers will live outside the region and commute in, worsening traffic congestion and resulting in relatively slower regional economic growth as a greater share of GDP leaves the region each night.

Table 11. Comparison of Employment-Driven Housing Forecasts and MWCOG Round 8 Forecasts: 2010 - 2030

	Employment-Driven Forecasts	MWCOG Forecasts	Deficit
District of Columbia	**122,613**	**52,045**	**-70,568**
			0
Calvert	9,764	6,302	-3,462
Charles	13,608	23,261	9,653
Frederick	27,336	35,417	8,081
Montgomery	108,522	77,500	-31,022
Prince George's	52,382	42,800	-9,582
Suburban Maryland	**211,612**	**186,916**	**-24,696**
Alexandria	30,922	23,923	-6,999
Arlington	34,342	23,731	-10,611
Clarke	744	2,239	1,495
Fairfax	110,947	101,869	-9,078
Fauquier	6,870	36,283	29,413
Loudoun	98,171	47,878	-50,293
Prince William	55,065	62,050	6,985
Spotsylvania	30,375	26,102	-4,273
Stafford	22,680	29,346	6,666
Warren	2,702	N/A	N/A
Northern Virginia	**392,817**	**304,209**	**-88,608**
Jefferson Co WV	4,414	12,648	8,234
Washington MSA	**731,457**	**555,818**	**-175,639**

More housing is needed closer to jobs, in existing and growing regional employment centers. The Washington DC region will add 1.05 million net new jobs over the next 20 years. The fastest job growth will be in Loudoun County where the number of jobs will increase from 140,381 in 2010 to 287,290 in 2030. Significant job growth is also forecasted for the District of Columbia, Fairfax County and Montgomery County. Together, these four jurisdictions account for more than 60 percent of the region's job growth over the next 20 years. Therefore, 60 percent of the region's net new housing units should be located in these jurisdictions. The MWCOG forecasts call for only half of the region's new units in these four jurisdictions.

Locating new housing near existing and growing employment centers provides opportunities for mixed use developments that make more efficient use of transportation networks and other infrastructure. More compact and mixed use developments are increasingly in demand by households both in urban and suburban communities.

There is a need for more multi-family housing and smaller, more affordable owner and renter homes in the region. The housing demand forecasts suggest that the housing that will be needed by the region's future workforce will be smaller than the current housing stock, including more multi-family units (i.e. rental and condominium), and will need to include a substantial share with moderate rents and prices. Thus, new workers will demand not only multi-family units but they will also need smaller single-family detached homes and townhouses. The reason for this shift relates to the changing demographics of the labor force and the distribution of wages of new jobs. There will be a greater share of single-person and two-person households among the future labor force. The workers coming to the region for new jobs will be somewhat younger than the existing labor force. While there will be many relatively high paying jobs in the region over the next 20 years, there will also be a substantial number of jobs in relatively lower wage jobs. Many of these lower wage jobs are critical supporting jobs to the higher wage professional and business services sector, including the administrative and waste services sector, the retail trade sector and the leisure and hospitality sector.

Not all of the moderately priced housing will results from new construction. In fact, in many places in the region, lower priced housing is difficult to build without some form of public subsidy. Therefore, it is essential that steps are taken to inventory and preserve the market rate affordable housing that currently exists, particularly units in fast-growing and in-demand jurisdictions.

A lack of a sufficient supply of housing contributes to worsening traffic and quality of life and threatens our region's economic vitality. The "high" estimates of housing demand assume that the level of jurisdiction-to-jurisdiction commuting does not increase, while the "low" estimates assume that the level of traffic and transit flows between jurisdictions and into the region from outside will increase. The Washington DC region has already been called out for having the worst traffic congestion of any major U.S. metropolitan area. A lack of sufficient housing will lead to increased traffic congestion, causing commuters to spend more time in

traffic, reducing productivity and quality of life. As other parts of the country experience economic recovery and jobs growth, workers may choose to leave the Washington DC area for places with more affordable housing closer to their jobs to avoid long, stressful commutes. Employers will have a more difficult time attracting workers as commutes lengthen and housing becomes more unaffordable, particularly as workers' options increase across the U.S.

Currently, 4.25 percent of the Washington area's GRP leaks out of the region as workers commute to their homes in jurisdictions outside the metropolitan area boundaries. Thus, these workers pay taxes and buy goods and services outside of the region, contributing to the local economy outside of the region. The leakage is partly an artifact of the drawing of our region's boundaries (for example, Howard County and Anne Arundel County, Maryland, while tied closely to the Washington region, are part of the Baltimore metropolitan statistical area); however, it is also a result of the difficulty of finding sufficient affordable housing in closer-in locations. It is estimated that by 2030, the share of GRP that will leave the region will be eight percent or higher. Thus, a lack of a sufficient supply of housing—in the right locations, of the right unit mix, and with the right prices and rents—is essential for ensuring the Washington metropolitan area can achieve its economic potential.