

JOBS-HOUSING RATIOS: NATIONAL PERSPECTIVES AND REGIONAL AND LOCAL BENCHMARKS



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PREFACE

Since the early 1990s, Fairfax County planning policy has emphasized the need for mixed-use development in activity centers and transit station areas, with housing as a significant component. However, there is no specific guidance on jobs-housing ratios. This paper addresses the concept through a review of the national literature. It then discusses regional and local benchmarks for jobs-housing ratios in transit-oriented developments in the metropolitan Washington area. This paper is intended to provide guidance as to what jobs-housing ratios may be appropriate for transit station areas and other mixed use centers in the county.

In 2003, the American Planning Association published a Planning Advisory Service (PAS) report entitled *Jobs-Housing Balance*. The report describes the concept as “a planning tool that local governments can use to achieve a roughly equal number of jobs and housing units (or households) in a jurisdiction.” The academic studies reviewed in the report found that acceptable ranges of jobs-housing ratios were between 1.3:1 to 1.7:1 (Weitz, p. 4). Such ratios are appropriate for large geographic areas, such as the region or an entire county. Since the late 1990s, the Metropolitan Washington Council of Governments (COG) has advocated a jobs-housing goal for the region of 1.6 jobs per household. Fairfax County has consistently achieved this regional goal.

For successful mixed-use centers at transit station areas in the region, the jobs-housing ratio is significantly higher than 1.6:1. This is because such centers are rich in jobs, with office and other employment uses concentrated close to transit. COG data shows that four of these centers – Rosslyn, Ballston, Bethesda and Silver Spring – have jobs-housing ratios between 3.4:1 and 6.0:1 in 2005. Two of the centers, Bethesda and Silver Spring, are projected to reduce their jobs-housing ratios to 3.3:1 and 3.0:1 by the year 2040, while Rosslyn and Ballston’s jobs-housing ratios are projected to be 5.6:1 and 3.5:1, or roughly the same.

Fairfax County has emerging mixed-use centers such as Tysons Corner and Merrifield/Dunn Loring. In 2005 their jobs-housing ratios were between 11.3:1 and 12.4:1. However, these jobs-housing ratios are projected to decline by 2040, to 5.5:1 (Merrifield) and 8.6:1 (Tysons). When residential buildout occurs, their jobs-housing ratios are expected to be 5.0:1 (Merrifield) and 4.1:1 (Tysons).

Based on the experience in the Washington region, future transit station areas and other mixed-use centers should generally be planned for a jobs-housing ratio between 3.0:1 and 6.0:1. Centers with jobs-housing ratios significantly above 6.0:1 are not true mixed-use centers, but rather employment or business centers. Examples of

employment centers in the D.C. metropolitan area are included in Appendix A. Centers with jobs-housing ratios significantly below 3.0:1 are not true mixed-use centers either, but rather urban residential neighborhoods.

Balancing residential and nonresidential development in transit station areas and mixed-use centers will result in higher levels of both daytime and nighttime activity and more vibrant places. Improving the jobs-housing balance can create economic and social opportunities by providing a mix of residential, office, retail, cultural and recreational uses. Further, mixed-use centers with jobs located close to housing are places where people may be able to walk, bicycle or take transit, reducing traffic congestion. Finally, improving the jobs-housing ratios in the county and the region should result in a sustainable pattern of land development for the long-term future.

This report includes five appendices. Appendix A contains COG data on the jobs-housing ratios in 46 centers in the Washington region. Appendix B covers planning history in Fairfax County between 1970 and the present. Appendix C discusses alternatives to the jobs-housing ratio. Appendix D covers the causes of jobs-housing imbalance, and Appendix E discusses solutions to jobs-housing imbalance.

JOBS-HOUSING RATIOS: NATIONAL PERSPECTIVES AND REGIONAL AND LOCAL BENCHMARKS

Introduction

Planning efforts in Fairfax County have long advocated smart growth principles. Back in the 1970s, the Planned Land Use System (PLUS) emphasized creating local employment centers and decreasing dependency on the automobile through a reduction in work trips and an emphasis on mass transit. The Planning Horizons process of the late 1980s expanded upon the PLUS effort. It emphasized the need for mixed-use development in activity centers and transit station areas, with housing as a significant component.

Also in the 1980s, planning researchers began exploring the optimum proportion of residential to nonresidential uses, or jobs-housing balance. Jobs-housing ratios were created to measure the degree of balance within regions. More recently, jobs-housing ratios have been used to compare different types of mixed-use centers within regions.

The purpose of this paper is to define jobs-housing balance and jobs-housing ratios based on a review of the literature. The first section of the paper discusses a range of jobs-housing measurements. It also considers the varied issues that must be considered in arriving at an acceptable jobs-housing ratio, while at the same time recognizing that the jobs-housing ratio is not the only factor that affects an acceptable jobs-housing balance. The related issues include causes of jobs-housing imbalance, solutions in overcoming jobs-housing imbalance, and associated benefits of a good jobs-housing balance. A full consideration of these issues places the concepts of jobs-housing balance and jobs-housing ratio in a meaningful context. If a broad spectrum of issues is not considered, then a jobs-housing balance or a jobs-housing ratio may not be sufficient to achieve planning objectives.

The last section of this paper focuses on jobs-housing ratios in the metropolitan Washington region and in Fairfax County. The paper concludes with a guideline for a range of jobs-housing ratios for future transit station areas and mixed-use centers. Including residential development in these areas will result in higher levels of both daytime and nighttime activity and more vibrant mixed-use centers.

National Perspectives on Jobs-Housing Balance

According to the American Planning Association (APA), “Jobs-housing balance is a planning tool that local governments can use to achieve a roughly equal number of jobs and housing units (or households) in a jurisdiction. The notion of balancing jobs and housing goes well beyond trying to attain numerical equality. Ideally, the jobs available in a community should match the labor force skills, and housing should be available at

prices, sizes, and locations suited to workers who wish to live in the area. Hence, there is a qualitative as well as a quantitative component to achieving jobs-housing balance. Jobs-housing balance is a planning technique rather than a regulatory tool.” (1)

The Housing Partnership, a non-profit housing alliance in King County, Washington, states that, “The jobs-housing balance should be seen as an essential benchmark that indicates the degree to which land use planning and regulatory systems are themselves in balance, such that sub-regions can support their own economic growth within their boundaries.” (2) Regardless of the measure used, jobs-housing balance should be a mid-to-long range goal accomplished in various steps as a result of jurisdictional decisions over a period of time. (3)

Achieving a jobs-housing balance is typically advocated through calculation of what is known as a “jobs-housing ratio.” Three common methods of calculating a jobs-housing ratio are:

1. Jobs-housing units ratio (which includes vacant housing units).
2. Jobs-households ratio (also known as *jobs-occupied housing units ratio*).
3. Jobs-employed residents ratio (also known as *jobs-labor force ratio*).

According to the APA, “A ratio of jobs to housing is most commonly used to express the concept of jobs-housing balance. Generally and simply stated, the jobs-housing ratio is a ratio between a measure of employment and a measure of housing in a given area of analysis.” (4)

The question then becomes, “Which measurement is best?” According to the APA, “The goal of a jobs-housing balance policy is usually to match the number of working opportunities (jobs) with the number of living opportunities (housing units) in a given area. ... Despite its potential shortcomings, however, the jobs-to-housing-unit ratio is the most common measure of jobs-housing balance, and it is certainly an adequate measure so long as the applied jobs-housing balance standard is adjusted to account for the average number of workers per housing unit in the region or locality.” The APA also states that “the number of resident workers – the actual labor force – is the best measure to use, if available. Any other measures used to estimate the number of working opportunities in an area must be used with some caution. If, for example, a community relies on the number of housing units or households to represent demand for working opportunities in a measure of jobs-housing balance, that measure may inaccurately represent the actual number of workers living in a community: one housing unit or household may consist of any number of workers, or it may consist of no workers.” (5)

The California Planning Roundtable, a group providing policy guidance to the California Chapter of the APA, contends that utilizing the jobs-labor force (i.e., employed residents) ratio is preferred, as it offers an ease of comparison and understanding because “parity can be expressed as a one-to-one ratio, i.e., one local job to one local worker, notwithstanding that there will be a small proportion of multiple job holders.” (6) It should also be noted that the Virginia Transportation Research Council has concluded that utilizing the jobs-labor force ratio is a suitable alternative to the jobs-housing ratio to fulfill the requirements of the Code of Virginia. Section 33.1-23.03 of the code requires that the Statewide Transportation Plan include quantifiable measures relating to jobs-to-housing ratios. This requirement may be satisfied by using the ratio of jobs to labor force, as this ratio is highly correlated with the jobs to housing ratio. (7)

A comparison of two common jobs-housing measurement ratios (jobs-housing units and jobs-employed residents) as suggested by the APA are illustrated in Chart 1.

Chart 1

Common Jobs-Housing Measurements and Standards

<i>Jobs-Housing Measurement</i>	<i>Recommended Target Standard (Implies Balance)</i>	<i>Recommended Target Range (Implies Balance)</i>	<i>Reference</i>
Jobs to housing units ratio	1.5:1	1.3:1 to 1.7:1 Or 1.4:1 to 1.6:1	Ewing 1996 Cervero 1991
Jobs to employed residents ratio	1:1	0.8:1 to 1.25:1	Cervero 1996

Source: Weitz, *Jobs-Housing Balance*, p. 4.

While the APA recommends that the ideal number of jobs to housing units is 1.5:1, the California Planning Roundtable (CPR) states that, “Defining what constitutes a balance between jobs and housing is not an easy task. Assuming a simple ratio of one job to one household is inappropriate to modern economies that have many households with more than one person in the workforce...” (8)

An example of calculating the jobs-labor force ratio can be taken from the Atlanta Regional Commission (ARC), which computed the jobs-labor force ratio for Forsythe County, Georgia. The Georgia Department of Labor had an employment estimate of 31,295 jobs for Forsythe County in 1999. The county’s labor force in the year 2000 was 55,727 persons, giving a jobs-labor force ratio of 0.56:1, indicating that the County was

jobs poor with a great number of persons commuting outside the County in order to work. (9)

An example of calculating the jobs-housing ratio is provided with data from the Housing Partnership (HP), studying the Puget Sound region (northwest Washington State including Seattle in King County). In this case, depending on the method chosen, a jobs-housing ratio will yield different results due to the different variables involved, as shown in Charts 2 and 3 that follow.

Chart 2

**2004 Jobs-Housing Ratio for Puget Sound
Covered Employment and Housing Units**

<i>County</i>	<i>Covered Employment</i>	<i>Housing Units</i>	<i>Ratio</i>
King	1,093,698	785,995	1.39:1
Kitsap	80,304	97,928	0.82:1
Pierce	249,387	300,084	0.83:1
Snohomish	210,600	256,757	0.82:1
<i>Total</i>	1,663,989	1,440,774	1.13:1

Data from Puget Sound Regional Council and Washington State Department of Employment Security. Table from The Housing Partnership, *Jobs and Housing: Can't Have One Without the Other*, p. 10.

Chart 3

**2000 Jobs-Housing Ratio for Puget Sound
Total Employment and Households**

<i>County</i>	<i>Total Employment</i>	<i>Households</i>	<i>Ratio</i>
King	1,188,577	710,926	1.67:1
Kitsap	83,934	86,416	0.97:1
Pierce	258,991	260,800	0.99:1
Snohomish	217,291	224,834	0.97:1
<i>Total</i>	1,748,793	1,282,966	1.36:1

Data from Puget Sound Regional Council. Table from The Housing Partnership, *Jobs and Housing: Can't Have One Without the Other*, p. 10.

As depicted in Chart 2, the HP made a calculation of “covered employment,” i.e., those workers covered by Washington State’s unemployment insurance program (which does not account for all jobs that exist) versus housing units (which counts total number of units and does not account for vacant units). Chart 3 depicts a different calculation methodology, utilizing figures for total employment (which could include persons with multiple or part-time jobs) versus households (which includes only occupied units). The difference in the two calculation methods resulted in an average ratio for the counties of 1.13:1 for covered employment-housing units and a ratio of 1.36:1 for total employment-households. It must be kept in mind that when one talks about finding the acceptable jobs-housing ratio, one should not be looking at the ratio as some immediate goal, but as a general indicator as to whether development projects are headed in the right direction over time. There are too many factors that affect the jobs-housing ratio as a measurement for it to be considered a precise tool. According to the CPR, the jobs-housing ratio is better used as a quantitative *indicator* than *objective*. (10) The CPR’s recommendation echoes the observation of the APA mentioned earlier. In addition, the Virginia Transportation Research Council states that there is no single numerical criterion to define good jobs-housing balance, although recognizing jobs-housing balance is used to make policy decisions. (11) In addition, they indicate that one performance measure that demonstrates that a location is balanced is the ratio of jobs-housing in a particular location compared to adjacent areas. Different studies have shown a balanced jobs-housing ratio to be approximately 1.25:1 (Singa et al., 2004), 1.0:1 to 1.29:1 (Armstrong et al., 2001), 0.8:1 to 1.2:1 (Frank, 1994), and 1.2:1 to 2.8:1 (Peng 1997). (12)

There are other ratios or benchmarks of jobs-housing balance, which are discussed in Appendix C.

Causes of Jobs-Housing Imbalance

There are numerous causes that can contribute to a jobs-housing imbalance. Thirteen of these causes are summarized in Chart 4 below, from the planning and zoning, transportation, and general public policy perspectives. These causes are discussed in detail in Appendix D.

Chart 4

PERSPECTIVE	CAUSES OF JOBS-HOUSING IMBALANCE
Planning and Zoning	<ul style="list-style-type: none"> + Mismatch in Quantity of Jobs vs. Housing Available + Mismatch in Types of Jobs vs. Housing Available + High Housing Prices + Lack of Vacant Land or Zoned Capacity + Lag Time to Build Housing + Specialized Local Economies (e.g. emphasis on government employment vs. more balanced employment) + Outdated Zoning Restrictions + Decisions Not to Live Closer to Where One Works
Transportation	<ul style="list-style-type: none"> + Inadequate Highway Infrastructure + Inadequate Transit Infrastructure + Unbalanced Mode Choice (e.g. Predominate Choice of Utilizing Single Occupancy Vehicle)
Public Policy	<ul style="list-style-type: none"> + Jurisdictions Not Addressing Own Jobs-Housing Imbalance + Jurisdictions Not Considering Regional Transportation Needs

Solutions to Jobs-Housing Imbalance

There are various solutions for improving a jobs-housing imbalance. Twelve of these solutions are summarized in Chart 5, from the planning and zoning, transportation and public policy perspectives. These solutions are discussed in detail in Appendix E.

Chart 5

PERSPECTIVE	SOLUTIONS TO IMPROVE JOBS-HOUSING IMBALANCE
Planning and Zoning	<ul style="list-style-type: none"> + Adequate Land Development and Zoning Policy + Mixed-Use Development + Affordable Housing Program + Density Bonuses, Incentives, and Flexibility in Land Development
Transportation	<ul style="list-style-type: none"> + Redirection of Future Growth to Reduce Congestion and Vehicle Miles Traveled + Transit-Oriented Development + Transportation Demand Management Program + Transportation Infrastructure Improved/Expanded
Public Policy	<ul style="list-style-type: none"> + Considering More than Only a Jobs-Housing Ratio + Regional and Interregional Partnerships to Redirect Future Growth + Statewide or Public Sector Tax and Incentive Programs + Jurisdictional and Regional Goals

The focus of this paper now shifts from national perspectives to regional and local benchmarks.

Benchmarks for Metropolitan Washington

Since the late 1990s, the Metropolitan Washington Council of Governments (COG) has advocated a jobs-housing goal for the region. As of 2005, that ratio is 1.6:1, based on assessment of the region's current and future labor force. (13) Such a ratio is appropriate for large geographic areas, such as Fairfax County. The county has consistently achieved the regional goal.

In 2003 Jerry Weitz authored Planning Advisory Service Report 516, *Jobs-Housing Balance*. This report includes a review of the academic studies related to jobs-housing balance. Those studies indicate that an acceptable range of jobs-housing ratios may be between 1.3:1 to 1.7:1 (Ewing, 1996), or between 1.4:1 to 1.6:1 (Cervero, 1991). Again, these ratios are applicable to large geographic areas such as the region or Fairfax County as a whole. (14)

Beginning in 2003, COG has identified over 50 Regional Activity Centers, including 13 in Fairfax County. The centers are intended to be used as a tool to guide land use and transportation planning decisions. COG has also identified three potential policy uses for the centers:

- Increasing the share of future employment in the centers
- Concentrating residential growth in the Regional Activity Centers
- Concentrating growth in transit station and commuter rail station areas

When jobs-housing ratios are calculated for Regional Activity Centers, they are significantly higher than countywide or regional ratios. Table 1 includes 2005 and 2040 jobs-housing ratios, compiled by COG staff, for some established mixed-use centers in the region.

Table 1
Jobs-Housing Ratios in
Established Mixed-Use Centers in DC Region

<i>Name of Center</i>	<i>2005 Ratio</i>	<i>2040 Ratio</i>
Rosslyn	6.0:1	5.6:1
Ballston	3.4:1	3.5:1
Bethesda	5.6:1	3.3:1
Silver Spring	5.6:1	3.0:1
<i>Average</i>	<i>5.2:1</i>	<i>3.8:1</i>

Source: Table 1, Draft Revised Round 7.0 Regional Activity Centers with Round 8.0 Cooperative Forecast, Metropolitan Washington Council of Governments

The table shows that these centers have jobs-housing ratios between 3.0:1 and 6.0:1 in both 2005 and 2040. One reason that ratios are higher at transit station areas is that they are rich in jobs. In terms of transit-oriented development planning policy, office and other employment uses should be concentrated within ¼ mile of transit, as workers typically do not want to walk longer than ¼ mile from the station to their place of work. Residents are willing to walk further, so it makes sense to locate more housing beyond ¼ mile of transit. (15)

Of the four established centers in Table 1, the only center not projected to significantly reduce its jobs-housing ratio by 2040 is Ballston. Ballston’s commercial areas are already surrounded by residential development. The other three centers all propose to increase their residential components, with both Bethesda and Silver Spring lowering their jobs-housing ratios by almost half.

Goals for Fairfax County

Fairfax County has several emerging mixed-use centers such as Tysons Corner and Merrifield/Dunn Loring. Their 2005 and projected 2040 jobs-housing ratios are shown in Table 2.

Table 2
Jobs-Housing Ratios in
Emerging Mixed-Use Centers in Fairfax County

<i>Name of Center</i>	<i>2005 Ratio</i>	<i>2040 Ratio</i>	<i>Plan Potential</i>
Merrifield/Dunn Loring	11.3:1	5.5:1	5.0:1
Tysons Corner	12.4:1	8.6:1	4.1:1

Source: Table 1, Draft Revised Round 7.0 Regional Activity Centers with Round 8.0 Cooperative Forecast, Metropolitan Washington Council of Governments

As with Bethesda and Silver Spring, by 2040 Merrifield is projected to reduce its jobs-housing ratio by roughly half. Tysons' ratio is projected to decline from over 12:1 to under 9:1 by 2040. In fact, by the time of Tysons' residential buildout, its jobs-housing ratio is estimated to reach 4.1:1, or a third of its level in 2005. (16) (It should be noted that the 2040 ratio does not reflect the 2010 Comprehensive Plan Amendment for Tysons. The effects of that amendment will be included in later rounds of COG's Forecast but were not included in Round 8.0, on which this table is based.)

This range is similar to the ranges of successful existing and emerging mixed-use centers in the Washington metropolitan area. Therefore, based on the review of national literature and experience in the Washington region, future transit station areas and other mixed-use centers should generally be planned for a jobs-housing ratio between 3.0:1 and 6.0:1. Centers with jobs-housing ratios significantly below 3.0:1 are not true mixed-use centers but rather more like urban residential neighborhoods.

Centers with jobs-housing ratios significantly above 6.0:1 are also not true mixed-use centers, but rather employment or business centers. Examples of employment centers are included in Appendix A, and are discussed briefly here.

COG has a hierarchy of types of activity centers, ranging from the D.C. Core down to Emerging Employment Centers. The three types of activity centers that apply to Fairfax County are described below. Over time most of the Employment Centers and Suburban Employment Centers should evolve into Mixed Use Centers.

Mixed Use Centers are defined by COG as urban in character, with areas up to two square miles, and containing either a dense mix of retail, employment, and residential activity or significant levels of employment and housing. Mixed Use Centers are accessible by transit or commuter rail and by major highways. Rosslyn, Ballston,

Bethesda, and Silver Spring are all Mixed Use Centers. Of the 13 such centers in Appendix A, their 2005 jobs-housing ratios range between 2.5:1 to 18.1:1. The average for these centers is a 2005 jobs-housing ratio of 4.6:1. By 2040 their average jobs-housing ratio is projected to be 3.5:1.

Employment Centers are defined by COG as higher density areas up to 3.5 square miles, and containing significant concentrations of employment. Employment Centers are generally urban or becoming more urban in character. There are eight such centers in Appendix A with 2005 jobs-housing ratios ranging from 5.8:1 to 92.9:1. The average for these centers is a 2005 jobs-housing ratio of 16.0:1. By 2040 their average jobs-housing ratio is projected to be 7.8:1.

Suburban Employment Centers are considered more dispersed, lower density areas of less than six square miles. Of the 24 Employment Centers in Appendix A, their 2005 jobs-housing ratios range from 1.1:1 to 727.5:1. The average for these centers is a 2005 jobs-housing ratio of 5.7:1. By 2040 their average jobs-housing ratio is projected to be 4.8:1. (17)

Conclusions

Balancing residential and nonresidential development in transit station areas and mixed-use centers will result in higher levels of both daytime and nighttime activity and more vibrant places. Improving the jobs-housing balance can create economic and social opportunities by providing a mix of residential, office, retail, cultural and recreational uses. Further, mixed-use centers with jobs located close to housing are places where people may be able to walk, bicycle or take transit, reducing traffic congestion. Finally, improving the jobs-housing ratios in the county and the region should result in a sustainable pattern of land development for the long-term future.

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APPENDIX A
 JOBS/HOUSING RATIOS IN REGIONAL ACTIVITY
 CENTERS, ROUND 8.0 COOPERATIVE FORECAST

Mixed-Use Centers

<i>Center Name</i>	<i>2005 Ratio</i>	<i>2040 Ratio</i>
Eisenhower Avenue	8.7:1	6.0:1
Downtown Alexandria	4.0:1	3.1:1
Ballston/Virginia Square	3.4:1	3.5:1
Clarendon/Court House	2.8:1	2.6:1
Crystal City	4.3:1	4.0:1
Pentagon City	3.1:1	2.7:1
Rosslyn	6.0:1	5.6:1
Friendship Heights	2.5:1	2.6:1
Baileys Crossroads/Skyline	3.9:1	3.6:1
Bethesda CBD	5.6:1	3.3:1
Silver Spring CBD	5.6:1	3.0:1
White Flint	14.9:1	3.3:1
Twinbrook	18.1:1	3.9:1
<i>Average</i>	<i>6.4:1</i>	<i>3.6:1</i>

Employment Centers

<i>Center Name</i>	<i>2005 Ratio</i>	<i>2040 Ratio</i>
The Pentagon	n/a	n/a
Herndon	5.8:1	6.0:1
Merrifield/Dunn Loring	11.3:1	5.5:1
Reston East	n/a	5.4:1
Reston West	16.7:1	4.8:1
Tysons Corner	12.4:1	8.6:1
National Institutes of Health	92.9:1	115.3:1
Rock Spring Park	56.2:1	17.6:1
<i>Average</i>	<i>32.6:1</i>	<i>27.2:1</i>

APPENDIX A (Continued)

Suburban Employment Centers

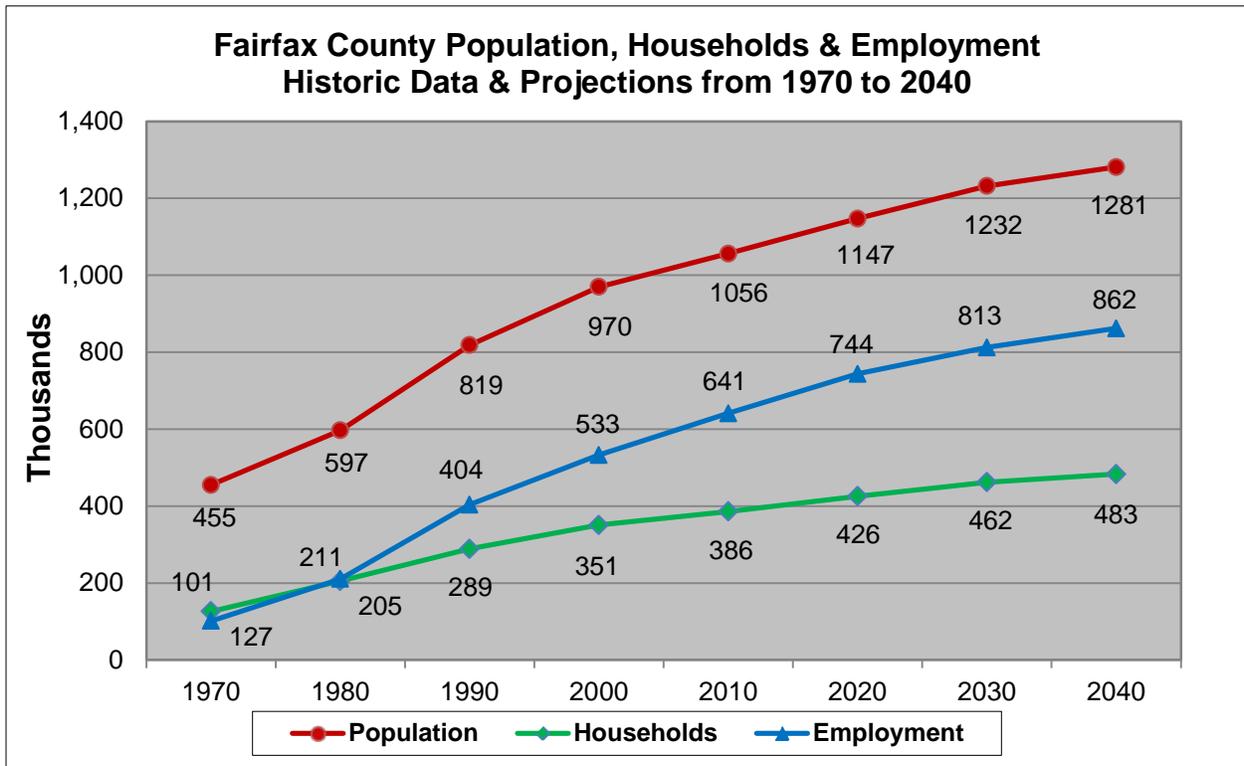
<i>Center Name</i>	<i>2005 Ratio</i>	<i>2040 Ratio</i>
Beauregard Street	1.1:1	1.5:1
Waldorf Commercial	18.1:1	14.4:1
Beltway South	40.1:1	15.1:1
Dulles Corner	3.3:1	2.7:1
Dulles East	22.4:1	6.9:1
Dulles West	54.5:1	34.0:1
Fairfax Center	3.4:1	3.2:1
I-95 Corridor/Engineer Proving Ground	418.3:1	603.8:1
Springfield	10.0:1	7.6:1
City of Fairfax-GMU	3.9:1	4.0:1
MD 85/355 Evergreen Point	4.7:1	3.0:1
Downtown Leesburg	2.7:1	3.3:1
Corporate Dulles	71.7:1	20.1:1
Germantown	5.7:1	4.2:1
North Frederick Avenue	4.9:1	3.8:1
Rockville Town Center	3.7:1	3.1:1
Shady Grove/King Farm/Life Sciences	9.5:1	5.8:1
White Oak	1.5:1	3.7:1
US 1 Green Line	6.1:1	3.7:1
Greenbelt	6.4:1	5.2:1
New Carrollton	19.1:1	7.3:1
Route 1	3.9:1	3.6:1
Konterra	727.5:1	18.1:1
Potomac Mills	91.2:1	3.2:1
<i>Average</i>	<i>63.9:1</i>	<i>32.6:1</i>

Source: Metropolitan Washington Council of Governments, Spring 2012.

Appendix B History of Planning in Fairfax County

The concept of a jobs-housing balance has stirred the interest of the planning profession for a couple of decades. “It is said that a house is where a job goes at night,” and that “the exact relationship between housing and job creation has proved elusive.” (1). As metropolitan areas grow and traffic congestion and vehicle miles traveled (VMT) increase, jobs-housing balancing has become a de facto discussion topic when analyzing proposed development projects. For Fairfax County, creating an acceptable mix of jobs near housing continues to be a salient issue. In fact, Fairfax County is in the “eye of the storm” of the Washington, D.C., metropolitan area, having experienced a burgeoning population growth to over one million residents along with an exponential increase in jobs, as shown in Chart 1.

Chart 1



Sources: Fairfax County Demographic Reports and COG Round 8.0.

Between 1970 and 2010 population has more than doubled (from 455,000 to 1,056,000), households have more than tripled (from 101,000 to 386,000), and employment has grown five-fold (from 127,000 to 641,000). By 2040, the population is projected to be almost 1.3 million, the number of households will exceed 480,000, and the number of jobs is expected to be over 860,000. The past growth contributed to an

escalation in housing prices and put a severe strain on the transportation infrastructure. This in turn has increased congestion not only in the county but in the region as a whole.

If these projections are achieved without changes in development patterns, transportation infrastructure will further deteriorate, with the region becoming even more congested. Therefore, Fairfax County's Comprehensive Plan states, "A more efficient land use pattern is needed. By bringing together jobs and housing in an attractive, harmonious manner, the opportunity will be created to reduce commuting in both time and distance." (2). In fact, other metropolitan areas and jurisdictions across the country, large or small, also need to address the jobs-housing issue, especially as the current economy recovers. One west coast housing partnership observed in 2005 that, "In the current planning regime, no one is in charge of ensuring that housing development matches job development, so while we congratulate ourselves on pulling our economy out of the rut of the past several years, we consign more and more people to punishing commutes." (3).

However, as indicated earlier, the history of Fairfax County planning shows that the issues of concentrating employment locations, reducing commute time, and encouraging mixed-use development have been part of the county's planning objectives for over 20 years. Mixed-use development has been encouraged for each development center and transit station area, in order to introduce a residential element to these areas and to take advantage of the associated transportation benefits. As far back as the 1970's, citizens and public officials were voicing concern about controlling the rapid growth in the county. This concern resulted in the creation of the Planned Land Use System (PLUS) in 1973 and a major update of the Comprehensive Plan in 1975 (the first Plan dated from the 1950's). Two of the PLUS core principles included increasing local employment and decreasing dependency on the automobile, achieved through reduction in the length of work trips and increased accessibility to mass transit. (4)

By the late 1980's, the Board of Supervisors requested a reassessment of land use planning in the county. The Planning Horizons process was begun in 1988 and resulted in the approval of a Countywide Policy Plan in 1990 along with the adoption of the four Area Plans in 1991. The revised 1991 Comprehensive Plan retained many of the components of the 1975 Plan, such as increasing local employment growth in centers and reducing reliance on the automobile. In addition, the Policy Plan developed a hierarchy of goals, objectives and policies for many different functional areas of the planning process including land use, transportation and the environment, and today addresses a total of 11 functional areas along with a Chesapeake Bay Supplement. (5)

Another document developed during Planning Horizons was the Concept for Future Development. The concept highlighted the generalized land use pattern that was to guide future development and included the Land Classification System. This identified certain areas that would be expected to share similar development characteristics by 2010. Again there was an emphasis on mixed-use development, as the Concept Map indicated that virtually all employment growth should take place within designated development centers, transit station areas, and industrial areas. (6)

END NOTES TO APPENDIX B

1. The Housing Partnership, *Jobs and Housing: Can't Have One Without the Other*, Seattle, December 2005, pp. 1-2.
2. Fairfax County Department of Planning and Zoning, *The Comprehensive Plan for Fairfax County, Virginia, Policy Plan, Land Use Element*, Appendix 11, "Guidelines for Transit-Oriented Development," p. 3.
3. The Housing Partnership, p. 18.
4. Fairfax County Department of Planning and Zoning, *The Comprehensive Plan for Fairfax County, Virginia, Policy Plan, Preface*, p. 16.
5. *Ibid.*, pp. 16-18.
6. *Ibid.*, pp. 17-18.

Appendix C

Other Ratios or Benchmarks of Jobs-Housing Balance

There are other ratios, benchmarks or indexes that have been employed to gain a grasp of the jobs-housing balance for a given area, with some examples below.

1. Jobs-Housing Growth Ratio. This method is a longitudinal approach that was used by the Washington Research Council in comparing the number of jobs added versus the number of housing units added over a given period of time. Specifically, the study included the subareas of King County, Washington (Seattle region), and measured the effects of increasing jobs versus housing units during the period 1990-1999. As shown in Chart C-1, there was a more balanced jobs-housing growth ratio in the South County and a disproportionate growth in jobs over housing in the Westside and Eastside communities, resulting in a jobs-housing imbalance at the end of this 10-year period.

Chart C-1

Subareas of King County, Washington

<i>Characteristic</i>	<i>South County</i>	<i>Westside</i>	<i>Eastside</i>
Approximate Jobs Added, 1990-1999	62,000	81,000	110,000
Approx. Housing Units Added, 1990-1999	33,000	18,000	31,000
Jobs-Housing Growth Ratio, 1990-1999	1.91:1	4.50:1	3.56:1
Jobs-Housing Ratio, 1999	1.51:1 <i>(balanced)</i>	2.04:1 <i>(unbalanced)</i>	1.85:1 <i>(unbalanced)</i>

Note: Approximate jobs and housing units added determined from a histogram. Absolute numbers not provided in original source (Washington Research Council, 2000).

Source: Weitz, *Jobs-Housing Balance*, p. 11.

2. Affordability Index. This tool was developed in 2002 by the Georgia Regional Transportation Authority (GRTA), building on an earlier effort known as a “Development of Regional Impact (DRI)” program administered by the Georgia Department of Community Affairs. GRTA provisions require a DRI applicant to study the project’s impact in relationship to development in its “Area of Influence (AOI).” An AOI extends six road miles from the development in all directions, to make sure there is a balance of land uses. There are rules requiring extensive investigations of the qualitative relationships between jobs and housing, including three jobs-housing benchmarks requiring that:
 - a) 10% of the persons who are reasonably anticipated to be employed in the DRI can live in the DRI.

- b) 25% of persons reasonably anticipated to be employed in the DRI would be able to afford to live within the AOI.
 - c) 25% of persons who are reasonably anticipated to live in the DRI and are reasonably expected to be employed have an opportunity to find employment appropriate to their qualifications within the AOI. (1)
3. Jobs-Housing Ratio Compared to Income. Related to the above, this approach compares the jobs-housing ratio with the proportion of income needed to purchase a home within a jurisdiction. For example, if a jurisdiction has a high jobs-housing ratio and a high percentage of mean or median income, affordable housing is needed. (2)
 4. Smart Growth Index - The Environmental Protection Agency (EPA). This method creates a ratio of jobs to population called “diversity,” which shows the impact of changing the jobs-housing balance in a jurisdiction or region and its effect in reducing total vehicle trips and vehicle miles traveled (VMT). EPA findings show that the doubling of the diversity indicator resulted in a 5% reduction in VMT, and a 6% reduction in the number of vehicle trips for persons working in the neighborhood measured. (3)
 5. Commute Shed. “A commute shed is defined as a labor market around a major concentration or center of employment in which the great majority of workers will be able to find suitable housing, and the great majority of residents will be able to find employment within the employment center.” (4)

END NOTES TO APPENDIX C

1. Jerry Weitz, *Jobs-Housing Balance*, American Planning Association, Chicago, 2003, pp. 29-30.
2. John S. Miller, *Feasibility of Using Jobs/Housing Balance in Virginia Statewide Planning*, Virginia Transportation Research Council, August 2010, p. 9.
3. California Planning Roundtable, *Deconstructing Jobs-Housing Balance*, 2008, p. 6.
4. *Ibid.*, p. 11.

Appendix D Causes of Jobs-Housing Imbalance

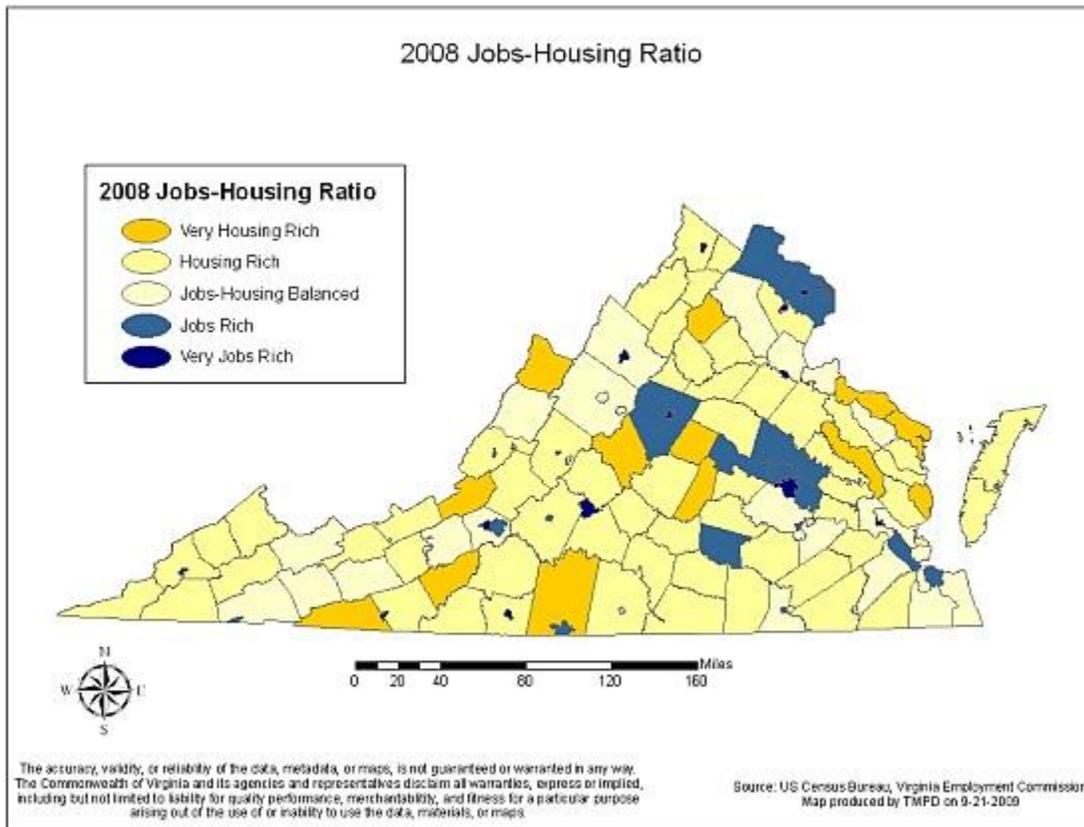
There are a number of factors that can cause a jobs-housing imbalance, which can be considered from the planning and zoning, transportation, and public policy perspectives.

Planning and Zoning

Mismatch in Quantity of Jobs vs. Housing Available

According to the Virginia Transportation Performance Report of 2008, Fairfax and Loudoun Counties were jobs rich, and Prince William County was housing rich, thus illustrating a quantitative imbalance. Chart D-1 shows the jobs-rich and housing-rich areas of the Commonwealth of Virginia for the year 2008.

Chart D-1



Source: Virginia Secretary of Transportation, *Commonwealth of Virginia Transportation Performance Report*, p.2.

In particular, Chart C-1 indicates that certain other Northern Virginia localities in 2008 were very employment rich, all being incorporated cities. These cities have a jobs-housing ratio greater than 1.6:1, including the jurisdictions of Fairfax City, Manassas, Manassas Park and Winchester. (1) Further, the Virginia Transportation Performance Report of 2007 points out that Prince William County, of the large counties in Virginia, had the lowest share of employed workers living in the same county. (2)

Mismatch in Types of Jobs vs. Housing Available

According to the American Planning Association, there are four “typologies” of jobs-housing imbalance, as shown in Chart D-2. The typologies do not address a quantitative deficiency in the jobs-housing ratio, but rather incongruence in the types of housing available for the types of jobs available.

Chart D-2

Typology of Jobs-Housing Imbalances

<i>Type of Imbalance</i>	<i>Jobs</i>	<i>Housing Units</i>	<i>Example</i>
Type 1	Too many low-wage	Too few low-end	Suburban employment centers (edge cities)
Type 2	Too many high-wage	Too few high-end	Downtown employment areas in central cities
Type 3	Too few low-wage	Too much low-end	Older suburbs and central city neighborhoods
Type 4	Too few high-wage	Too much high-end	High-income bedroom Communities

Source: Weitz, *Jobs-Housing Balance*, p. 5.

Type 1 indicates that an area is jobs-rich and needs more housing for low-wage workers such as entry-level retail, service, or moderately-skilled workers. Policy needs to be developed so that affordable housing is constructed close to the job center, which meets the price ranges of these workers.

Type 2 would indicate an area is jobs-rich and needs more housing for higher wage workers, such as executives, managers and professionals. However, where high-end job creation is greatly outpacing comparable residential building, the lower-end housing is snapped up by the higher-end wage workers, creating fewer affordable houses for lower-skilled workers.

Type 3 shows that the area is jobs-poor and needs more employment opportunities for the resident lower wage labor force. The area is likely predominately residential, housing low-wage workers who do not have nearby employment opportunities to match their skills, and economic development needs to occur to accommodate these workers.

Type 4 indicates that the area is jobs-poor but has a highly-skilled resident labor force. This could result from land-use policy decisions to maintain the residential character of the area. (3)

All in all, the above scenarios depicted in Chart D-2 are caused by a mismatch between the types of jobs and the types of housing units, or a qualitative housing imbalance.

High Housing Prices

A jobs-housing imbalance can cause housing demand from high income job-rich areas to spill over to more affordable areas. If the right mix of jobs and housing is not built, higher income groups may drive up the price of closer-in housing, thereby forcing lower income persons looking for jobs to move further out. Because more affordable areas are tied to their own job base, the rising prices caused by spillover demand push workers in a previously affordable area out, and they in turn spill over to the next most affordable area. (4) For example, in the Northern Virginia region, numerous Spotsylvania County and Fredericksburg area residents commute to Fairfax and Arlington Counties and Washington D.C., because affordable housing is not available in the closer-in areas.

Lack of Vacant Land or Zoned Capacity

Related to the above, a shortage of vacant land or zoned capacity coupled with job growth pushes up the price of land. The result is an increase in the price of homes, leading to a shortage of lower-priced dwelling units.

In the City of Seattle, which is located in King County, the Housing Partnership theorizes that a family earning \$70,000 per year could afford a home valued at \$300,000. New homes at \$300,000 are virtually impossible to find in East King County, but can be found in South King County. Therefore, although there are numerous jobs in East King County paying \$70,000, families cannot afford to live there as there is a jobs-housing imbalance in the moderately-priced home-buying market. The difference boils down to land availability and cost.

Nearly all land available for housing construction is normally zoned, so one can easily see whether there is enough land for the various types of housing that the market demands. An inadequate stock of zoned land results in too few of a particular type of housing unit available, affecting prices.

Looking at the City of Seattle again, abundant zoning exists for multi-family housing but not for single family dwellings. There has been a rising demand for rental units and several thousand units have come on the market in the past several years. Yearly permits for multi-family housing units increased from an average of 1,800 per year (1990-1998) to 4,450 per year (1999-2004). This huge increase in supply caused rents to remain stable, and actually fell from the peak in 1998. However, during this same period, the addition of single family units was comparably small while demand for single family houses continued strong, causing prices for single family dwellings to actually increase by 10% per year. As there is a serious jobs-housing imbalance with respect to single family homes, families are forced to look into surrounding counties for affordable housing. (5)

Fairfax County also faces a dwindling supply of vacant land. Between 1975 and 2010, acres of vacant land decreased from over 94,000 to less than 15,000. (6) Vacant land now represents around 6% of the land in the county. (7)

Lag Time to Build Housing

When business cycles slow down, home builders are likely to reduce housing construction so that they are not left with surplus inventory. However, when business cycles rebound, they can rebound quickly, resulting in large numbers of jobs added in a short period of time. At this point there may be little housing planned for development, and it can take a period of time to bring new housing to fruition. (8)

Special Localized Economies

Local economies may be specialized due to local government decisions to focus zoning on a particular industry (e.g. government). (9) The Washington, D.C. area is especially affected by government employment decisions, a prime example being the Base Realignment and Closure (BRAC) program of the Department of Defense. BRAC is resulting in an influx of up to 19,000 jobs to Northern Virginia. (10) Over the near term, most BRAC job-holders are expected to continue to commute from their homes within the region. Over the long term, additional housing is planned for locations near the BRAC jobs in Fort Belvoir and the Mark Center.

Outdated Zoning Restrictions

Zoning regulations may be outdated or non-existent regarding provisions for affordable housing. For example, many jurisdictions have policies that require certain minimum (larger) lot sizes near employment centers. This may prevent low to moderate single-worker households from obtaining affordable housing and working closer to a center of employment. (11)

Decisions Not to Live Closer to Where One Works

Though not directly controlled by the planning and zoning process, it must be recognized that people have reasons to live in locations other than where they work. This renders impossible a perfect jobs-housing balance. Reasons may include:

- An inability to afford housing close to employment. (12)
- The availability of more appropriate schools to meet educational needs, or more convenient childcare for a family's children. (13)
- The availability of other public services and amenities. (14)
- A desire to live in a suburban or rural lifestyle.
- The locality of family and friends.
- Two or more workers commuting from the same household and working in different jurisdictions. (15)

Also, it should be noted that people change jobs more often than move to new houses. (16)

There are various studies showing that even when a community or region may have a balanced jobs-housing ratio, the community's residents do not necessarily live where they work, as follows:

- A study by Cervero (1989, 1991) discovered that two San-Francisco Bay area localities, although having more balanced jobs-housing ratios (1.3:1 and 1.5:1), in actuality had less than one-quarter of each community's residents working within the community.

- A study by Cervero (1996) found that even though the jobs-employed residents ratio for three Bay area cities ranged from 0.96:1 to 1.05:1, fewer than 30% of employed residents worked locally and fewer than 30% of workers resided locally.
- A study by Clarke (1991) based on a more regional level of analysis, discovered that although the San Fernando Valley in 1988 had a balanced jobs-housing ratio, 60% of the traffic on local freeways began and ended their destinations outside of the Valley. (17)
- A study by Cervero (1996) found that although Pleasanton, California grew its jobs-housing balance from 0.42:1 to 1.13:1 from 1980-1990, the average commute distance increased for a similar period of 1985-1993. It was found that most persons living in Pleasanton did not work there, and most workers in Pleasanton did not live there. And although new jobs were created during the period of 1980-1990, workers could not afford to live in Pleasanton because the housing stock was already occupied by suburban workers working downtown. Also, the salaries of the workers in Pleasanton were below what was required to purchase a home there. (18)

All of these studies indicate a qualitative imbalance between jobs and housing, and that jobs-housing balance did not change commuting behavior. Therefore, it is not realistic to assume that everyone wants to live close to their workplace. There are too many choices as to why an individual decides to reside where they do.

Transportation

Inadequate Highway Infrastructure

The Housing Partnership states that jobs-housing balance is ultimately a question of commute times, and as traffic congestion worsens, the area wherein jobs and housing can balance becomes smaller. (19) This illustrates the importance of developing additional sizeable mixed-use centers in Northern Virginia, especially since substantial new roadway construction is unlikely to occur in the region in the near term.

Inadequate Transit Infrastructure

The biggest advantage to transit is when it provides a direct link between home and work. Barriers such as long drives to park and ride lots, long walks to the transit station, and transfers between same-mode or different-mode transit providers can easily make the commute trip more than one-half hour in length. In addition, as transit becomes more popular due to congested roadways, often there are a limited number of seats

available. If capacity is not added, transit will make an insignificant dent in an area with a significant jobs-housing imbalance. (20) Also, transit agencies should be cautious with any plans to increase capacity by removing seats on a train or bus. This may discourage long-distance commuters from taking transit if they are subjected to standing for a majority of the ride.

Unbalanced Mode Choice

The decision to travel has traditionally been via single-occupancy vehicle (SOV), which is compounded by such factors as two-income households and student vehicles. In the Southern California Association of Governments (SCAG) region, the SOV rate has been consistently above 70%, with a small decrease from 76.7% in 2005 to 74% in 2006, largely attributed to the price of gasoline. In the SCAG region, though transit use has increased, it is still less than 2% of all types of trips. This compares to 4.7% public transit use for work trips nationwide according to the 2000 Census' Journey to Work Survey. (21)

Public Policy

Jurisdictions Not Addressing Own Jobs-Housing Imbalance

Intended or not, many jurisdictions plan “only for themselves,” resulting in policies that do not provide enough housing to accommodate their own job growth, or vice-versa, thereby harming adjacent jurisdictions that wind up feeling the demand and pressure. (22) This is why addressing the jobs-housing ratio and other benchmarks are helpful in assessing how well jurisdictions are performing in contributing to the overall jobs-housing balance for a region. As will be discussed in Appendix E, Longmont, Colorado, worked with the Denver Regional Council of Governments to address its jobs-housing imbalance, and demonstrated the success that can be accomplished when a jurisdiction works diligently with its zoning policies to achieve jobs-housing balance.

In Fairfax County, the goal that has been set for Tysons Corner to reduce the current jobs-housing ratio of 13:1 to approximately 4:1, translated into 200,000 jobs and 100,000 residents by the year 2050, will be a remarkable achievement to be emulated by other jurisdictions. (23)

Jurisdictions Not Considering Regional Transportation Needs

In seeking a good jobs-housing balance on a sub-regional or regional level, it should be recognized that while individual land use decisions are by their nature “local” decisions,

strategies to reduce traffic congestion are more often than not “regional” in nature. Therefore, it is necessary for localities, as much as possible, to coordinate planning and zoning activities as they affect transportation on a larger scale. (24)

END NOTES FOR APPENDIX D

1. Virginia Secretary of Transportation, *Commonwealth of Virginia Transportation Performance Report, 2008*, p. 2.
2. Virginia Secretary of Transportation, *Commonwealth of Virginia Transportation Performance Report, 2007*, pp. 2-3.
3. Jerry Weitz, *Jobs-Housing Balance*, American Planning Association, Chicago, 2003, pp. 5-6.
4. The Housing Partnership, *Jobs and Housing: Can't Have One Without the Other*, Seattle, December 2005, pp. 2-3.
5. Ibid., p. 5.
6. Fairfax County Office of Research and Statistics, *Standard Report, "Acres of Land by Land Use Category,"* 1976.
7. Fairfax County Department of Neighborhood and Community Services, *Acres of Land by Land Use Category*, 2010.
8. The Housing Partnership, pp. 5-6.
9. California Planning Roundtable, *Deconstructing Jobs-Housing Balance*, 2008, p. 11.
10. Fairfax County Department of Transportation, *Base Realignment and Closure*, p. 1.
11. John S. Miller, *Feasibility of Using Jobs/Housing Balance in Virginia Statewide Planning*, Virginia Transportation Research Council, Charlottesville, August 2010, p. 20.
12. Weitz, p. 12.
13. California Planning Roundtable, p. 12
14. The Housing Partnership, p. 8.
15. Lisa Fowler and John McClain, *Linking Job Growth and Housing: Forecasts of the Demand for Workforce Housing in Fairfax County*, Center for Regional Analysis, School of Public Policy, George Mason University, Fairfax, VA, Fall 2007, p. 4.

16. The Housing Partnership, p. 1.
17. Weitz, p. 35.
18. Miller, p. 21.
19. The Housing Partnership, p. 7.
20. The Housing Partnership, p. 7.
21. California Planning Roundtable, p. 11.
22. The Housing Partnership, p. 4.
23. PB Placemaking et al, *Transforming Tysons: Vision and Area Wide Recommendations*, Portland, Oregon, October 20, 1008, p. 25.
24. California Planning Roundtable, p. 11.

Appendix E

Solutions to Jobs-Housing Imbalance

There are various methods of improving a jobs-housing imbalance, which can be considered from the planning and zoning, transportation, and public policy perspectives.

Planning and Zoning

Adequate Land Development and Zoning Policy

A jobs-housing balance provides the framework for a high quality of life and good jobs, with housing located close to employment. A local government's comprehensive plan should address the jobs-housing balance, and new or revised zoning ordinances should be adopted to permit higher density development in order to provide a greater balance in jobs and housing. In addition, local governments can revise other zoning policies to encourage opportunities to locate jobs near housing and to spur more residential development, including:

- Revising home occupation regulations to allow people to work at home, to telework, or to allow rental units within the home. Fairfax County's Accessory Dwelling Unit Program is an example of providing rental units in the home.
- Streamlining review processes or simplifying the acquisition of permits for residential development. (1)
- Revising planning and zoning policies to encourage housing, including affordable housing, in employment centers. (2) In terms of zoning ordinance amendments, Fairfax County created the PRM zoning designation, or Planned Residential Mixed Use District, to provide for high density, multifamily, mixed-use development in transit station areas and urban and suburban centers. Most recently, the county created the PTC zoning designation, or Planned Tysons Corner Urban District. This was established to implement the mix of uses, densities and intensities in the redevelopment option in the Comprehensive Plan Amendment for Tysons that was adopted in 2010.

Mixed-Use Development

Providing for more mixed use development will enable more people to live and work in the same vicinity. "Rigid separation of land uses in neighborhoods runs counter to jobs-housing balancing objectives." (3)

In Fairfax County, Robert E. Simon was a pioneer of mixed-use development when he founded the planned community of Reston in 1964. (4) Initially, this planned community had a mix of jobs and housing spread throughout various pockets of the development, served by the Reston Internal Bus System (RIBS). Over the last few decades, focus

turned to developing the “Town Center,” with construction of a hotel, retail stores, offices, and a movie theatre. In the last decade, more retail and a vastly increased amount of multi-family housing has been added, including a couple high-rise towers, enabling more people to live and work in the immediate area. In addition, higher-intensity mixed-use development is now being planned for areas adjacent to three planned Metrorail Silver Line stations for Reston.

More recently, the vision to transform Tysons Corner was included in the Comprehensive Plan amendment adopted in 2010. At the same time, the Planned Tysons Corner (PTC) urban zoning district was created. This was the culmination of a five year public planning process, with the goal of turning a sprawling complex of office buildings with a 13:1 jobs-housing ratio into a totally transformed urban area with an approximate 4:1 jobs-housing ratio by 2050. (5)

Affordable Housing Program

The California Planning Roundtable (CPR) suggests that, “Conforming to a policy-specified ratio of jobs-housing balance may be less effective in reducing household or community-wide commuting than creating affordable housing...” (6)

The Comprehensive Plan states, “Opportunities should be available to all who live or work in Fairfax County to purchase or rent safe, decent, affordable housing within their means. Affordable housing should be located as close as possible to employment opportunities... It should be a vital element in high density and mixed-use development projects...” (7) “While the high income levels of Fairfax County residents reflect positively on its desirability, the lack of housing opportunities for lower income households could negatively impact the County’s employment growth. ... The supply of affordable housing is well below the estimated need. ... The locational mismatch between potential employees and service sector jobs has become significant, and it could become more severe if the number of jobs in the County continues to increase substantially.” (8)

The George Mason University School of Public Policy Center for Regional Analysis (GMUCRA) claims that, “In recent years, firms have relocated or expanded outside of Fairfax County, and households, particularly with families and children, have moved elsewhere in response to the high cost of living. If Fairfax County is not able to meet the demand for affordable housing for its workforce, its economic vitality will be undermined and it will lose its economic leadership in the region.” As background, Fairfax County accounted for nearly 30% of the total job growth in the Washington area from 1990 to 2007, with employment increasing 77% over this same period. (9) This demonstrates the need to provide affordable housing across the full spectrum of the economy. In particular, the lack of providing affordable housing can cause:

- An “out-migration” of business with companies moving to where their employees are located.

- An inability of personal and business services to attract lower wage service workers who cannot afford to live in the County.
- An overall decline in “livability,” in that public services may suffer if it is difficult to attract good public employees such as police, fire and school employees; these individuals may decide to move elsewhere. (10)

Fairfax County’s initiatives on affordable housing include:

- Recognizing that redevelopment of existing neighborhoods should have increasing affordable housing as an objective. In particular the Comprehensive Plan states, “Ensure that redevelopment of residential neighborhoods for residential uses provides on-site, affordable dwelling units or a contribution to the Fairfax County Housing Trust Fund equal, at a minimum, to the replacement value of all affordable units displaced, as well as meets the provisions of the Affordable Dwelling Unit Ordinance or Planning Criteria. ... Ensure that redevelopment of residential neighborhoods for commercial/industrial uses provides affordable dwelling units or a contribution to the Fairfax County Housing Trust Fund, equal, at a minimum, to the replacement value of all affordable units displaced.” (11)
- Implementing an Affordable Dwelling Unit (ADU) program, which was created in 1990. The ADU program assists in providing affordable housing to persons of low and moderate income and is designed to provide a wide range of housing choices.

The Zoning Ordinance requires the construction and the continued existence of dwelling units affordable to households making 70% or less of the median income for the Washington region. It is encouraged that ADU’s be integrated within development projects. (12)

- Implementing a Workforce Dwelling Unit (WDU) program, which began in 2007. The WDU units are allowed in higher-density residential districts and planned development districts and are proffered by developers during consideration of an application for rezoning.
- Requiring that a certain percentage of affordable housing be provided in development projects. The Comprehensive Plan guidance for Tysons provides that projects with a residential component should provide 20% affordable and workforce dwelling units. The Plan states that, “Twenty percent of the residential units in new developments should be affordable to households with incomes ranging from 50 to 120 percent of AMI (Area Median Income)... If required by the Zoning Ordinance, ADU’s may be counted toward the 20% affordable housing objective... Any such ADU’s could be used to satisfy the lower income tiers...for WDU’s.” (13)

- Developing a “linkage policy” that requires large employers to provide housing for a certain percentage of the new workforce being added, aimed at low to moderate income levels, i.e., directly linking affordable housing with new job creation. (14) For Fairfax County, the Policy Plan states that, “...any provisions of a duly adopted program linking employment and affordable housing must be satisfied.” (15) The new Tysons Plan provides for nonresidential development to contribute \$3 per square foot for affordable and workforce housing. (16)

A reference was made earlier (Chart C-1, Appendix C) to a portion of the Washington Research Council’s study showing the results of jobs growth vs. housing units growth, which produced either a balanced or imbalanced effect on the overall jobs-housing ratio in various subareas of King County, Washington (Seattle region). There is an additional part to the study that shows the resultant effect of a more balanced vs. imbalanced housing ratio on housing prices. Chart C-1 was expanded into Chart E-1 (next page), illustrating that where an increase in the jobs-housing balance was accomplished, it actually moderated the price of housing in the South County area. Conversely, where the jobs-housing balance decreased, it more steeply increased the price of housing in the Westside and Eastside sections of the county. (17)

In total, a good jobs-housing balance program should include the provision of affordable housing. Also, as a jurisdiction or region achieves a more balanced jobs-housing ratio, the price of housing tends to moderate. As a result of these efforts, people are given the opportunity to live closer to where they work, increasing the sustainability of a community.

Chart E-1

**Housing Costs in Relation to Jobs-Housing Ratios
Subareas of King County, Washington**

<i>Characteristic</i>	<i>South County</i>	<i>Westside</i>	<i>Eastside</i>
Approximate Jobs Added, 1990-1999	62,000	81,000	110,000
Approximate Housing Units Added, 1990-1999	33,000	18,000	31,000
Jobs-Housing Growth Ratio, 1990-1999	1.91:1	4.50:1	3.56:1
Jobs-Housing Ratio, 1999	1.51:1 <i>(balanced)</i>	2.04:1 <i>(unbalanced)</i>	1.85:1 <i>(unbalanced)</i>
Average House Sales Price, 1990	\$134,443	\$174,635	\$237,161
Average House Sales Price, 1999	\$192,607	\$291,461	\$386,918
Percentage Increase in House Sales Price, 1990-1999	43.3	66.9	63.1
Average Rent per Month for 2 BR, 1 Bath apartment, 1990	\$473	\$561	\$574
Average Rent per Month for 2 BR, 1 Bath Apartment, 1999	\$640	\$858	\$862
Percent Increase in Average Rent for 2 BR, 1 Bath Apartment, 1990-1999	35	53	50

Source: Weitz, *Jobs-Housing Balance*, p. 11.

Density Bonuses, Incentives and Flexibility in Land Development

Methods to offer such incentives and bonuses include:

- Rewarding developers of residential developments with additional density bonuses or even impact fee waivers for supplying a certain minimum of ADU's and other affordable housing. An example of a density bonus would be to allow a developer to build four additional square feet of office space for each new square foot of affordable housing provided. (18) The policy for the new Planned Tysons Corner (PTC) urban zoning district states, "Additional intensity in the form of bonuses is allowed to encourage the provision of affordable and workforce housing and superlative contributions toward public facilities. ..." (19) "All projects with a residential component that seek to utilize the redevelopment option in the District Recommendations should provide 20% affordable and workforce dwelling units. These projects are allowed a 20% residential floor area bonus and flexibility in how and where Workforce Dwelling Units can be provided within Tysons. ... In order to provide more flexibility with the (Workforce Dwelling

Unit) bonus, the Policy Plan's size restrictions on bonus market rate units do not apply within Tysons." (20)

- Encouraging transfer of development rights where a developer with land zoned commercially in a jobs-rich area would have that land zoned residential in exchange for rights to develop commercial land elsewhere. (21)
- Offering tax-based financial incentives. For example, the Tysons Plan recognizes the need for incentives in order to transform Tysons Corner into a vibrant, urban mixed-use development by stating, "Existing public and private funding mechanisms will be inadequate to deliver all of the infrastructure and amenities envisioned in the Plan. New strategies will be critical to support the transformation of Tysons into a great urban place." (22) Different mechanisms are mentioned throughout the plan including tax increment financing, reduced fees or tax abatement for affordable/workforce housing, low income housing tax credits, and tax-exempt housing bonds.

Transportation

Redirection of Future Growth to Reduce Congestion and Vehicle Miles Traveled

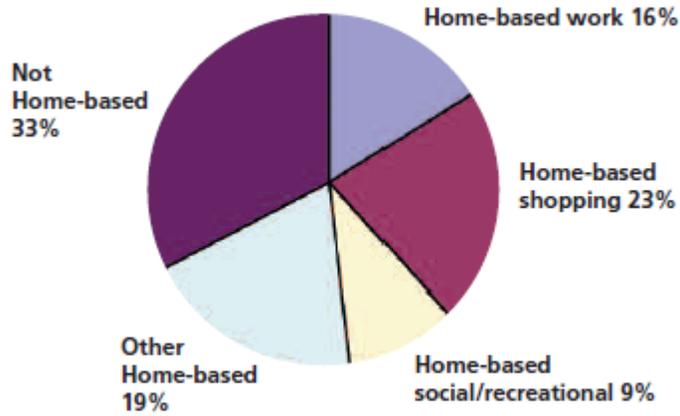
The Comprehensive Plan states, "One of the effects of growth in Fairfax County is the impact on public facilities and infrastructure systems (and) especially the impact on the road system in peak periods. ... (M)anaging the interacting elements of congestion is required ... which if left unattended, will degrade current service levels. The County needs to manage the expansions of transportation capacity (and) manage the reduction of transportation demand..." (23)

Improving the jobs-housing balance can result in reduced congestion, reduced vehicle miles traveled (VMT), and mitigation of other traffic impacts. Also, improving the jobs-housing balance can reduce urban sprawl and lower energy consumption. (24)

The California Planning Roundtable states that, "It is traffic congestion, more than any other single factor, that fuels interest in jobs-housing balance." (25) The CPR also contends that it is the home-based work trip that produces more traffic in a concentrated period of time and is the main cause of congestion, even though it represents a relatively small portion of total trips and VMT -- 16% of trips and 20% of VMT, as shown in Charts E-2 and Chart E-3 (next page). The CPR asserts that the home-based work trip has directed transportation policy over the years, and makes transportation policy peak-hour based while neglecting non-commute hours. (26)

Chart E-2

Annual Trips by Trip Purpose, 2001

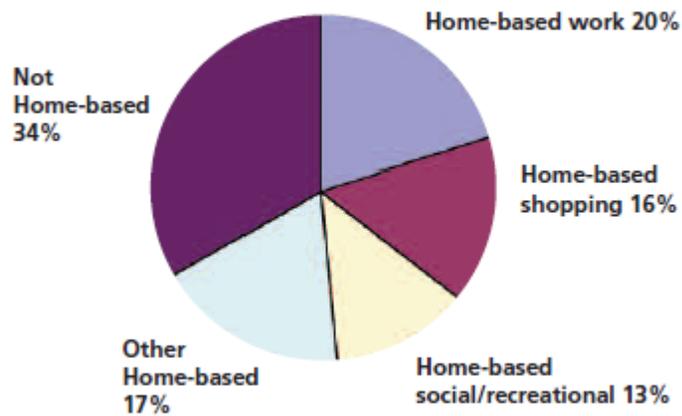


Source: National Household Travel Survey, 2001

Source: California Planning Roundtable, *Deconstructing Jobs-Housing Balance*, p. 7

Chart E-3

Annual VMT by Trip Purpose, 2001



Source: National Household Travel Survey, 2001

Source: California Planning Roundtable, *Deconstructing Jobs-Housing Balance*, p. 7

The CPR cites a few studies showing that intensified housing can have the ability to reduce freeway congestion and lower VMT through reducing peak hour trips, and reducing travel time and its associated transportation costs, as follows:

- Cervero and Duncan found that a 10% increase in jobs of the same occupational category created within 4 miles of a residence reduced daily work-hour VMT by 3.3%.
- Stone and others concluded that “based on analysis of simulated future growth patterns in metropolitan areas across the United States, ...increased compactness of development results in a reduction in vehicle travel of a larger magnitude than has been estimated in previous studies. They found that a 10% increase in population density is associated with a 3.5% reduction in household vehicle travel and emissions. Additionally, they found that density increases in urban areas were more than twice as effective in reducing vehicle miles traveled as density increases within suburban zones.”

The CPR concludes, “Notwithstanding the many obstacles to jobs-housing balance, there is little ambiguity in our findings: Linking jobs and housing holds significant potential to reduce VMT (vehicle miles traveled) and VHT (vehicle hours traveled).” (27)

A proactive approach in reducing VMT and commute time was taken by the Denver Regional Council of Governments (DRCOG) as part of its Metro 2030 plan. DRCOG met with various local governments in an effort to develop strategies to balance jobs-housing in the region and reduce the length of commute time. One successful initiative was undertaken by the city of Longmont, Colorado, which is a 40-minute commute from Denver. The city implemented a jobs-housing balance program, attempting to match the skills of the workers who live there and collaborating with developers in executing policy that enabled high-technology firms and other small businesses to move to the city. Whereas in the Denver metropolitan region only 36% of the people who work in a locality live there, in Longmont 80% of the people who live there now actually work there, according to a 1997 study by the DRCOG. (28)

All-in-all, it is reasonable to assume that bringing jobs closer to home helps reduce not only VMT, but vehicle hours traveled or commute time, and can improve the jobs-housing balance.

Transit-Oriented Development

If commuting and VMT, air and water pollution, and decline of open space are to be minimized, consideration needs to be given to optimizing transportation systems and encouraging densities that support transit. (29)

The Comprehensive Plan states, “Fairfax County should encourage Transit-Oriented Development (TOD) with focused growth near certain planned and existing rail transit stations as a way to create opportunities for compact pedestrian-and-bicycle friendly,

neighborhood centers accessible to transit.” This involves variably priced housing in an area with a range of jobs, linking both with a viable mass-transit system. In reality, a transit-focused neighborhood contains not only a mix of housing, employment and retail uses, but also a well-planned walking and bicycling environment. TOD is a product of deliberate planning efforts to reduce urban sprawl and reliance on commuting by automobile, with a focus on medium to high density growth around transit stations. (30)

Four variables that should be considered when planning for TOD include population and employment density, intensity and diversity of land uses, parking availability, and designing a street network that provides connectivity and accessibility. (31)

Fairfax County’s Comprehensive Plan includes specific guidelines for TOD, addressing such issues as centering highest density/land use intensity around particular transit station area boundaries, land use mix, housing affordability, urban design, pedestrian and bicycle access, and other transportation solutions that include measures to limit single occupancy vehicle (SOV) trips. (32)

The California Planning Roundtable (CPR) asserts that mixed-use economic development may not produce the jobs-housing balance desired if the home-based work trip cannot be efficiently served by transit. (33)

In Northern Virginia, positive examples of transit efficiency include:

- Tysons Corner, the county’s largest planned mixed-use development, centering on aggressive transit-oriented development (TOD). Tysons will be served by four new Metrorail Silver Line stations. Also, a bus circulator system is planned within the Tysons urban area to connect office and residential uses with the Metrorail stations and the existing transit hub near Jones Branch Drive and International Drive. This model of transit efficiency will help transform Tysons Corner into more of an urban area and reduce its jobs-housing ratio considerably.
- The Reston Internal Bus System (RIBS). RIBS has operated for many years, and currently provides five bus routes linking Reston residents and workers with other transit providers such as the Fairfax Connector and Metrobus. Also, a transit hub was recently completed at Reston Town Center. In addition, the planned expansion of Metrorail’s Silver Line will provide opportunities for TOD with three new stations in the Reston area.
- The successful implementation of TOD in Arlington County, with development around Metrorail beginning in the late 1970’s in the Ballston-Rosslyn corridor and the Crystal City area. Arlington has achieved a successful mix of housing, employment and retail opportunities in several TOD areas.

Transportation Demand Management Program

The Comprehensive Plan emphasizes increasing transportation efficiency and decreasing automobile dependency. In the transportation profession, various Transportation Demand Management (TDM) programs are often suggested to include ridesharing, carsharing, commuter subsidies, teleworking, and providing facilities for bicycles and pedestrians. Other TDM measures include reduction in free parking and reduction in parking spaces provided with new developments. (34)

Transportation Infrastructure Improved/Expanded

Making enhancements to an existing transportation system can produce benefits in reducing the jobs-housing imbalance. General examples include enhanced bus service and transit lines connecting residents to employment centers (35), and expansion of highway capacity.

As mentioned, Metrorail is being expanded with the Silver Line serving Tysons Corner, Reston, and points further west. Other enhancements already completed to the County's transportation system include Fairfax Connector supplemental bus service to access various Metrorail stations, Metrobus use of shoulder lanes on the I-66 access road to reach the West Falls Church Metrorail station, Metro's Richmond Highway Express (REX) bus service to serve the U.S. Route 1 corridor south of the Capital Beltway, and other Fairfax Connector bus route enhancements throughout the county. Also, the Virginia Railway Express is studying expansion of service further into Prince William County (Gainesville and Haymarket areas), and Spotsylvania and Fauquier Counties. In addition, Metro is attempting to obtain additional funding for operations and maintenance, including the procurement of new rail cars to enhance service in the D.C. metropolitan area.

Further, it is critical that better utilization of the region's existing highway infrastructure be implemented, and additional capacity be constructed, such as the addition of tolled Express Lanes on Interstates 95, 395 and 495, and expanded hours for utilizing the shoulder lanes on Interstate 66. In addition, constructing or widening local roadways as shown on the Fairfax County's Transportation Plan Map should be pursued, all of which will provide mechanisms for improved vehicular traffic flow in Northern Virginia.

Public Policy

Considering More than Only a Jobs-Housing Ratio

Many recognize that although jobs-housing ratios do not change much from year to year, metropolitan areas need to move toward attaining balanced jobs-housing ratios in the long term. The California Planning Roundtable urges caution, however, in looking only at a jobs-housing ratio. "While broad regional approaches, such as creating more housing in jobs-rich areas and conversely, creating more jobs in housing-rich areas

have a certain logic, conforming to a policy-specified ratio of jobs-housing balance may be less effective in reducing household or community-wide commuting than creating affordable housing or better accessibility between housing locations and job centers.” (36) Therefore, jobs-housing balance is not only a quantitative analysis, but a qualitative consideration as well.

Regional and Interregional Partnerships to Redirect Future Growth

The Comprehensive Plan states that, “Fairfax County’s elected officials and staff should continue to participate in leadership roles in cooperative regional activities, recognizing that the physical, economic, and social well-being of the people of Northern Virginia and the Washington Metropolitan Area is dependent upon regional cooperation.” (37) Also, the Comprehensive Plan advocates for regional and local efforts to affect a balanced transportation system, by developing and/or expanding rail systems and commuter bus systems, and reducing excessive reliance on the automobile, as “keystone policy” for future planning efforts. (38)

Examples of partnerships include:

- Regional partnerships, such as the Metropolitan Washington Council of Governments (MWCOCG). The MWCOCG has developed “Regional Activity Centers and Clusters” as a tool to help localities make informed land use and transportation planning decisions. The Regional Activity Clusters include groupings of Regional Activity Centers, with housing and jobs concentrated immediately surrounding the centers as well as along major transportation facilities. (39)
- Interregional partnerships, which promote regional planning and collaboration among counties and cities. In 2000, the State of California established the Inter-Regional Partnership Program with the goal of improving jobs-housing balance in urbanized areas of California. (40)

Examples of partnerships utilizing the jobs-housing balance to redirect land development and future growth include:

- The Chapter 527 review process as revised in 2011 by the Virginia General Assembly and supervised by the Virginia Department of Transportation. This review requires a traffic impact analysis when certain vehicular thresholds are exceeded for a proposed development project. The purpose of the 527 review is to determine the impact of local land use decisions on state highways. (41)
- Georgia’s Development of Regional Impact (DRI) program, wherein developments meeting certain administrative thresholds are to be evaluated for regional impacts. In 2002, the Georgia Regional Transportation Authority

adopted administrative rules so that DRI applications are evaluated for land use, transportation, and air-quality impacts. In addition, there are requirements for a DRI applicant to study the project's impact related to the overall development in an Area of Influence (AOI) analysis. (42)

Statewide or Public Sector Tax and Incentive Programs

A tax increment refinancing program allows a portion of the increase in property taxes from redevelopment to be used to finance infrastructure and other facilities in the redeveloping area.

In 2001, the State of California implemented a public incentive program known as the Jobs-Housing Balance Incentive Grant Program. This is a \$25 million program to spur localities to provide housing in areas experiencing high job growth and having a high jobs-housing ratio. Jurisdictions were eligible if they had approved 12% more construction permits for housing in 2001 than the annual average for the previous three years. Every housing unit approved above this threshold resulted in a per-unit grant based on the extent the locale was a high employment demand area; the ratio of jobs-housing was a factor in the determination. (43)

Jurisdictional and Regional Goals

Such goals may include:

- Implementing more mixed-use development, where housing is placed closer to work. As mentioned previously, 16% of all trips and 20% of all vehicle miles traveled are initiated through home-based work trips. (44)
- Housing a percentage of workers, by setting a target as to how many new workers in a jurisdiction will be housed in that jurisdiction. For example, the George Mason University School of Public Policy Center for Regional Analysis (GMUCRA) suggests a goal of 65% of new employees in Fairfax County to be housed in the County. The 2000 Census showed that 50% of all jobs in the County were filled by County residents. Therefore, this would indicate that Fairfax County can do a better job at housing its own workers than has occurred in the past.
- Increasing affordable housing, by promoting public policies to provide more affordable housing near employment centers. Looking at Fairfax County again, the growth and diversity of the County's economy is highly dependent on affordable housing being made available to workers across all income levels, and the County will only continue to forcefully attract new jobs if workers are able to find affordable housing. Between 2007 and 2025, the County projects an increase of nearly 200,000 jobs, thereby increasing the employment base by 29%. In order to handle this type of growth, the County will need to make a

concerted effort to meet housing demand from the entire spectrum of the labor force, to include affordable housing. (45)

- Working to improve local and regional transportation infrastructure, by providing increased state and local funding for important transportation improvement projects across all modes of travel.

END NOTES TO APPENDIX E

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35. Miller, p. 10.
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42. Weitz, pp. 28-30.
43. Miller, p. 7.
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45. Fowler and McClain, pp. 2-3.