

Western Riverside Council of Governments Transit Oriented Development (TOD) Demand Analysis

Prepared for:

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PREFACE

In recent years, transit oriented development (TOD) has become a major focus of urban development, given the urgent need for housing and increasing rates of congestion. The Southern California Association of Governments (SCAG) has proposed a '2 percent strategy' to alleviate traffic, housing and environmental problems in the Southern California region. The strategy involves the utilization of existing public transportation infrastructure to facilitate jobs creation, and housing and mixed-use development.

The present report examines the projected demand for TOD within the Western Riverside County region. The study builds on the approach taken by the Center for Transit Oriented Development (CTOD) in *Hidden in Plain Sight: Capturing the Demand for Housing near Transit*, released September, 2004. According to this report, over 14.8 million households nationwide are expected to demand housing within half-mile of existing rail systems by 2025. This is more than double the number of households residing in such areas presently. The CTOD report outlines the following key trends:

- Transit is in a '*Building Boom*'-- vast majority of cities are investing in urban transit;
- Urban and suburban investment are simultaneously on the rise;
- Consumer demand is changing; non-traditional households including singles and the retired form large part of the demand;
- Investors and employers are seeing the value of locating near points of transit access;
- Demographic trends are creating a demand for TOD, including changing age composition, family structure and increasing downtown population.

The realization of projected demand for transit oriented development (TOD) necessitates the adequate supply of land within a given distance of existing and planned transit stations at appropriate quantities, design and price levels. A companion study to this report explores potential land supply for TOD in the Western Riverside County region. The supply study examines potentially walkable areas around key transit station locations in this region, identifying land parcels and their respective capacity for new and infill development, in the context of the marketplace.

EXECUTIVE SUMMARY

Purpose

The Riverside County Transportation Commission (RCTC) is planning an expansion of their existing rail transit system for the Western Riverside County region. In conjunction with this development, the Western Riverside Council of Governments (WRCOG) is exploring the market potential for transit oriented development (TOD) around existing and future stations planned in the region. The study provides an order of magnitude of TOD potential, the realization of which is contingent on economically and politically feasible sites being made available through both public and private efforts.

Study Area

The study area largely encompasses five Transportation Urban Mitigation Fee (TUMF) zones within WRCOG. The current rail transit line is located in the Northwest TUMF zone with two stops in Corona and one stop in Riverside. Future planned stations in the WRCOG region include: Moreno Valley and Perris in the Central TUMF zone; Temecula in the Southwest TUMF zone; and Hemet in the Hemet/San Jacinto TUMF zone. No stations are planned for the Pass TUMF zone.

Methodology

The study projects the demand for TOD in incremental terms, i.e. as projected net demand for TOD over the 2000 to 2030 time period. The incremental demand for TOD over the 2000 to 2030 period has been projected based on the following three primary parameters:

- 2000 to 2030 household growth by TUMF zones
- 2030 household types by commute characteristics
- Preference for TOD by household commute characteristics

Population and household projections for WRCOG over the 2000 to 2030 time-period are based on the SCAG 2004 RTP forecasts at the transportation analysis zone (TAZ) level. These projections were provided by WRCOG and grouped into the five TUMF zones.

The primary mode of commute of the householder is taken in this study as a proxy for the commute characteristic of the household. Travel behavior of householders has been categorized by key variables from the Census 5 percent Public Use Microdata Sample (PUMS).

The incremental demand for TOD is calculated as a percentage capture of the net growth in households in three main categories: public transit, auto commuters, and non-commuters.

- The capture rates are based on a survey conducted by True North Survey in WRCOG regarding household interest in moving into a transit-oriented village over the 2-year and 10-year time period.
- Capture rates for TOD differ for each of the three commute-related categories.
- The final demand numbers for TOD are projected by household type and household commute characteristics for each TUMF zone.

Major Demographic and Travel-related Trends

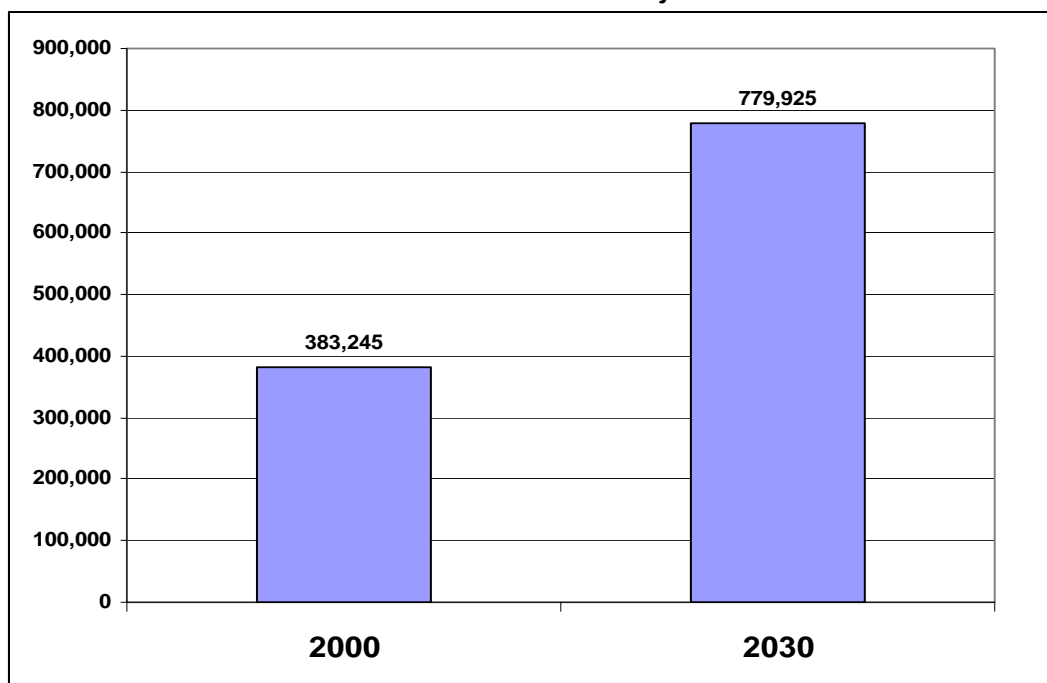
- Riverside County experienced the highest percent population change in the region of 32.0 percent growing from 1.17 million in 1990 to 1.54 million in 2000, largely driven by relatively affordable housing.

- Use of public transportation in Southern California decreases as workers move away from urban areas, with Los Angeles County having the highest transit usage rates among all workers at 6.5 percent in 2000.
- Riverside County has experienced a growth in transit usage rates, among workers 16 years and over, from 0.9 percent in 1990 to 1.4 percent in 2000.

2000 to 2030 Growth Projections

- Population in the four-county region, including Los Angeles, Orange, Riverside and San Bernardino counties, is projected to grow from 15.72 million in 2000 to 21.63 million in 2030 at annual average growth rate of 1.1 percent.
- Riverside County has the highest population and household annual average growth rate among these Southern California counties, at 2.4 percent and 2.7 percent, respectively.
- Households in WRCOG are projected to grow by 396,680 from 383,245 in 2000 to 779,925 by 2030 at an annual average growth rate of 2.4 percent, as shown in Figure ES-1.
- However, Riverside County remains relatively jobs poor at 1.05 jobs per household in 2030, compared to 1.37 for the 4-county region.
- This implies that residents of Riverside County are more likely to continue commuting to other destinations outside the County for work. This underscores the urgent need to address issues of public transit in the near future, especially in the context of increasing congestion and energy prices.

Figure ES-1
WRCOG TOD Demand Study
2000 to 2030 Household Projections



Source: Stanley R. Hoffman Associates, Inc.

TOD Demand Estimation Scenarios

Assumptions have been made that alter the household commute composition from the 2000 base year levels, leading to two TOD projection scenarios:

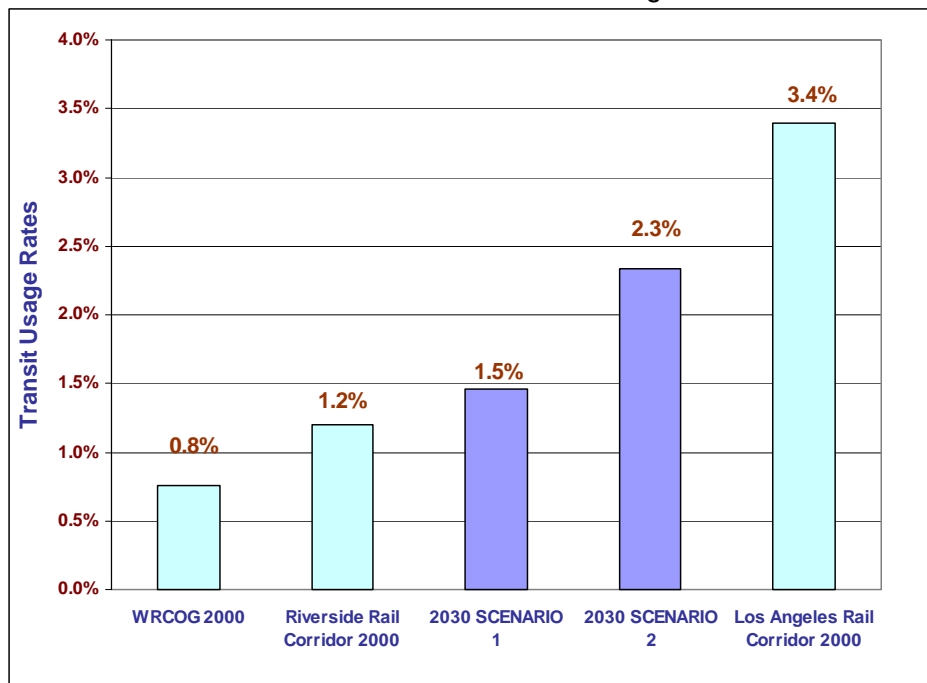
- **Scenario 1:** Public transit usage of householders (and therefore households) by TUMF zones rises as urbanization levels increase in the WRCOG region. The projected increase in households per square mile between 2000 and 2030 for each TUMF zone is used as a proxy for measuring urbanization levels.
- **Scenario 2:** Public transit usage of householders by TUMF zones are projected to reach levels intermediate between the existing public transit usage rates for the Riverside County rail corridor and the Los Angeles County rail corridor.

Projected Transit Usage Rates

As shown in Figure ES-2, the study assumes change in composition of households by commute characteristics by 2030 under two scenarios—Scenario 1 and Scenario 2. This implies different overall TOD captures under the two scenarios.

- **Scenario 1:** Assumes that 1.5 percent of all householders in WRCOG use transit as the primary commute choice by 2030.
- **Scenario 2:** Assumes that 2.3 percent of all householders in WRCOG use transit as the primary commute choice by 2030.

Figure ES-2
WRCOG TOD Demand Study
2000 to 2030 Householder Transit Usage Rates¹



1. Includes householders who use bus or rail as the primary commute mode.

Source: Stanley R. Hoffman Associates, Inc.

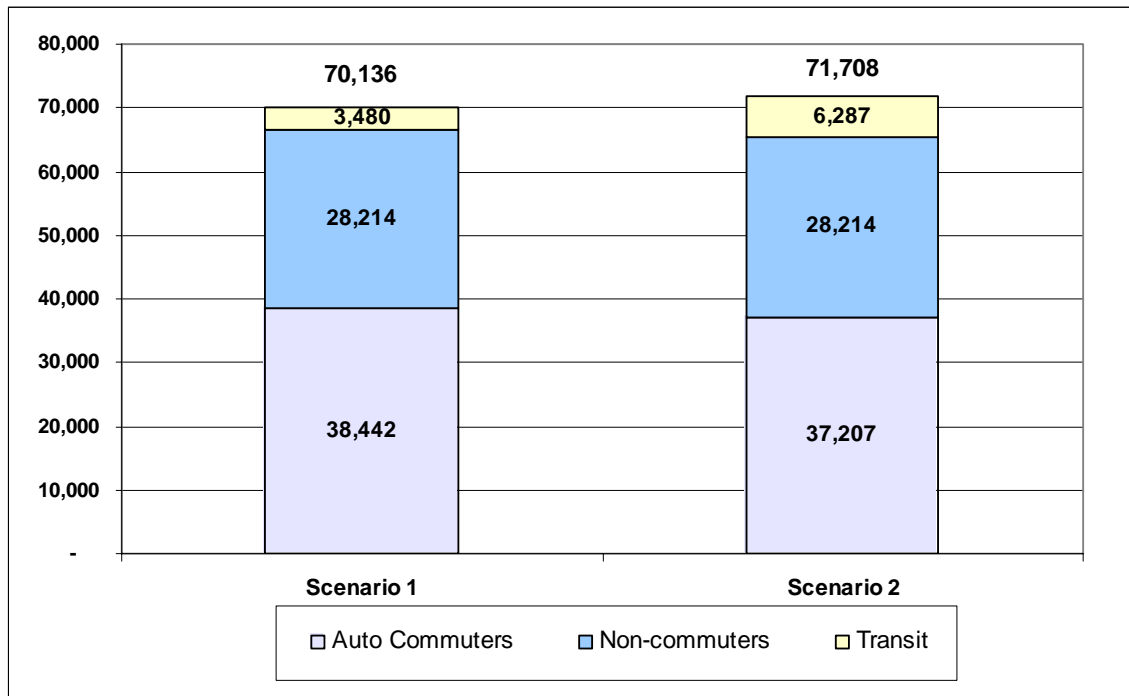
Projected Overall TOD Demand

- **Scenario 1:** Under Scenario 1, out of the projected growth of 396,680 households over 2000 to 2030 for the whole WRCOG region, a total of 70,136 households are estimated as potential TOD households, as shown in Figure ES-3. These include 3,480 transit households, 38,442 auto-commuting households, and 28,214 non-commuting households.
- **Scenario 2:** Under Scenario 2, out of the projected growth of 396,680 households over 2000 to 2030 for the whole WRCOG region, a total of 71,708 households are estimated as potential TOD households, as shown in Figure ES-3. These include 6,287 transit households, 37,207 auto-commuting households, and 28,214 non-commuting households.

Projected Overall TOD Demand by TUMF Zones

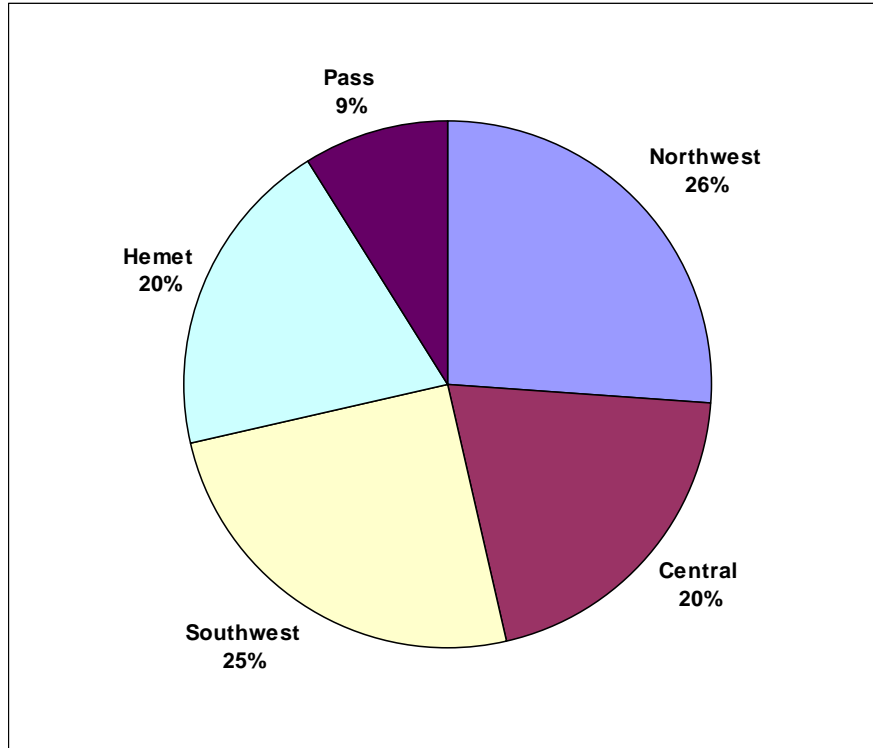
- The overall demand for TOD by the five TUMF zones, as shown Figure ES-4, is similar for both Scenario 1 and Scenario 2.
- About 51 percent of the TOD demand is concentrated in the Northwest and Southwest TUMFs, at 26 percent and 25 percent, respectively.
- The Pass area projects households that are interested in TOD living, but they would have to relocate to other areas to realize that choice given that no rail station is currently planned in this area.

Figure ES-3
WRCOG TOD Demand Study
Overall 2000 to 2030 TOD Demand Projections



Source: Stanley R. Hoffman Associates, Inc.

Figure ES 4
WRCOG TOD Demand Study
2000 to 2030 TOD Incremental Demand Projections by TUMF Zones



Source: Stanley R. Hoffman Associates, Inc.

Chapter 1 – INTRODUCTION

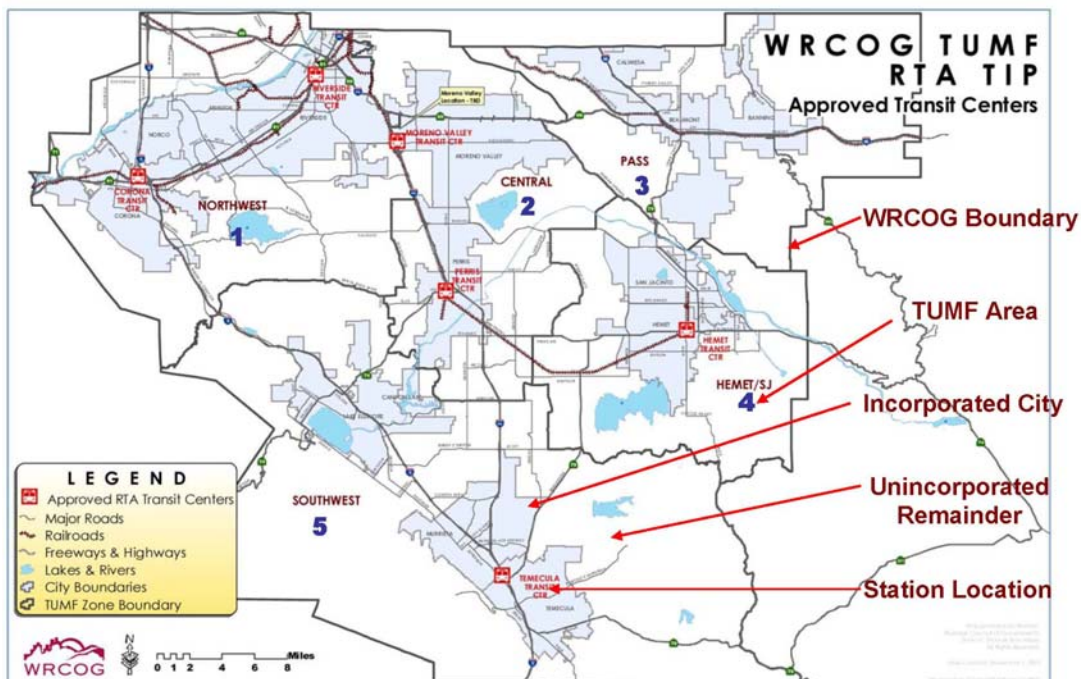
1.1 Background and Purpose of Report

The Western Riverside Council of Governments (WRCOG) is planning an expansion of their existing rail transit system for the Western Riverside County region. In conjunction with this development, WRCOG is exploring the market potential for transit oriented development (TOD) around existing and future stations planned in the region. The following study projects a potential range of demand for such development. The present study projects potential demand for TOD in the WRCOG region based on transit usage characteristics of households, urbanization rates and 2000 to 2030 household growth from SCAG's RTP 2004 forecasts. Further, the study uses survey data from households in the WRCOG region regarding their near- and long-term interest in living in transit oriented villages.

1.2 Project Study Area

- The study area largely encompasses the WRCOG region with a focus on its five Transportation Urban Mitigation Fee (TUMF) zones, as illustrated in Figure 1-1.

Figure 1-1
Study Area: WRCOG Region and TUMF Zones



Source: Western Riverside Council of Governments

- The current rail transit line is located in the Northwest TUMF zone with two stops in Corona and one stop in Riverside.
- Future planned stations in the WRCOG region include: Moreno Valley and Perris in the Central TUMF zone; Temecula in the Southwest TUMF zone; and Hemet in the Hemet/San Jacinto TUMF zone. No stations are planned for the Pass TUMF zone.

1.3 Data and Methodology Sources

Data Sources

The following data sources have been used for the demand estimation study:

- Census SF-1 and SF-3 data for 1990 and 2000: Study variables include population, households, household type and housing units.
- 2000 Census Transportation Planning Package: Study variables include means of transportation to work.
- 2000 to 2030 SCAG RTP 2004 Regional Forecasts: Includes population, households and employment projections for the Southern California region.
- WRCOG TUMF 2030 Projections: The population and household projections by TUMF zones at the TAZ level have been provided by the WRCOG staff.
- 2000 Census 5 percent Public Use Microdata Sample (PUMS): The PUMS data has been analyzed to generate cross-tabulations of householders' commute choice to work with key demographic variables including household type, race/ethnicity, age, household income and occupation.

Methodology Sources

- The present study builds on the approach taken in *Hidden in Plain Sight, Capturing the Demand for Housing near Transit*, by the Center for Transit Oriented Development (CTOD), September, 2004 to identify key household and individual characteristics of individuals who are transit-friendly and likely to prefer transit oriented developments.
- Further, the projected future interest in transit oriented development was based on a household survey by True North Research, April 2006, where questions were asked regarding the interest in living in a transit village over the short-term (2-year) and the long-term (10-year).

1.4 Report Outline

The report has been presented in the following four chapters:

- *Chapter 2. Travel-related Demographic Trends:* Presents travel-related trends for Riverside County and other Southern California Counties.
- *Chapter 3. Western Riverside County Growth Projections:* Discusses the 2000 to 2030 demographic growth projections in WRCOG by the TUMF zones, and presents this growth in the context of Riverside County and Southern California.

- *Chapter 4. Public Use Microdata Sample Analysis:* Presents the results of the cross-tabulation analysis of the PUMS data for selected regions in Riverside County and Southern California. The primary variable of interest – means of commute—is cross tabulated with other key variables.
- *Chapter 5: TOD Demand Projections for Western Riverside:* Presents the methodology and results of the TOD estimation model. TOD demand has been presented for two scenarios—Scenario 1 and Scenario 2--by TUMF zones, commute choice and household types.
- *Appendix A* presents the variables selected from PUMS for the cross-tabulation analysis. *Appendix B* presents questions relevant to transit oriented development from the True North Research Survey. *Appendix C* includes selected tables from the demand estimation model. The list of contacts, data sources and references are included in *Appendix D*.

Chapter 2 – Travel-related Demographic Trends

The study begins by providing travel-related trends for Riverside County and other Southern California Counties. These trends are useful in providing a regional perspective, as well as forming the basis for the TOD household projection. In particular, Riverside County is in a unique situation to leverage its future population and household growth to create a destination that offers choices among living environments, including mixed-use and transit-oriented villages.

2.1 Geographies and Data Assembly

Riverside County is experiencing high levels of growth. In order to benchmark this growth, comparisons are made between Riverside County and other neighboring Southern California Counties.

The data sources used for this comparison include:

- Census SF-1 and SF-3 data for 1990 and 2000
- Census Transportation Planning Package 2000

Some of the variables examined include population growth, means of transportation to work, public transit usage, dwelling units and housing tenure. The purpose of this chapter is to present Riverside County in the context of other California counties and selected transit corridors.

2.2 Population Growth Trend: 1990 and 2000

- As shown in Table 2-1, Southern California, including San Diego County, grew by 12.7 percent between 1990 and 2000.
- Riverside County experienced the highest percent population change in the region of 32.0 percent, largely driven by relatively affordable housing.
- The more urbanized counties of Los Angeles and San Diego have comparatively lower percentages of population change over this time period.

Table 2-1
Population Growth Trends: 1990 – 2000

	1990	2000	1990-2000 Change	% Change
Los Angeles County	8,863,164	9,519,338	656,174	7.4%
San Diego County	2,498,016	2,813,833	315,817	12.6%
Orange County	2,410,556	2,846,289	435,733	18.1%
Riverside County	1,170,413	1,545,387	374,974	32.0%
San Bernardino County	<u>1,418,380</u>	<u>1,709,434</u>	291,054	<u>20.5%</u>
Total	16,360,529	18,434,281	2,073,752	12.7%

Sources: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 1990 and 2000.

2.3 Means of Transportation to Work: 1990 and 2000

There are different categories for means of transportation to work. The data from the U.S. Census 2000 takes into account, on a population level, the number of workers 16 years and older that use some form of transportation to work, as discussed below.

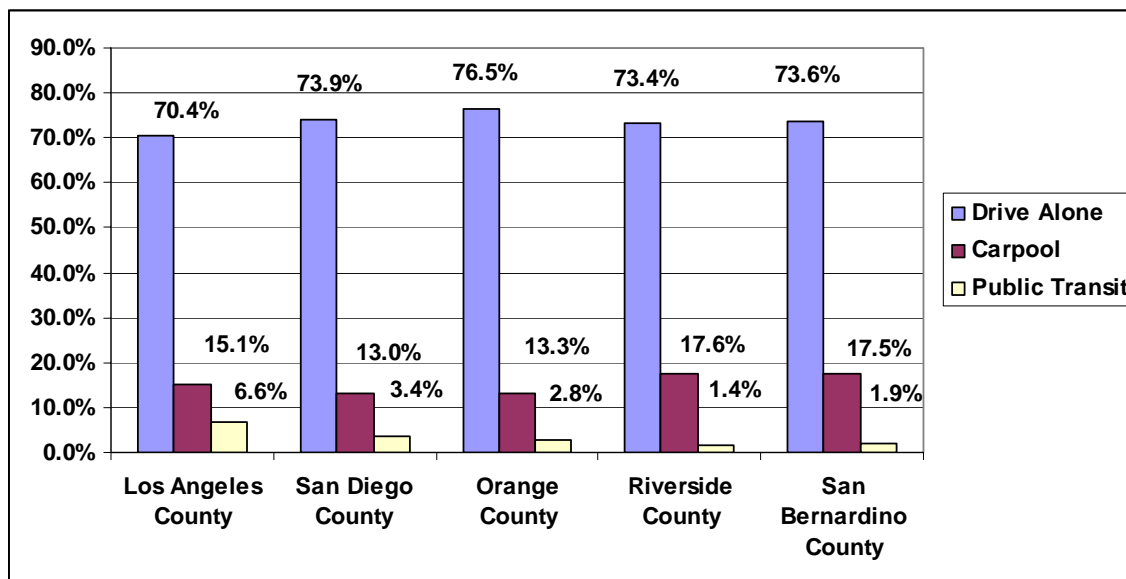
- As shown in Table 2-2, Riverside County has experienced a relatively large increase in bus and rail transit usage for workers as means to work from 4,359 in 1990 to 8,010 in 2000.
- As rail continues to become more accessible across the counties, it is likely that workers will continue to increase usage of rail as a means of transportation, particularly as congestion and oil prices increase.
- As shown in Figure 2-1, Riverside County has 73.4 percent workers who drive alone to work, similar to the other counties shown. Driving alone is still the most common means of transportation for workers across all counties.
- The use of carpooling is higher in the less urbanized Counties of Riverside and San Bernardino.
- In Figure 2-2, Riverside County has experienced a growth in transit usage rates, among workers 16 years and over, from 0.9 percent in 1990 to 1.4 percent in 2000.
- However, from a regional perspective, the use of public transportation decreases as workers move away from urban areas, with Los Angeles County having the highest transit usage rates among all workers at 6.5 percent in 2000.

**Table 2-2
Means of Transportation to Work: 1990 - 2000**

	Car, Truck, Van - Drive Alone	Car, Truck, Van - Carpool	Auto Commuters Subtotal	Bus	Rail	Transit Subtotal	Other	Total
1990								
Los Angeles County	2,884,615	639,570	3,524,185	262,732	2,297	265,029	326,034	4,115,248
San Diego County	872,325	169,326	1,041,651	36,317	3,059	39,376	149,419	1,230,446
Orange County	981,436	174,624	1,156,060	30,946	852	31,798	90,803	1,278,661
Riverside County	356,024	85,258	441,282	4,251	108	4,359	36,977	482,618
San Bernardino County	449,204	100,661	549,865	4,045	116	4,161	43,304	597,330
Total	5,543,604	1,169,439	6,713,043	338,291	6,432	344,723	646,537	7,704,303
2000								
Los Angeles County	2,714,944	582,020	3,296,964	234,662	15,806	250,468	311,318	3,858,750
San Diego County	960,065	169,340	1,129,405	37,948	4,899	42,847	127,251	1,299,503
Orange County	1,005,744	174,373	1,180,117	33,202	3,244	36,446	97,424	1,313,987
Riverside County	433,644	104,195	537,839	5,824	2,186	8,010	44,667	590,516
San Bernardino County	484,631	115,538	600,169	8,702	3,582	12,284	46,255	658,708
Total	5,599,028	1,145,466	6,744,494	320,338	29,717	350,055	626,915	7,721,464

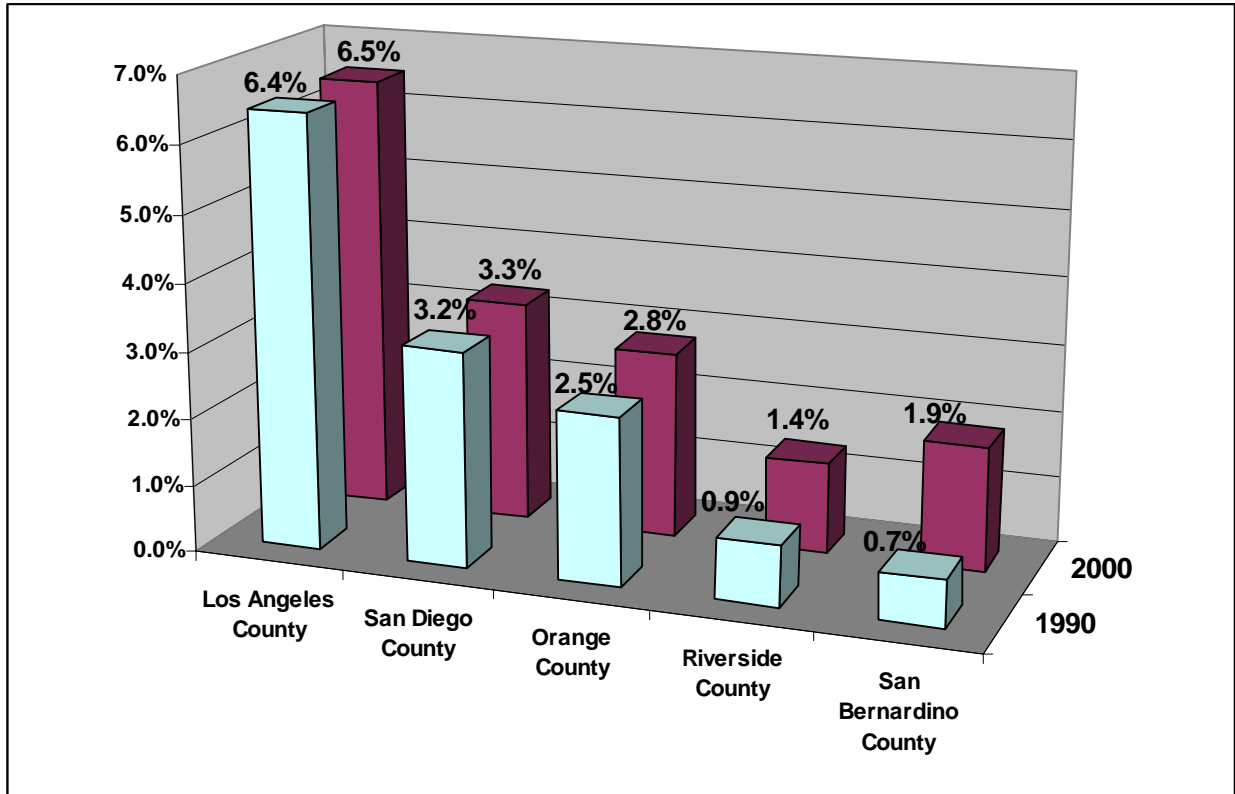
Sources: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 1990 and 2000.

**Figure 2-1
Transportation Usage to Work – Drive Alone, Carpool, and Public Transit: 2000**



Source: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 2000.

Figure 2-2
Public Transit Usage in Southern California: 1990 – 2000

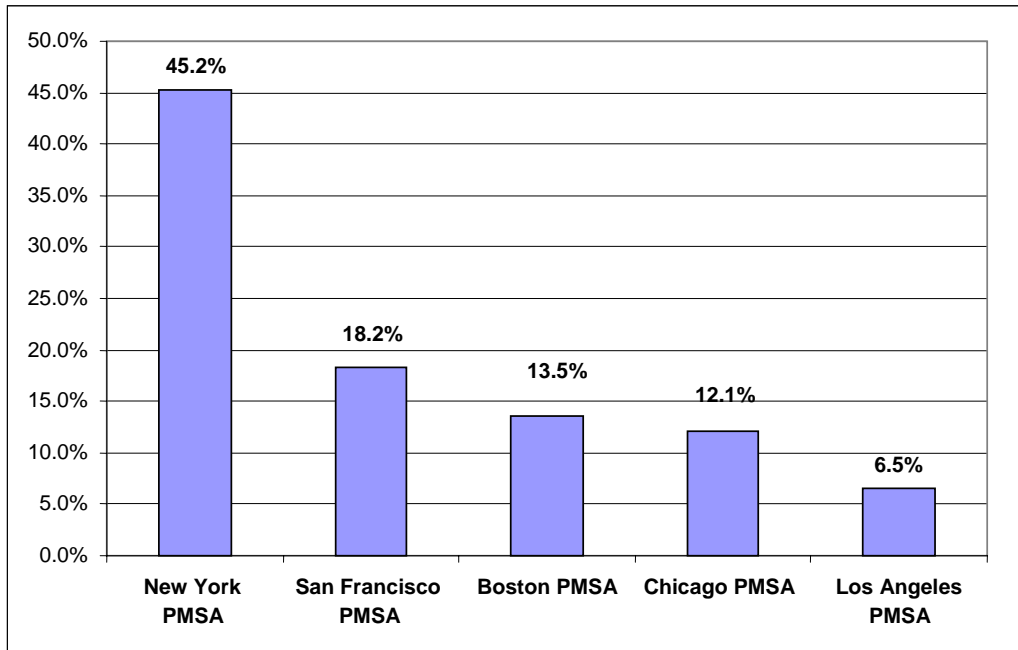


Source: Stanley R. Hoffman Associates, Inc.
Census Transportation Planning Package 2000

2.4 National Comparison of Transportation to Work: 2000

- As shown in Figure 2-3, on a national level for selected major primary metropolitan statistical areas (PMSAs), New York has the highest percentage of workers who use public transportation to work at 45.2 percent.
- In Figure 2-3, Los Angeles PMSA ranks the lowest at 6.5 percent in a national comparison to other major PMSAs for workers who use public transportation.

Figure 2-3
Public Transit Usage National Comparison: 2000



Source: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 2000

2.5 Dwelling Units: 1990 and 2000

The number of dwelling units increased across all of the five counties from 1990 to 2000.

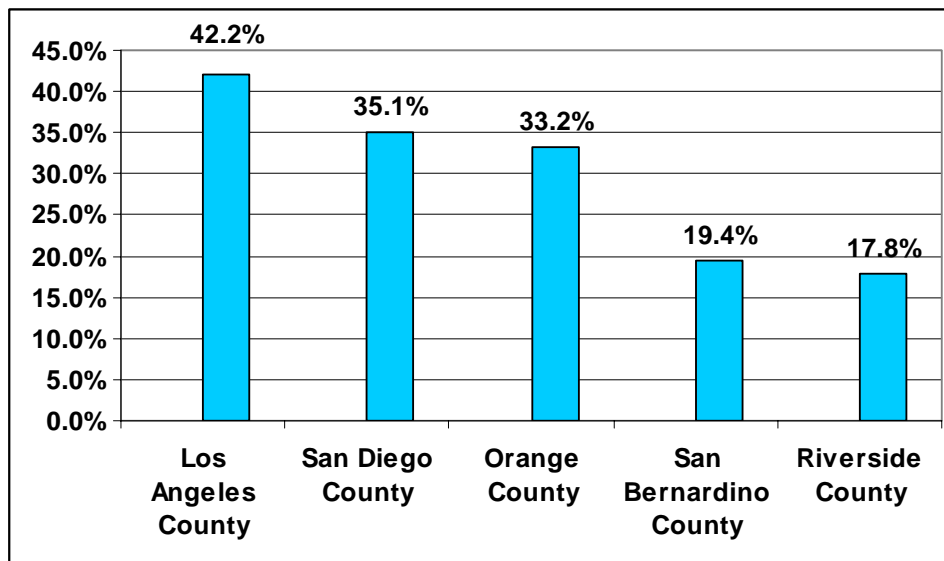
- As shown in Table 2-3, Riverside County has the second largest percentage of single family homes at 68 percent, behind San Bernardino County at 73.7 percent.
- Figure 2-4 also illustrates that Riverside County has the lowest percentage of multi-family dwelling units at 17.8 percent; San Bernardino is next at 19.4 percent.
- The more urbanized counties such as Orange, San Diego and Los Angeles have a higher percentage of multi-family homes ranging from 33.2 percent to 42.2 percent, respectively.

**Table 2-3
Dwelling Units: 1990 - 2000**

	1990	% Dist.	2000	% Dist.
Riverside County				
Single Family	313,302	64.8%	397,747	68.0%
Multi-Family	91,459	18.9%	104,066	17.8%
Mobile Homes/ Other	79,086	16.3%	82,861	14.2%
Total	483,847	100%	584,674	100%
Los Angeles County				
Single Family	1,739,874	55.0%	1,835,087	56.1%
Multi-Family	1,333,874	42.2%	1,379,201	42.2%
Mobile Homes/ Other	89,595	2.8%	56,621	1.7%
Total	3,163,343	100%	3,270,909	100%
San Bernardino County				
Single Family	382,903	70.6%	442,954	73.7%
Multi-Family	112,724	20.8%	116,581	19.4%
Mobile Homes/ Other	46,705	8.6%	41,834	7.0%
Total	542,332	100%	601,369	100%
Orange County				
Single Family	536,312	61.3%	614,751	63.4%
Multi-Family	297,552	34.0%	322,274	33.2%
Mobile Homes/ Other	41,208	4.7%	32,459	3.3%
Total	875,072	100%	969,484	100%
San Diego County				
Single Family	552,809	58.4%	628,531	60.4%
Multi-Family	338,701	35.8%	364,679	35.1%
Mobile Homes/ Other	54,730	5.8%	46,939	4.5%
Total	946,240	100%	1,040,149	100%

Source: Stanley R. Hoffman Associates
Census Transportation Planning Package 2000.

**Figure 2-4
Multi-Family Dwelling Units: 2000**



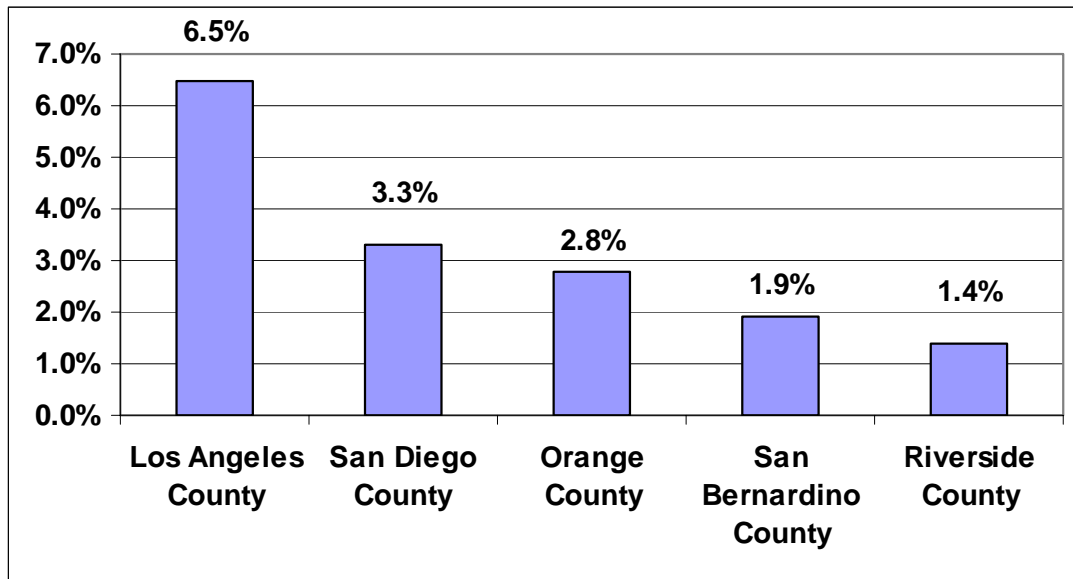
Source: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 2000

2.6 County Comparison of Public Transportation to Work

Public Transportation to work data for 2000 provides a comparison of selected counties in Southern California, as shown below:

- While nationally among selected major urban areas households in the Los Angeles County show relatively low usage of public transit to work, as shown in Figure 2-5, it is still the highest rate among other Southern California counties.
- Orange and San Diego counties are next ranging from 2.8 percent to 3.3 percent, respectively, roughly half that of Los Angeles County.
- The Inland Empire counties of Riverside and San Bernardino, while probably having the most transit growth potential are relatively low in transit usage to work, ranging from 1.4 percent to 1.9 percent.

Figure 2-5
Public Transportation to Work County Comparison: 2000



Source: Stanley R. Hoffman Associates, Inc.
U.S. Bureau of the Census 2000

Chapter 3 – Western Riverside County Growth Projections

The following chapter provides an overview of the 2000 to 2030 growth projections for WRCOG, Riverside County and the Southern California region. The main objective of providing this overview is to identify the relative growth trends of population, households and employment in WRCOG, Riverside County and Southern California.

3.1 Geographies and Data Assembly

- Projection data was provided by WRCOG for TUMF zones at the TAZ LEVEL for the year 2030.
- The base year 2000 data for WRCOG was assembled from the 2000 Census SF1 file.
- Projection data for the Southern California region was obtained from SCAG RTP 2004 for Los Angeles, Orange, San Bernardino and Riverside counties for the 2000 to 2030 projection period.

3.2 Population and Households Growth: 2000 to 2030

Regional Overview

- As shown in Table 3-1, population and households in the Southern California region are projected to grow at annual average growth rates of 1.1 percent and 1.2 percent, respectively, over the 2000 to 2030 time period.
- Consequently, the persons per household ratio in Southern California declines from 3.07 in 2000 to 2.99 in 2030.
- Riverside County has the highest population and household annual average growth rate among the Southern California counties at 2.4 percent and 2.7 percent respectively, and it is projected to overtake San Bernardino as the third most populous county in the region by 2030.
- The more urbanized counties of Los Angeles and Orange have relatively slower rates of population and household growth being largely built-out.

Western Riverside County

- As shown in Table 3-2, population in the WRCOG region is projected to grow at an annual average growth rate of 2.3 percent over the 2000 to 2030 time period, reaching nearly 2.34 million by 2030.
- Households in WRCOG are projected to grow at an annual average growth rate of 2.4 percent reaching 779,925 by 2030.

Table 3-1
Population, Households and Employment Projections: 2000 to 2030

County / Region	2000	2030	Percent Change 2000 to 2030	Annual Average Growth Rate 2000 to 2030
Los Angeles				
Population	9,580,028	12,221,799	27.6%	0.8%
Households	3,137,047	4,120,270	31.3%	0.9%
Employment	4,453,477	5,660,992	27.1%	0.8%
Persons per Household	3.05	2.97		
Jobs per Household	1.42	1.37		
Orange				
Population	2,866,332	3,552,742	23.9%	0.7%
Households	939,036	1,098,474	17.0%	0.5%
Employment	1,514,611	1,921,806	26.9%	0.8%
Persons per Household	3.05	3.23		
Jobs per Household	1.61	1.75		
San Bernardino				
Population	1,718,311	2,713,149	57.9%	1.5%
Households	530,498	897,739	69.2%	1.8%
Employment	594,923	1,178,890	98.2%	2.3%
Persons per Household	3.24	3.02		
Jobs per Household	1.12	1.31		
Riverside				
Population	1,559,482	3,143,468	101.6%	2.4%
Households	509,311	1,127,780	121.4%	2.7%
Employment	526,541	1,188,976	125.8%	2.8%
Persons per Household	3.06	2.79		
Jobs per Household	1.03	1.05		
Southern California ¹				
Population	15,724,153	21,631,158	37.6%	1.1%
Households	5,115,892	7,244,263	41.6%	1.2%
Employment	7,089,552	9,950,664	40.4%	1.1%
Persons per Household	3.07	2.99		
Jobs per Household	1.39	1.37		

1. SCAG includes Ventura and Imperial Counties; these are not included in the Southern California totals in this table.

Source: Stanley R.Hoffman Associates, Inc.
SCAG RTP 2004.

WRCOG TUMF ZONES

- As shown in Table 3-2, population and household growth rates within the WRCOG region is faster among the less urbanized TUMF zones of Pass and Hemet/San Jacinto.
- The more urbanized Northwest TUMF is projected to grow the slowest, but has the largest share of the WRCOG population in 2030 at approximately 37 percent.
- Persons per household ratio in the WRCOG region is projected to decline marginally from 3.07 in 2000 to 3.00 in 2030.
- In comparison, the Central and Northwest TUMFs are projected to have a relatively larger persons per household ratio at 3.17 and 3.14, respectively.

**Table 3-2
WRCOG Population and Household Projections: 2000 to 2030**

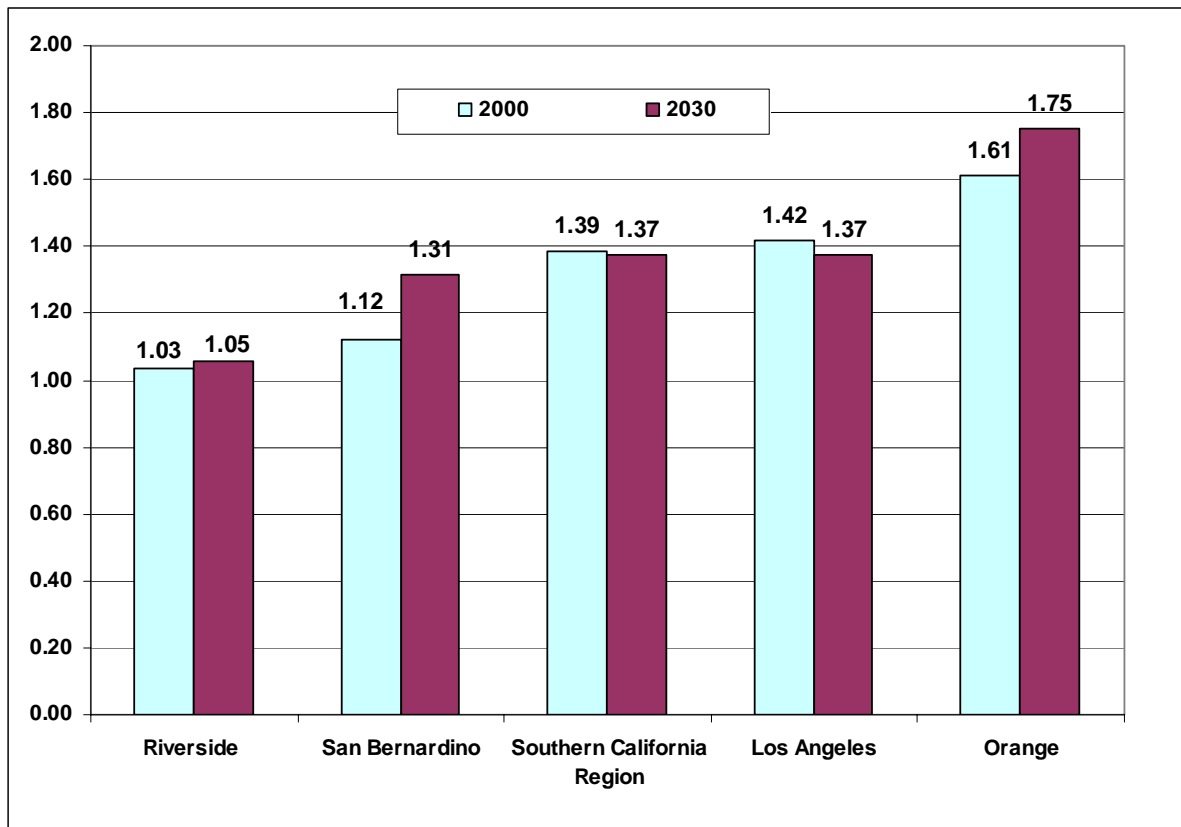
	2000	2030	Percent Change 2000 to 2030	Annual Average Growth Rate 2000 to 2030
CENTRAL				
Population	235,404	471,671	100.4%	2.3%
Households	70,535	148,755	110.9%	2.5%
Persons per Household	3.34	3.17		
HEMET / SAN JACINTO				
Population	123,323	318,701	158.4%	3.2%
Households	49,809	127,967	156.9%	3.2%
Persons per Household	2.48	2.49		
NORTHWEST				
Population	539,553	857,383	58.9%	1.6%
Households	169,337	272,684	61.0%	1.6%
Persons per Household	3.19	3.14		
PASS				
Population	52,952	155,880	194.4%	3.7%
Households	20,139	56,129	178.7%	3.5%
Persons per Household	2.63	2.78		
SOUTHWEST				
Population	226,910	534,901	135.7%	2.9%
Households	73,426	174,391	137.5%	2.9%
Persons per Household	3.09	3.07		
WRCOG				
Population	1,178,142	2,338,537	98.5%	2.3%
Households	383,245	779,925	103.5%	2.4%
Persons per Household	3.07	3.00		

Source: Stanley R.Hoffman Associates, Inc.
SCAG RTP 2004.

3.3 Jobs/Housing Projections: SCAG 2030

- As shown in Figure 3-1, jobs per household ratio in the Southern California region is relatively stable at between 1.39 in 2000 and 1.37 in 2030.
- However, there are some intra-regional shifts projected over the 2000 to 2030 time-frame.
- San Bernardino County is projected to converge with the Southern California and Los Angeles County ratios, with the jobs per household increasing from 1.12 in 2000 to 1.31 in 2030.
- Riverside County on the other hand remains relatively jobs poor in comparison to the region remaining at around 1.05 jobs per household over the 2000 to 2030 period.
- The above implies that residents of Riverside County are more likely to continue commuting to other destinations outside the County for work. This underscores the urgent need to address issues of public transit in the near future, especially in the context of congestion and energy crises.

Figure 3-1
Jobs per Households Projection: 2000 to 2030



Source: Stanley R. Hoffman Associates, Inc.
SCAG RTP 2004.

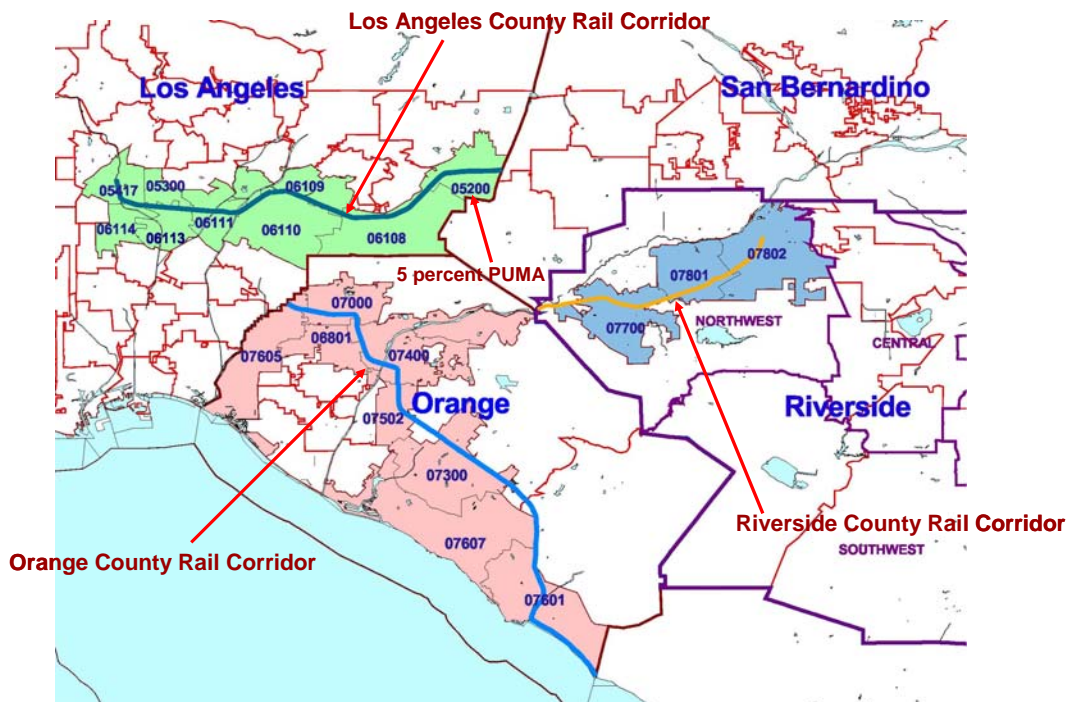
Chapter 4- Public Use Microdata Sample Analysis

This study utilizes the 5 percent Public Use Microdata Sample (PUMS) to establish travel behavior across population groups within specific geographies of the Southern California region. The analysis specifically contrasts wider county areas with selected county rail corridors in order to establish patterns of commute choice as a result of availability of transit.

4.1 Geographies and Data Assembly

- The microdata sample analysis was carried out for the WRCOG region, the 4 counties including Los Angeles, Orange, San Bernardino and Riverside, and selected rail corridors within these counties.
- Data in the 5 percent PUMS file is gathered for geographies known as Public Use Microdata Areas (PUMAs), which include a minimum population of 500,000.
- Data was extracted from the 5 percent PUMS file by identifying Public Use Microdata Areas (PUMAs) for the selected counties and rail corridors.
- As shown in Figure 3-1, the three rail corridors analyzed in the study included those in Los Angeles, Orange County and Riverside County. The rail corridors selected are major Metrolink commute routes in the Southern California region.
- Data for the corridors was extracted from the 5 percent PUMS file by identifying PUMAs that intersected with the rail lines.

Figure 4-1
Public Use Microdata Areas used in the Study



Source: Stanley R. Hoffman Associates, Inc.

4.2 Selection of Data and Variables

- Having identified the geographies of interest, person and household variables were selected from the 5 percent PUMS to obtain cross-tabulations of interest.
- The primary variable of interest was householders' commute choice to work, classified by secondary variables including household type, race/ethnicity, household income and occupation.
- The 5 percent PUMS file used for these cross-tabulations was obtained in a file format compatible with the SPSS statistical software from the UCLA Institute of Social Sciences Research Data Archive.
- The above file used for the demand study already had person and household records collapsed into a single file with unique person records coded for all person and household variables.
- Thus, householder records identified by PUMAs for the study areas, which included both person and household variables, were isolated from the 5 percent PUMS extract.
- The variables in their original form were recoded and reclassified for the purposes of the demand study to parallel categories used in other studies, including the CTOD studies.

4.3 Recoding and Categorization of Key Variables

Commute Choice to Work

- Householder Commute Choice to Work is grouped in this study into four broad categories-- Car-Driving Alone, Carpooled, Transit and Non-commuters.
- These categories are constructed by coding the PUMS person variable, Means of Transportation to Work (shown in Appendix Table A-1) with the person variable Carpool (shown in Table A-2).

Study Household Categories

- The study household type of the householder is grouped into four categories-- married couple with children, single householder with children, singles living alone, and other householders.
- These categories are constructed by coding the PUMS household variable, Household Type (shown in Appendix Table A-3) with the household variable indicator Presence of Own children under 18 years (shown in Table A-4).

Race/Ethnicity Categories

- Race/ethnicity of the householder is grouped into five categories—White, African American, Asian, Other, and Hispanic.
- These categories are constructed by coding the PUMS person variable, Race (shown in Appendix Table A-5) with the person variable indicating Hispanic or Latino Origin (shown in Table A-6).

Age Categories

- Age of the householder is grouped into four categories—Under 18 years, 18 years-34 years, 35 years-64 years, and 65 years and over.
- These categories are constructed by grouping the person variable Age (shown in Appendix Table A-7) into the above four categories.

Household Income Categories

- Household Income identified with the householder is grouped into four categories-- less than \$30,000, \$30,000-\$59,999, \$60,000-\$99,999, and \$100,000 and over.
- These categories are constructed by grouping the household variable Household Income (shown in Appendix Table A-8) into the above four categories.

Employment Categories

- Occupation of the householder is grouped into five categories-- management/professional/related, service, sales & office, farming/fishing/forestry, and construction/extraction/maintenance/ production/transportation/material moving.
- These categories are constructed by grouping the person variable census industry of employment INDCEN (shown in Appendix Table A-9) into the above five categories.

4.4 Cross Tabulations of Public Transit Usage with Key Variables

The following section summarizes the cross-tabulation analysis from the 2000 Census 5 percent PUMS data. The distribution of public commute rates of householders by selected geographies are presented by key classifications including household type, race of the householder, age of the householder, household income, and occupation of the householder.

Public Transit Commute Choice by Household Type

- Among the household types, *Single Householders with Children* show the highest percentage transit usage across all study areas, as shown in Table 4-1.
- The percentage transit usage among all the other household types is relatively similar to each area average.

Table 4-1
Public Transit Commuting by Study Areas and Household Types: 2000

Study Household Categories	WRCOG	LA PMSA	OC PMSA	RIV/SB PMSA	LA RAIL CORR	OC RAIL CORR	RIV RAIL CORR
Married Couple with Child/ren	0.6%	2.4%	1.1%	0.7%	2.6%	1.2%	0.7%
Single Householders with Child/ren	1.7%	5.7%	2.2%	1.9%	5.7%	2.2%	2.2%
Singles Alone	0.6%	2.8%	0.9%	0.8%	3.6%	1.0%	1.5%
Other Households	<u>0.7%</u>	<u>2.8%</u>	<u>1.0%</u>	<u>0.7%</u>	<u>3.2%</u>	<u>1.2%</u>	<u>1.2%</u>
TOTAL	0.7%	3.0%	1.1%	0.9%	3.4%	1.2%	1.2%

Source: Stanley R.Hoffman Associates, Inc.

Public Transit Commute Choice by Race/Ethnicity

- Among the Race/Ethnicity categories, *African American* householders showed relatively higher percentages of transit usage across all study areas, as shown in Table 4-2.
- Among *Hispanic* households, the percentage transit usage was relatively higher than the study area average in Los Angeles and Orange Counties, including their selected rail corridor areas.

Table 4-2
Public Transit Commuting by Study Areas and Race/Ethnicity

Race/Ethnicity	WRCOG	LA PMSA	OC PMSA	RIV/SB PMSA	LA RAIL CORR	OC RAIL CORR	RIV RAIL CORR
White	0.6%	1.4%	0.7%	0.6%	1.4%	0.8%	1.0%
African American	2.6%	4.3%	2.3%	2.6%	6.3%	2.5%	4.7%
Asian	0.7%	1.9%	0.6%	1.1%	1.1%	0.6%	0.9%
Other	0.5%	1.6%	0.6%	0.8%	2.8%	0.5%	0.7%
Hispanic	<u>0.8%</u>	<u>5.2%</u>	<u>2.8%</u>	<u>0.9%</u>	<u>4.2%</u>	<u>3.0%</u>	<u>0.9%</u>
TOTAL	0.7%	3.0%	1.1%	0.9%	3.4%	1.2%	1.2%

Source: Stanley R.Hoffman Associates, Inc.

Public Transit Commute Choice by Age

- Among the age categories, *Below 18 years* householders showed relatively higher percentages of transit usage across all study areas, as shown in Table 4-3, except for the selected Los Angeles and Riverside County rail corridors.
- Householders in the age category *65 years and Over* showed the least usage of public transit as commute choice.

Table 4-3
Public Transit Commuting by Study Areas and Age

Age Categories	WRCOG	LA PMSA	OC PMSA	RIV/SB PMSA	LA RAIL CORR	OC RAIL CORR	RIV RAIL CORR
Below 18 years	3.2%	7.2%	2.8%	4.8%	0.0%	4.3%	0.0%
18 years to 34 years	1.2%	4.2%	1.5%	1.1%	4.6%	1.6%	1.7%
35 years to 64 years	0.8%	3.1%	1.2%	1.0%	3.6%	1.4%	1.1%
65 years and Over	<u>0.1%</u>	<u>0.5%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.8%</u>	<u>0.1%</u>	<u>0.5%</u>
TOTAL	0.7%	3.0%	1.1%	0.9%	3.4%	1.2%	1.2%

Source: Stanley R.Hoffman Associates, Inc.

Public Transit Commute Choice by Household Income

- Public transit usage was markedly higher among householders who were classified as belonging to households with income *Below \$30,000 per annum*, as shown in Table 4-4.
- Householders belonging to households with income in the range *\$60,000 to \$99,999* had the highest rates of public transit usage in WRCOG and the Riverside Rail Corridor.

Table 4-4
Public Transit Commuting by Study Areas and Household Income Category

Household Income Categories	WRCOG	LA PMSA	OC PMSA	RIV/SB PMSA	LA RAIL CORR	OC RAIL CORR	RIV RAIL CORR
Not in Universe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Below \$30,000	0.9%	4.7%	1.8%	1.0%	4.7%	1.8%	1.5%
\$30,000 to \$59,999	0.6%	2.9%	1.3%	0.7%	3.2%	1.5%	0.8%
\$60,000 to \$99,999	0.9%	1.7%	0.8%	0.9%	1.8%	0.9%	1.5%
\$100,000 and Over	<u>0.6%</u>	<u>1.1%</u>	<u>0.5%</u>	<u>0.9%</u>	<u>2.1%</u>	<u>0.6%</u>	<u>1.0%</u>
TOTAL	0.7%	3.0%	1.1%	0.9%	3.4%	1.2%	1.2%

Source: Stanley R.Hoffman Associates, Inc.

Public Transit Commute Choice by Industry of Employment

- Householders in the *Services* occupation category (which includes local and ancillary support services) comprise the highest transit users across the region among the non-primary occupations, as shown in Table 4-5.
- In contrast, householders in the *Professional, Management and Technical*, and *Sales and Office* occupation categories display among the highest usage of public transit in WRCOG and the Riverside Rail Corridor.

Table 4-5
Public Transit Commuting by Study Areas and Occupation Categories

Occupation Categories	WRCOG	LA PMSA	OC PMSA	RIV/SB PMSA	LA RAIL CORR	OC RAIL CORR	RIV RAIL CORR
Not in Universe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prof, Mngrs,Tech	1.3%	2.1%	0.8%	1.3%	2.4%	1.0%	1.8%
Services	1.0%	7.8%	3.4%	1.5%	8.0%	3.4%	1.4%
Sales and Office	1.3%	3.9%	1.2%	1.4%	4.2%	1.4%	1.9%
Farm,Extrc,Forestry	0.0%	6.1%	1.3%	0.2%	16.0%	0.0%	0.0%
Const, Extrc,Maint,Mfg,Transp	<u>0.4%</u>	<u>4.0%</u>	<u>1.5%</u>	<u>0.5%</u>	<u>4.3%</u>	<u>1.8%</u>	<u>0.6%</u>
TOTAL	0.7%	3.0%	1.1%	0.9%	3.4%	1.2%	1.2%

Source: Stanley R.Hoffman Associates, Inc.

Chapter 5 – TOD Demand Projections for Western Riverside

The following chapter presents the results of the transit oriented development (TOD) demand study and the steps involved in the demand analysis. The discussion includes an overview of the demand estimation methodology and assumptions used in the demand estimation model. The results are presented in terms of TOD demand by household type and commute characteristics.

5.1 TOD Demand Estimation Methodology

- The projected demand for transit oriented development (TOD) for WRCOG has been presented by TUMF zones over the 2000 to 2030 period.
- The study projects the demand for TOD in incremental terms, i.e. as projected net demand for TOD over the 2000 to 2030 time period.
- The primary mode of commute of the householder is taken in this study as a proxy for the commute characteristic of the household.
- The incremental demand for TOD is calculated as a percentage capture of the net growth in households in three main categories: public transit, auto commuters, and non-commuters.
- Capture rates for TOD differ for each of the above three categories.
- The final demand numbers for TOD are projected by household type and household commute characteristics for each TUMF zone.

The incremental demand for TOD over the 2000 to 2030 period has been projected based on the following three primary parameters:

- 2000 to 2030 household growth by TUMF zones
- 2030 household types by commute characteristics
- Preference for TOD by household commute characteristics

Further, assumptions have been made that alter the household commute composition from the 2000 base year levels, leading to two TOD projection scenarios:

- **Scenario 1:** Public transit usage of householders (and therefore households) by TUMF zones rises as urbanization levels increase in the WRCOG region. The projected increase in households per square mile between 2000 and 2030 for each TUMF zone is used as a proxy for measuring urbanization levels.
- **Scenario 2:** Public transit usage of householders by TUMF zones are projected to reach levels intermediate between the existing public transit usage rates for the Riverside County rail corridor and the Los Angeles County rail corridor.

5.2 WRCOG 2000 to 2030 Households Growth by TUMF Zones

- As shown in Table 5-1, total households in the WRCOG region are projected to grow by 396,680 from 383,245 in 2000 to 779,925 in 2030.
- Approximately 46 percent of this growth is projected to be concentrated in the Northwest and Central TUMF zones.
- The projected net growth in households from 2000 to 2030 is the basis for calculating the distribution of household types by commute characteristics and captured TOD demand.

Table 5-1
WRCOG TOD Demand Study
Projected Growth in Households by TUMF Zones: 2000 to 2030

	2000 Households	2030 Households	2000 to 2030 Households Increment	Percent Share of 2000 to 2030 Growth
Northwest	169,315	272,684	103,368	26.1%
Central	70,507	148,755	78,248	19.7%
Southwest	73,384	174,391	101,007	25.5%
Hemet	49,877	127,967	78,090	19.7%
Pass	<u>20,161</u>	<u>56,129</u>	<u>35,967</u>	<u>9.1%</u>
WRCOG Total	383,245	779,925	396,680	100.0%

Source: Stanley R. Hoffman Associates, Inc.
Western Riverside Council of Governments.

5.3 Projected 2030 Households by Household Types

- The 2030 household projections by TUMF zones are disaggregated into four major household type categories similar to the CTOD study, as shown in Table 5-2.
- The 2030 household type distribution by TUMF zones is based on a trending of the distributional change from 1990 to 2000, as shown in Appendix Table C-1.
- The projected 2030 households by TUMF zones are distributed by household types, as shown in Table 5-3.
- As shown in Table 5-3, about 40 percent of the growth is in “other households”, which includes *couples without children, single householders without children not living alone, and non-family households*.

Table 5-2
 WRCOG TOD Demand Study
 Study Household Type Categories

Household Type Category	Definition
Married Couple with Child/ren	Couples with children below 18 years
Single Householders with Child/ren	Single Parent households
Singles Alone	Singles living alone
Other Households	Married couples without children, male householder without children, female householder without children, and non-family households

Source: Stanley R.Hoffman Associates, Inc.
 Center for Transit Oriented Development.

Table 5-3
 WRCOG TOD Demand Study
 Projected Distribution of Households by Household Types

Household Type Categories	2000 Households	2030 Households	2000 to 2030 Households Increment	Percent Share of 2000 to 2030 Growth
Married Couples w/ Children	118,577	224,860	106,283	26.8%
Single HHs with Children	40,723	96,282	55,559	14.0%
Singles HHs Alone	72,003	149,838	77,835	19.6%
Other HHs	<u>151,942</u>	<u>308,946</u>	<u>157,004</u>	<u>39.6%</u>
Total	383,245	779,925	396,680	100.0%

Source: Stanley R.Hoffman Associates, Inc.

5.4 Projected 2030 WRCOG Commute Characteristics

- As stated earlier, this study uses the commute choice of householders as a proxy for household commute characteristics. The householders are identified by the household type categories as discussed in the previous section.
- The commute characteristics of householders by household types for base year 2000 have been calculated from the 2000 Census 5 percent Public Use Microdata Sample (PUMS) for each TUMF zone, as shown in Table 5-4.
- As shown in Table 5-4, according to the PUMS data, 0.8 percent and 56.8 of all householders in WRCOG use public transit and auto commute, respectively. Non-commuting householders comprised an average of 38.7 percent of all householders.
- These percentages are applied to the projected 2030 households by household types for Scenario 1, as shown in Appendix Table C-2, and Scenario 2, as shown in Appendix Table C-3.
- It is interesting to note that the highest transit usage is among *Single Householders with Children* at an average of 1.5 percent for the WRCOG region.

Scenario 1

- Public transit usage of householders (and therefore households) by TUMF zones rises with the increase in the urbanization levels in WRCOG, as shown Table 5-5.
- As a result, transit usage is projected to increase by 1.6 to 2.8 times from the 2000 base year rates by TUMF zones, to reach an average of 1.5 percent for the WRCOG region, as shown in Figure 5-1.
- Consequently, auto commuting declines to 56.1 percent by 2030 from 56.8 percent in 2000 under Scenario 1, as shown in Figure 5-2.
- No change has been assumed for the percentage of non-commuting householders over the 30 year timeframe, as shown in Appendix Table C-2.

Scenario 2

- Public transit usage of householders by TUMF zones are projected to reach levels intermediate between the existing public transit usage rates for the Riverside County Rail Corridor and the Los Angeles County Rail Corridor.
- As shown in Figure 5-1, Scenario 2 uses an average public transit usage rate of 2.3 percent for the WRCOG region.
- Auto commuting declines to 55.2 percent by 2030 from 56.8 percent in 2000 under Scenario 2, as shown in Figure 5-2.
- Again, no change has been assumed for the percentage of non-commuting householders over the 30 year timeframe, as shown in Appendix Table C-3.

Table 5-4
WRCOG TOD Demand Study
Distribution of Households by Commute by TUMF Zones: 2000

Public Transit Usage

Household Type	Northwest	Southwest	Pass/Hemet	Central	WRCOG
Married Couple with Child/ren	0.7%	0.5%	0.6%	1.2%	0.7%
Single Householders with Child/ren	1.9%	0.5%	0.7%	1.9%	1.5%
Singles Alone	0.8%	0.2%	0.4%	0.6%	0.5%
Other Households	<u>0.7%</u>	<u>0.5%</u>	<u>0.2%</u>	<u>1.4%</u>	<u>0.7%</u>
Total	0.9%	0.4%	0.4%	1.3%	0.8%

Auto Commuters

Household Type	Northwest	Southwest	Pass/Hemet	Central	WRCOG
Married Couple with Child/ren	76.4%	79.2%	75.4%	76.9%	77.1%
Single Householders with Child/ren	62.0%	64.4%	61.5%	66.5%	63.3%
Singles Alone	39.5%	35.3%	26.0%	53.7%	37.4%
Other Households	<u>50.0%</u>	<u>49.3%</u>	<u>35.3%</u>	<u>58.9%</u>	<u>48.5%</u>
Total	57.5%	58.9%	43.3%	66.8%	56.8%

Non Commuters

Household Type	Northwest	Southwest	Pass/Hemet	Central	WRCOG
Married Couple with Child/ren	19.1%	15.2%	20.3%	19.2%	18.4%
Single Householders with Child/ren	32.5%	32.4%	33.9%	27.4%	31.6%
Singles Alone	55.9%	60.8%	71.7%	42.7%	58.9%
Other Households	<u>45.0%</u>	<u>45.0%</u>	<u>61.3%</u>	<u>36.9%</u>	<u>46.9%</u>
Total	37.7%	35.9%	53.3%	29.0%	38.7%

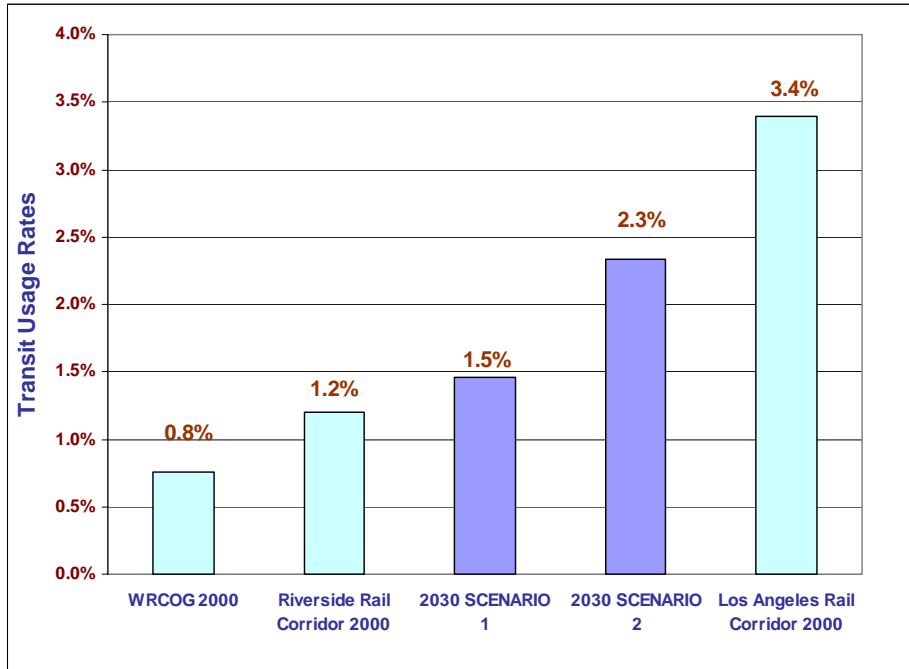
Source: Stanley R.Hoffman Associates, Inc.
2000 Census 5 percent Public Use Microdata Sample.

Table 5-5
WRCOG TOD Demand Study
Growth in Household Density by TUMF Zone: 2000 to 2030

WRCOG TUMF ZONE	2000	Square	HHs per	2030	Square	HHs per	Percent Increase
	Households	Miles	Sq. Mi.	Households	Miles	Sq. Mi.	
NORTHWEST	169,315	333	509	272,684	333	820	161.1%
CENTRAL	70,507	222	317	148,755	222	670	211.0%
SOUTHWEST	73,384	564	130	174,391	564	309	237.6%
HEMET	49,877	211	237	127,967	211	607	256.6%
PASS	<u>20,161</u>	<u>261</u>	<u>77</u>	<u>56,129</u>	<u>261</u>	<u>215</u>	<u>278.4%</u>
TOTAL	383,245	1,590	241	779,925	1,590	490	203.5%

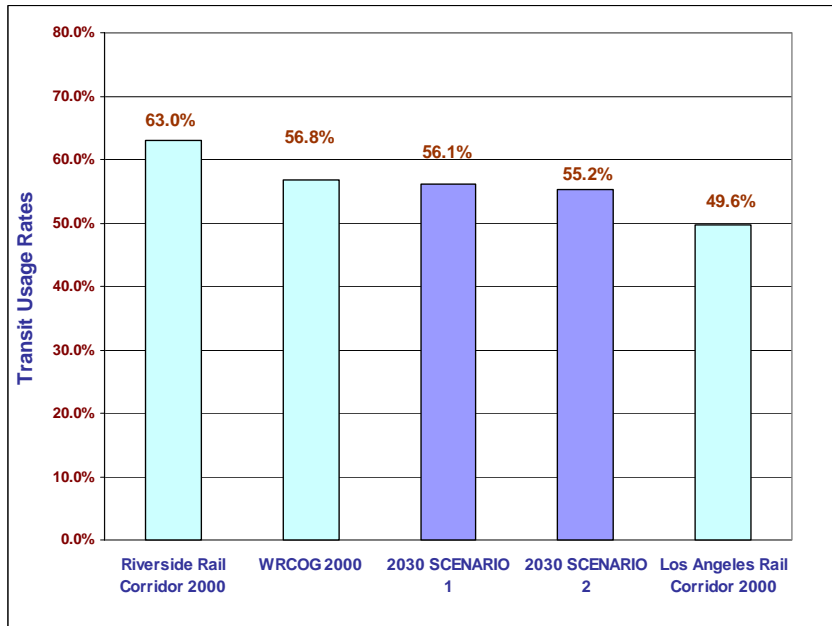
Source: Stanley R.Hoffman Associates, Inc.

Figure 5-1
WRCOG TOD Demand Study
2000 to 2030 Householder Transit Usage Rates¹



1. Includes householders who use bus or rail as the primary commute mode.
 Source: Stanley R. Hoffman Associates, Inc.

Figure 5-2
WRCOG TOD Demand Study
2000 to 2030 Householder Auto Commuting Rates¹



1. Includes householders who either drove alone or car pooled as the primary commute mode.
 Source: Stanley R. Hoffman Associates, Inc.

5.5 TOD Capture Rates by Commute Types

- The next step in the TOD demand analysis involves an estimation of capture from the 2000 to 2030 household growth of households that show strong interest in transit oriented development (TOD).
- In this study we use the results of a survey conducted by True North Research in April, 2006 for WRCOG estimating public support and attitudes in the region toward TOD.
- The demand analysis uses surveyed interest in moving into a transit oriented village over the 2-year and 10-year time frame.
- The number of respondents showing strong interest in TOD was used as the basis for the capture. This was assessed by the response “very interested” in living in a transit village in the True North Survey¹.
- Responses of “very interested”, as shown in Table 5-6, were cross tabulated by commute choice of the respondent. This gives us the TOD capture rates by commute choice.
- The demand capture in the present study is based on the 2000 to 2030 household growth projection. However, since the survey was conducted in 2006, weighted capture rates were calculated by commute type for the 30-year time-frame to account for the estimated lower TOD demand capture from 2000 to 2006, as shown in Table 5-7.
- As shown in Table 5-7, an estimated 41.0 percent of households with transit as the primary commute mode of the householder are projected as very interested in transit oriented development.
- An estimated 18.0 percent of car commuting households and 17.6 percent of non-commuting households are projected as very interested in transit oriented development over the 2000 to 2030 period.

Table 5-6
WRCOG TOD Demand Study
Response of Very High Interest in Transit Oriented Development over 2 Years and 10 Years

INTEREST IN TOD ¹	TOTAL	COMMUTERS	NON COMMUTERS	COMMUTERS					
				CAR ALONE	CARPOOL	TRANSIT	OTHER	CAR USERS ¹	TRANSIT USERS
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
2YRS	14.0%	15.0%	13.1%	12.8%	20.4%	33.3%	23.8%	14.0%	33.3%
10 YRS	19.4%	20.1%	18.8%	17.7%	25.8%	42.9%	28.6%	19.0%	42.9%

1. Based on a telephone survey conducted by True North Research in Feb-March, 2006. The table shows the percent of respondents who said they were 'very interested' in living in a transit oriented village over the 2-year and 10-year time-frames.

2. Includes auto commuters who drove alone and those who car pooled.

Source: Stanley R. Hoffman Associates, Inc.
True North Research.

¹ This was in response to Q.12 and Q.13 of the survey instrument, as shown in Appendix Table B-1: “In general, how interested would you be in living in a transit village in the next [year or two—Q.12 & ten years—Q.13]? Would you say you would be very interested, somewhat interested, or not at all interested?”

Table 5-7
 WRCOG TOD Demand Study
 Estimation of TOD Capture Rates: 2000 to 2030

Primary Mode of Commute	2000-2006 ¹	2006-2030 ²	2000-2030
Transit	33.3%	42.9%	41.0%
Auto Commuters	14.0%	19.0%	18.0%
Non-commuters	13.1%	18.8%	17.6%

1. The capture rates applied to this time period were the response rates of very interested in TOD for the 2-year period in the True North survey.

2. The capture rates applied to this time period were the response rates of very interested in TOD for the 10-year period in the True North survey.

Source: Stanley R.Hoffman Associates, Inc.

5.6 Projected TOD Capture

The capture rates derived from Table 5-7 are applied to the 2000-2030 household growth by primary commute choice by TUMF zones to estimate TOD capture under the two scenarios as discussed earlier -- Scenario 1 and Scenario 2.

Scenario 1

- Household growth from 2000 to 2030 by household and commute type by TUMF zones under Scenario 1 is shown in Appendix Table C-4.
- Capture rates, when applied to the household growth distributed by household type and commute type, results in an estimation of TOD households by household and commute type by TUMF zones, as shown in Appendix Table C-5.
- As shown in Table 5-8, under Scenario 1, out of the projected growth of 396,680 households over 2000 to 2030 for the whole WRCOG region, a total of 70,136 households are estimated as potential TOD households.
- Of these, households with auto commuting as the primary mode comprise nearly 55 percent of total at 38,442, as shown in Table 5-8 and Figure 5-2.
- Though transit users have the highest capture rate amongst the three commute categories, they only comprise 5 percent of the total potential demand due to the low levels of transit usage.

Table 5-8
WRCOG TOD Demand Study
Scenario 1 Estimated TOD Incremental Capture: 2000 to 2030¹

	2000 to 2030 Households Increment	Households by Commute Choice of Householder		
		Transit Users	Car Users	Non-Commuters
All Households				
Northwest	103,368	2,327	56,406	40,515
Central	78,248	3,172	48,158	24,509
Southwest	101,007	1,495	60,778	33,999
Hemet	78,090	1,048	33,688	41,002
Pass	<u>35,967</u>	<u>456</u>	<u>14,418</u>	<u>20,010</u>
WRCOG Total	396,680	8,497	213,448	160,034
TOD Capture Rates ²		41.0%	18.0%	17.6%
TOD Households				
Northwest	18,254	953	10,159	7,143
Central	14,293	1,299	8,673	4,321
Southwest	17,552	612	10,946	5,994
Hemet	13,725	429	6,067	7,229
Pass	<u>6,311</u>	<u>187</u>	<u>2,597</u>	<u>3,528</u>
WRCOG Total	70,136	3,480	38,442	28,214
<i>Percent of Total Demand</i>	100.0%	5.0%	54.8%	40.2%

1. Scenario 1 assumes average public transit commute rates reach 1.2 percent for the WRCOG region by 2030; consequently, average auto commute rates for WRCOG decline to 56.1 percent by 2030.

2. TOD Capture rates based on a survey of 1,278 households in WRCOG conducted by True North Research in Feb-March, 2006.

Source: Stanley R. Hoffman Associates, Inc.

Scenario 2

- Household growth from 2000 to 2030 by household and commute type under Scenario 2 by TUMF zones is shown in Appendix Table C-6.
- Capture rates, when applied to the household growth distributed by household type and commute type, results in an estimation of TOD households by household and commute type by TUMF zones, as shown in Appendix Table C-7.
- As shown in Table 5-9, under Scenario 2, out of the projected growth of 396,680 households over 2000 to 2030 for the whole WRCOG region, a total of 71,708 households are projected as potential TOD households.

- Since Scenario 2 assumes higher overall transit usage rates of 2.3 percent compared to 1.5 percent under Scenario 1, transit users comprise 8.8 percent of the total potential demand or 6,287 households, as shown in Table 5-9 and Figure 5-3.
- Consequently, households that are projected to use cars or carpools as their primary mode of commute decline to 52 percent of the total potential demand compared to Scenario 1.

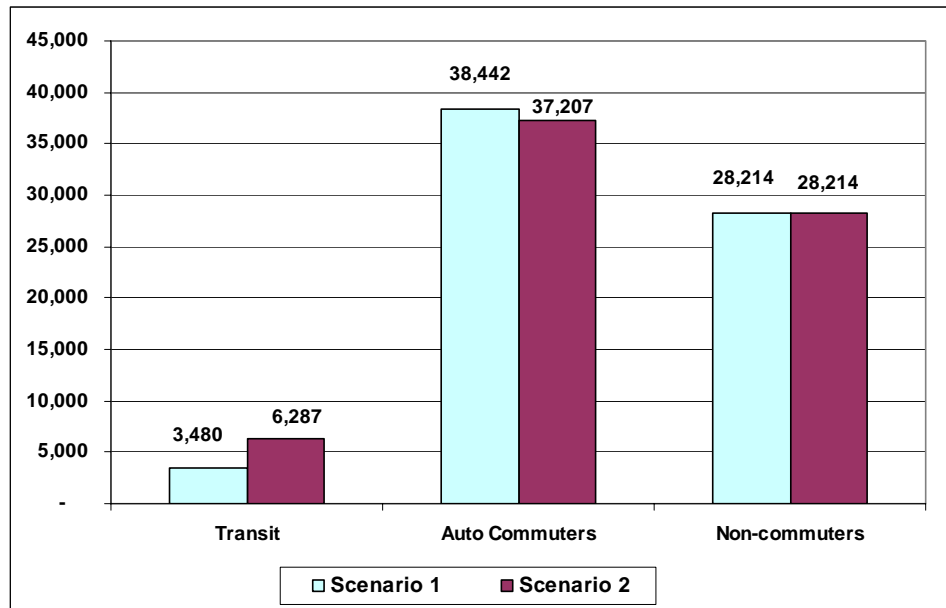
Table 5-9
WRCOG TOD Demand Study
Scenario 2 Estimated TOD Incremental Capture: 2000 to 2030¹

	2000 to 2030 Households Increment	Households by Commute Choice of Householder		
		Transit Users	Car Users	Non-Commuters
All Households				
Northwest	103,368	4,591	54,141	40,515
Central	78,248	5,617	45,713	24,509
Southwest	101,007	2,587	59,686	33,999
Hemet	78,090	1,785	32,951	41,002
Pass	<u>35,967</u>	<u>774</u>	<u>14,100</u>	<u>20,010</u>
WRCOG Total	396,680	15,353	206,593	160,034
TOD Capture Rates ²		41.0%	18.0%	17.6%
TOD Households				
Northwest	18,774	1,880	9,751	7,143
Central	14,854	2,300	8,233	4,321
Southwest	17,803	1,059	10,749	5,994
Hemet	13,894	731	5,935	7,229
Pass	<u>6,384</u>	<u>317</u>	<u>2,539</u>	<u>3,528</u>
WRCOG Total	71,708	6,287	37,207	28,214
<i>Percent of Total Demand</i>	100.0%	8.8%	51.9%	39.3%

1. Scenario 2 assumes average public transit commute rates reach 2.3 percent for the WRCOG region by 2030; consequently, average auto commute rates for WRCOG decline to 55.2 percent by 2030.

2. TOD Capture rates based on a survey of 1,278 households in WRCOG conducted by True North Research in Feb-March, 2006.

Figure 5-3
WRCOG TOD Demand Study
2000 to 2030 Incremental TOD Capture by Commute Categories



Source: Stanley R. Hoffman Associates, Inc.

5.7 Demand by Key Categories

Presented below are comparisons of Scenarios 1 and 2 of the TOD demand analysis presented by key categories. The following is presented to serve as specific policy pointers. More detailed comparisons of the projected 2000 to 2030 TOD demand growth for Scenario 1 and Scenario 2 can be obtained from Appendix Table C-5 and Appendix Table C-7, respectively.

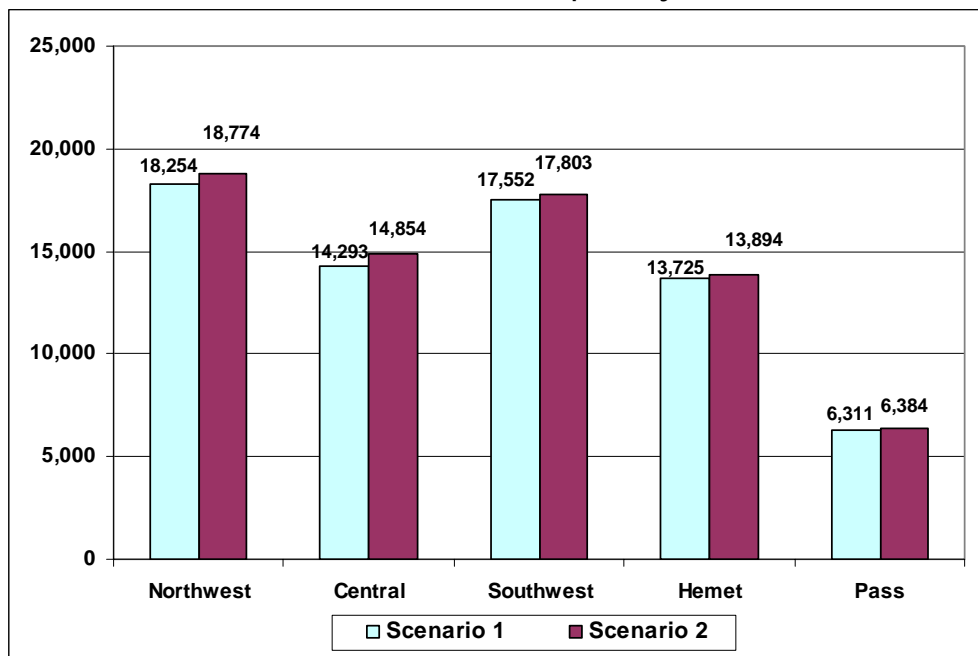
TOD by TUMF Zones

- As shown in Figure 5-4, the Northwest TUMF zone is expected to generate the maximum TOD demand ranging from 18,254 to 18,774 households over the 2000 to 2030 period under Scenario 1 and Scenario 2, respectively.
- The Pass TUMF zone is expected to generate the minimum TOD demand ranging from 6,311 to 6,384 households over the 2000 to 2030 period under Scenario 1 and Scenario 2, respectively.
- Following from above, since a rail line is not planned in the near future in the Pass TUMF zone, these estimated households have expressed an interest in TOD, and they would have to relocate to other areas with TODs.

TOD by Household Type

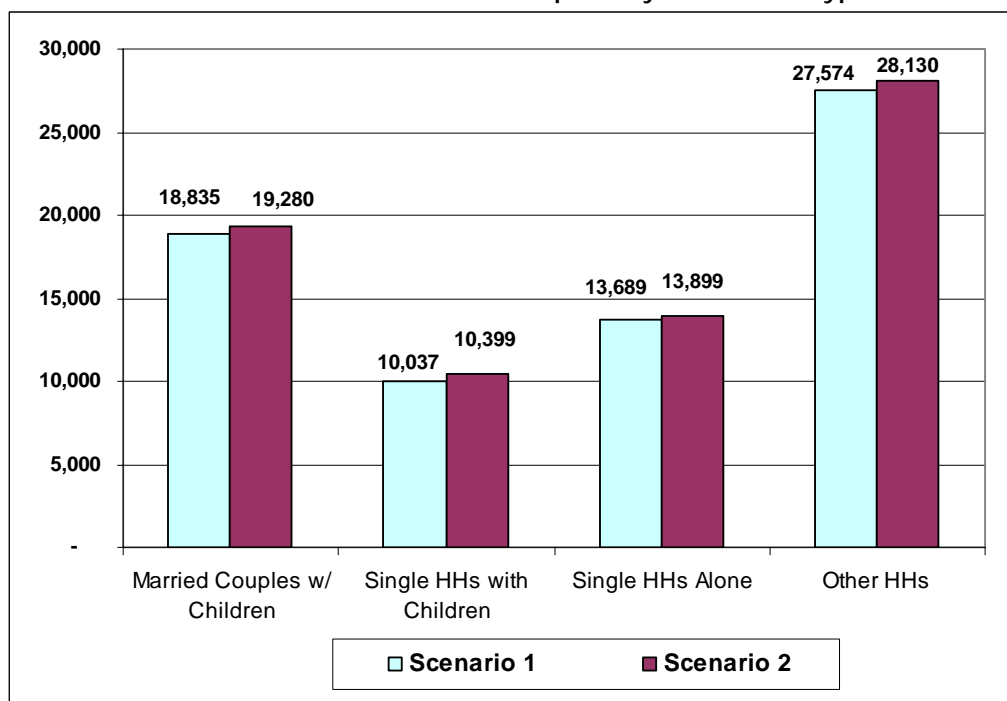
- As shown in Figure 5-5, *Other Households* types generate the maximum TOD demand ranging from 27,574 to 28,130 households. These include non-traditional and non-family households, as explained earlier.
- Among the next largest household categories, the *Married with Children* households generate TOD demand ranging from 18,835 to 19,280 under the two scenarios.

Figure 5-4
 WRCOG TOD Demand Study
 2000 to 2030 Incremental TOD Capture by TUMF Areas



Source: Stanley R. Hoffman Associates, Inc.

Figure 5-5
 WRCOG TOD Demand Study
 2000 to 2030 Incremental TOD Capture by Household Types



Source: Stanley R. Hoffman Associates, Inc.

APPENDIX A

2000 CENSUS 5 PERCENT
PUBLIC USE MICRODATA SAMPLE (PUMS)

SELECTED VARIABLES

2000 Census Five Percent Public Use Microdata Sample Record Layout

Presented below are variables selected from the Census 2000 5 percent Public Use Microdata Sample (PUMS). The 5 percent PUMS survey consists of person records and household records sampled from 5 percent of the population in areas with minimum 400,000 population called Public Use Microdata Areas (PUMAs). Key variables defining household characteristics and travel behavior were selected for the WRCOG TOD study. These included means of transportation to work, travel time to work, household/family types, household income, race/ethnicity, household income, and occupation. The following describes the record layout for the variables of interest from the 2000 Census 5 percent PUMS Technical Documentation.

**Table A-1
Means of Transportation to Work (TRVMNS)**

D TRVMNS	2	191	192
T Means of Transportation to Work			
V		00 . Not in universe (Under 16 years or ESR not 1 and not 4	
V		01 . Car, truck, or van	
V		02 . Bus or trolley bus	
V		03 . Streetcar or trolley car (público in Puerto Rico)	
V		04 . Subway or elevated	
V		05 . Railroad	
V		06 . Ferryboat	
V		07 . Taxicab	
V		08 . Motorcycle	
V		09 . Bicycle	
V		10 . Walked	
V		11 . Worked at home	
V		12 . Other method	

**Table A-2
Carpool Indicator (CARPOOL)**

D CARPOOL	1	194	194
T Vehicle Occupancy			
V		0 . Not in universe (Under 16 years, ESR not 1 or 4, TRVMNS not 1)	
V		1 . Drove alone	
V		2 . 2 people	
V		3 . 3 people	
V		4 . 4 people	
V		5 . 5 or 6 people	
V		6 . 7 or more people	

Table A-3
Household/Family Type (HHT)

D HHT	I	213	213
T Household/Family Type			
V		0 . Not in universe (Vacant or GQ)	
V		1 . Family household: Married-couple	
V		2 . Family household: Male householder, no wife present	
V		3 . Family household: Female householder, no husband present	
V		4 . Nonfamily household: Male householder, living alone	
V		5 . Nonfamily household: Male householder, not living alone	
V		6 . Nonfamily household: Female householder, living alone	
V		7 . Nonfamily household: Female householder, not living alone	

Table A-4
Presence of Own Child under 18 Years (PAOC)

D PAOC	I	225	225
T Presence and Age of Own Children under 18 years			
V		0 . Not in universe (vacant or GQ)	
V		1 . With own children under 6 years only	
V		2 . With own children 6 to 17 years only	
V		3 . With own children under 6 years and 6 to 17 years	
V		4 . No own children under 18 years	

Table A-5
Race/Ethnicity (RACE 1)

D RACE1	1	38	38
T Race Recode 1			
V		1 . White alone	
V		2 . Black or African American alone	
V		3 . American Indian alone	
V		4 . Alaska Native alone	
V		5 . American Indian and Alaska Native tribes specified, and American Indian or Alaska Native, not specified, and no other races	
V		6 . Asian alone	
V		7 . Native Hawaiian and Other Pacific Islander alone	
V		8 . Some other race alone	
V		9 . Two or more major race groups	

Table A-6
Hispanic or Latino Origin (HISPAN)

D HISPAN	2	28	29
T Hispanic or Latino Origin			
V		01 . Not Hispanic or Latino	
V		02 . Mexican	
V		03 . Puerto Rican	
V		04 . Cuban	
V		05 . Dominican	
V		06 . Costa Rican	
V		07 . Guatemalan	
V		08 . Honduran	
V		09 . Nicaraguan	
V		10 . Panamanian	
V		11 . Salvadoran	
V		12 . Other Central American	
V		13 . Argentinean	
V		14 . Bolivian	
V		15 . Chilean	
V		16 . Colombian	
V		17 . Ecuadorian	
V		18 . Not used	
V		19 . Peruvian	
V		20 . Uruguayan	
V		21 . Venezuelan	
V		22 . Other South American	
V		23 . Spaniard	
V		24 . Other Spanish or Latino	

Table A-7
Age (AGE)

D AGE	2	25	26
T Age			
V		0 . Under 1 year	
R		1..89 . 1 to 89 years	
V		90 . Topcode	
V		90+ . State mean of topcoded values	

Table A-8
Household Income (HINC)

D HINC	8	251	258
T Household Total Income in 1999			
V		-0059999 . Loss of \$59,999 or more	
R		-0000001..-0059998 . Loss of \$1 to \$59,998	
V		00000000 . Not in universe (vacant, GQ, no income)	
V		00000001 . \$1 or break even	
R		00000002..99999998 . \$2 to \$99,999,998	
V		99999999 . \$99,999,999 or more	

Table A-9
Industry of Employment (INDCEN)

D INDCEN	3	211	213
T Industry (Census)			
V		000 . Not in universe (Under 16 years or LAST- WRK = 2)	
R		001..997 . Legal census 2000 industry code	

APPENDIX B

TRUE NORTH RESEARCH TOD SURVEY QUESTIONS (Q.12 & Q.13)

Appendix Table B-1
True North Research Survey Instrument
2-year and 10-year Interest in Transit Village

Section 10: Personal Interest in Transit Village								
Q12	In general, how interested would you be in living in a transit village in the next year or two? Would you say you would be very interested, somewhat interested, or not at all interested?							
	1	Very interested						14%
	2	Somewhat interested						28%
	3	Not at all interested						56%
	4	Depends						1%
	98	Don't Know/Not Sure						1%
	99	Refused						0%
Q13	And what about in the future. Would you be very interested, somewhat interested, or not at all interested in living in a transit village 10 years from now?							
	1	Very interested						19%
	2	Somewhat interested						31%
	3	Not at all interested						44%
	4	Depends						3%
	98	Don't Know/Not Sure						3%
	99	Refused						0%
<i>Only ask Q14 if Q12 = 3 AND Q13 = 3</i>								
Q14	Is there a particular reason why you are <u>not</u> interested in living in a transit village?							
Data processing pending	<i>Record Verbatim Response – Record first responses only.</i>							
<i>Only ask Q15 if Q12 = (1,2,4) OR Q13 = (1,2,4)</i>								
Q15	What are the characteristics or benefits of a transit village that <u>most</u> make you want to live in one?							
Data processing pending	<i>Record Verbatim Response – Record first 3 responses only.</i>							
Q16	Next, I'm going to read several aspects of a transit village. For each that I read, please indicate if you <u>personally</u> find this aspect of living in a transit village very appealing, somewhat appealing or not at all appealing. Here is the (first/next) one: _____. Do you find this aspect of living in a transit village very appealing, somewhat appealing, or not at all appealing?							
	<i>Randomize</i>		Very Appealing	Somewhat Appealing	Not At All Appealing	Don't Believe Village will be like that	Don't Know/No Opinion	Refused
A	Easy access to transit		56%	29%	14%	0%	1%	0%
B	Pedestrian friendly neighborhoods		53%	31%	13%	1%	1%	0%

Source: True North Research. Survey of Resident's Views on Land Use, Growth and Development. April 2006; conducted for the Western Riverside Council of Governments (WRCOG)

APPENDIX C

SELECTED DEMAND ESTIMATION MODEL TABLES

**Appendix Table C-1
Growth in Household Types
2000 to 2030 Projections**

WRCOG	1990 - 2000		Ratio	Projected	Normalized
	1990	2000		2030 Distribution	2030 Distribution
NORTHWEST					
Married Couples w/ Children	35.2%	32.1%	0.91	29.2%	29.1%
Single HHs with Children	10.2%	10.9%	1.07	11.7%	11.7%
Singles HHs Alone	17.4%	17.9%	1.03	18.4%	18.3%
Other HHs	37.2%	39.1%	1.05	41.1%	40.9%
Subtotal	100.0%	100.0%		100.4%	100.0%
CENTRAL					
Married Couples w/ Children	37.7%	33.4%	0.88	29.5%	28.9%
Single HHs with Children	9.4%	13.1%	1.39	18.1%	17.8%
Singles HHs Alone	15.8%	16.0%	1.01	16.2%	15.9%
Other HHs	37.1%	37.6%	1.01	38.1%	37.4%
Subtotal	100.0%	100.0%		101.9%	100.0%
SOUTHWEST					
Married Couples w/ Children	36.2%	37.7%	1.04	39.4%	39.2%
Single HHs with Children	7.5%	8.8%	1.17	10.3%	10.3%
Singles HHs Alone	15.1%	14.4%	0.95	13.7%	13.7%
Other HHs	41.2%	39.1%	0.95	37.0%	36.9%
Subtotal	100.0%	100.0%		100.4%	100.0%
HEMET					
Married Couples w/ Children	17.2%	18.4%	1.07	19.7%	19.5%
Single HHs with Children	7.2%	9.2%	1.28	11.8%	11.7%
Singles HHs Alone	29.2%	29.6%	1.01	30.0%	29.7%
Other HHs	46.4%	42.8%	0.92	39.4%	39.1%
Subtotal	100.0%	100.0%		100.9%	100.0%
PASS					
Married Couples w/ Children	22.6%	19.2%	0.85	16.3%	16.2%
Single HHs with Children	10.1%	9.7%	0.96	9.3%	9.2%
Singles HHs Alone	24.6%	25.1%	1.02	25.7%	25.5%
Other HHs	42.7%	46.0%	1.08	49.5%	49.1%
Subtotal	100.0%	100.0%		100.8%	100.0%

Source: Stanley R.Hoffman Associates, Inc.
Census 1990 and 2000, SF-1.

Appendix Table C-2
WRCOG TOD Demand Study
Scenario 1 Distribution of Households by Commute by TUMF Zones: 2030

Public Transit Usage

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	1.1%	1.1%	1.5%	1.7%	2.5%	1.4%
Single Householders with Child/ren	3.1%	1.3%	1.8%	2.0%	3.9%	2.7%
Singles Alone	1.3%	0.5%	0.9%	1.0%	1.2%	1.0%
Other Households	<u>1.1%</u>	<u>1.1%</u>	<u>0.4%</u>	<u>0.5%</u>	<u>3.0%</u>	<u>1.3%</u>
Total	1.4%	1.0%	1.0%	0.9%	2.7%	1.5%

Auto Commuters

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	76.0%	78.6%	74.5%	74.4%	75.6%	76.3%
Single Householders with Child/ren	60.9%	63.7%	60.4%	60.2%	64.4%	62.1%
Singles Alone	39.0%	35.0%	25.4%	25.3%	53.1%	36.9%
Other Households	<u>49.5%</u>	<u>48.6%</u>	<u>35.0%</u>	<u>35.0%</u>	<u>57.4%</u>	<u>47.8%</u>
Total	56.9%	58.3%	42.7%	42.7%	65.3%	56.1%

Non Commuters

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	19.1%	15.2%	20.3%	20.3%	19.2%	18.4%
Single Householders with Child/ren	32.5%	32.4%	33.9%	33.9%	27.4%	31.6%
Singles Alone	55.9%	60.8%	71.7%	71.7%	42.7%	58.9%
Other Households	<u>45.0%</u>	<u>45.0%</u>	<u>61.3%</u>	<u>61.3%</u>	<u>36.9%</u>	<u>46.9%</u>
Total	37.7%	35.9%	53.3%	53.3%	29.0%	38.7%

Source: Stanley R.Hoffman Associates, Inc.

Appendix Table C-3
WRCOG TOD Demand Study
Scenario 2 Distribution of Households by Commute by TUMF Zones: 2030

Public Transit Usage

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	1.8%	1.7%	2.5%	2.7%	3.9%	2.3%
Single Householders with Child/ren	4.9%	2.1%	3.0%	3.2%	6.3%	4.4%
Singles Alone	2.1%	0.8%	1.5%	1.6%	1.9%	1.6%
Other Households	<u>1.8%</u>	<u>1.8%</u>	<u>0.7%</u>	<u>0.8%</u>	<u>4.9%</u>	<u>2.1%</u>
Total	2.2%	1.7%	1.5%	1.5%	4.4%	2.3%

Auto Commuters

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	75.3%	77.9%	73.6%	73.3%	74.2%	75.5%
Single Householders with Child/ren	59.0%	62.9%	59.3%	59.0%	62.1%	60.5%
Singles Alone	38.2%	34.7%	24.9%	24.7%	52.4%	36.3%
Other Households	<u>48.9%</u>	<u>48.0%</u>	<u>34.7%</u>	<u>34.7%</u>	<u>55.5%</u>	<u>47.0%</u>
Total	56.1%	57.7%	42.1%	42.2%	63.7%	55.2%

Non Commuters

Household Type	Northwest	Southwest	Hemet	Pass	Central	WRCOG
Married Couple with Child/ren	19.1%	15.2%	20.3%	20.3%	19.2%	18.4%
Single Householders with Child/ren	32.5%	32.4%	33.9%	33.9%	27.4%	31.6%
Singles Alone	55.9%	60.8%	71.7%	71.7%	42.7%	58.9%
Other Households	<u>45.0%</u>	<u>45.0%</u>	<u>61.3%</u>	<u>61.3%</u>	<u>36.9%</u>	<u>46.9%</u>
Total	37.7%	35.9%	53.3%	53.3%	29.0%	38.7%

Source: Stanley R.Hoffman Associates, Inc.

Appendix Table C-4
WRCOG TOD Demand Study
Scenario 1 Projected 2000 to 2030 Growth by Household and Commute Type

	2000 to 2030 Growth			
	HHs Growth	Transit HHs	Auto Commuter	Non Commuter
NORTHWEST				
Married Couples w/ Children	25,085	512	18,830	4,792
Single HHs with Children	13,286	620	7,872	4,319
Singles HHs Alone	19,649	402	7,519	10,992
Other HHs	<u>45,349</u>	<u>794</u>	<u>22,185</u>	<u>20,411</u>
Subtotal	103,368	2,327	56,406	40,515
CENTRAL				
Married Couples w/ Children	19,534	784	14,473	3,751
Single HHs with Children	17,255	867	10,929	4,726
Singles HHs Alone	12,342	213	6,482	5,273
Other HHs	<u>29,117</u>	<u>1,309</u>	<u>16,275</u>	<u>10,759</u>
Subtotal	78,248	3,172	48,158	24,509
SOUTHWEST				
Married Couples w/ Children	40,656	613	31,778	6,194
Single HHs with Children	11,461	197	7,249	3,717
Singles HHs Alone	13,291	91	4,627	8,076
Other HHs	<u>35,598</u>	<u>593</u>	<u>17,125</u>	<u>16,011</u>
Subtotal	101,007	1,495	60,778	33,999
HEMET				
Married Couples w/ Children	15,811	329	11,691	3,216
Single HHs with Children	10,336	242	6,188	3,507
Singles HHs Alone	23,286	292	5,834	16,703
Other HHs	<u>28,657</u>	<u>184</u>	<u>9,976</u>	<u>17,576</u>
Subtotal	78,090	1,048	33,688	41,002
PASS				
Married Couples w/ Children	5,197	128	3,822	1,057
Single HHs with Children	3,221	90	1,915	1,093
Singles HHs Alone	9,267	123	2,315	6,647
Other HHs	<u>18,282</u>	<u>116</u>	<u>6,366</u>	<u>11,213</u>
Subtotal	35,967	456	14,418	20,010
WRCOG TOTAL				
Married Couples w/ Children	106,283	2,366	80,593	19,010
Single HHs with Children	55,559	2,015	34,152	17,363
Singles HHs Alone	77,835	1,121	26,776	47,692
Other HHs	<u>157,004</u>	<u>2,995</u>	<u>71,926</u>	<u>75,970</u>
Total	396,680	8,497	213,448	160,034

Source: Stanley R.Hoffman Associates Inc.

Appendix Table C-5
WRCOG TOD Demand Study
Scenario 1 Projected 2000 to 2030 Growth by Household and Commute Type

	Auto			
	Transit	Commuter	Non Commuter	
Capture Rates	41.0%	18.0%	17.6%	
TOD CAPTURE				
	TOTAL	Transit HHs	Auto Commuter	Non Commuter
NORTHWEST				
Married Couples w/ Children	4,446	210	3391	845
Single HHs with Children	2,433	254	1418	761
Singles HHs Alone	3,457	165	1354	1938
Other HHs	<u>7,919</u>	<u>325</u>	<u>3995</u>	<u>3598</u>
Subtotal	18,254	953	10,159	7,143
CENTRAL				
Married Couples w/ Children	3,589	321	2607	661
Single HHs with Children	3,156	355	1968	833
Singles HHs Alone	2,184	87	1167	930
Other HHs	<u>5,364</u>	<u>536</u>	<u>2931</u>	<u>1897</u>
Subtotal	14,293	1,299	8,673	4,321
SOUTHWEST				
Married Couples w/ Children	7,066	251	5723	1092
Single HHs with Children	2,042	81	1305	655
Singles HHs Alone	2,295	37	833	1424
Other HHs	<u>6,150</u>	<u>243</u>	<u>3084</u>	<u>2823</u>
Subtotal	17,552	612	10,946	5,994
HEMET				
Married Couples w/ Children	2,807	135	2105	567
Single HHs with Children	1,832	99	1114	618
Singles HHs Alone	4,115	120	1051	2945
Other HHs	<u>4,971</u>	<u>75</u>	<u>1797</u>	<u>3099</u>
Subtotal	13,725	429	6,067	7,229
PASS				
Married Couples w/ Children	927	52	688	186
Single HHs with Children	574	37	345	193
Singles HHs Alone	1,639	50	417	1172
Other HHs	<u>3,171</u>	<u>47</u>	<u>1146</u>	<u>1977</u>
Subtotal	6,311	187	2,597	3,528
WRCOG TOTAL				
Married Couples w/ Children	18,835	969	14,515	3,351
Single HHs with Children	10,037	825	6,151	3,061
Singles HHs Alone	13,689	459	4,822	8,408
Other HHs	<u>27,574</u>	<u>1,226</u>	<u>12,954</u>	<u>13,394</u>
Total	70,136	3,480	38,442	28,214

Source: Stanley R.Hoffman Associates Inc.

Appendix Table C-6
WRCOG TOD Demand Study
Scenario 2 Projected 2000 to 2030 Growth by Household and Commute Type

	2000 to 2030 Growth			
	HHs Growth	Transit HHs	Auto Commuter	Non Commuter
NORTHWEST				
Married Couples w/ Children	25,085	1,047	18,294	4,792
Single HHs with Children	13,286	1,204	7,288	4,319
Singles HHs Alone	19,649	790	7,131	10,992
Other HHs	<u>45,349</u>	<u>1,550</u>	<u>21,428</u>	<u>20,411</u>
Subtotal	103,368	4,591	54,141	40,515
CENTRAL				
Married Couples w/ Children	19,534	1,421	13,836	3,751
Single HHs with Children	17,255	1,491	10,304	4,726
Singles HHs Alone	12,342	378	6,317	5,273
Other HHs	<u>29,117</u>	<u>2,327</u>	<u>15,257</u>	<u>10,759</u>
Subtotal	78,248	5,617	45,713	24,509
SOUTHWEST				
Married Couples w/ Children	40,656	1,058	31,333	6,194
Single HHs with Children	11,461	337	7,109	3,717
Singles HHs Alone	13,291	159	4,559	8,076
Other HHs	<u>35,598</u>	<u>1,032</u>	<u>16,686</u>	<u>16,011</u>
Subtotal	101,007	2,587	59,686	33,999
HEMET				
Married Couples w/ Children	15,811	561	11,459	3,216
Single HHs with Children	10,336	408	6,022	3,507
Singles HHs Alone	23,286	500	5,626	16,703
Other HHs	<u>28,657</u>	<u>317</u>	<u>9,843</u>	<u>17,576</u>
Subtotal	78,090	1,785	32,951	41,002
PASS				
Married Couples w/ Children	5,197	219	3,731	1,057
Single HHs with Children	3,221	152	1,852	1,093
Singles HHs Alone	9,267	208	2,230	6,647
Other HHs	<u>18,282</u>	<u>195</u>	<u>6,286</u>	<u>11,213</u>
Subtotal	35,967	774	14,100	20,010
WRCOG TOTAL				
Married Couples w/ Children	106,283	4,306	78,654	19,010
Single HHs with Children	55,559	3,592	32,575	17,363
Singles HHs Alone	77,835	2,034	25,863	47,692
Other HHs	<u>157,004</u>	<u>5,420</u>	<u>69,501</u>	<u>75,970</u>
Total	396,680	15,353	206,593	160,034

Source: Stanley R.Hoffman Associates Inc.

Appendix Table C-7
WRCOG TOD Demand Study
Scenario 2 Projected 2000 to 2030 Growth by Household and Commute Type

	Auto			
	Transit	Commuter	Commuter	
Capture Rates	41.0%	18.0%	17.6%	
	TOD CAPTURE			
	Transit HHs	Auto Commuter	Non Commuter	
NORTHWEST				
Married Couples w/ Children	4,569	429	3295	845
Single HHs with Children	2,567	493	1313	761
Singles HHs Alone	3,546	323	1284	1938
Other HHs	<u>8,092</u>	<u>635</u>	<u>3859</u>	<u>3598</u>
Subtotal	18,774	1,880	9,751	7,143
CENTRAL				
Married Couples w/ Children	3,735	582	2492	661
Single HHs with Children	3,300	611	1856	833
Singles HHs Alone	2,222	155	1138	930
Other HHs	<u>5,597</u>	<u>953</u>	<u>2748</u>	<u>1897</u>
Subtotal	14,854	2,300	8,233	4,321
SOUTHWEST				
Married Couples w/ Children	7,168	433	5643	1092
Single HHs with Children	2,074	138	1280	655
Singles HHs Alone	2,310	65	821	1424
Other HHs	<u>6,250</u>	<u>423</u>	<u>3005</u>	<u>2823</u>
Subtotal	17,803	1,059	10,749	5,994
HEMET				
Married Couples w/ Children	2,860	230	2064	567
Single HHs with Children	1,870	167	1085	618
Singles HHs Alone	4,163	205	1013	2945
Other HHs	<u>5,001</u>	<u>130</u>	<u>1773</u>	<u>3099</u>
Subtotal	13,894	731	5,935	7,229
PASS				
Married Couples w/ Children	948	90	672	186
Single HHs with Children	588	62	334	193
Singles HHs Alone	1,659	85	402	1172
Other HHs	<u>3,189</u>	<u>80</u>	<u>1132</u>	<u>1977</u>
Subtotal	6,384	317	2,539	3,528
WRCOG TOTAL				
Married Couples w/ Children	19,280	1,763	14,166	3,351
Single HHs with Children	10,399	1,471	5,867	3,061
Singles HHs Alone	13,899	833	4,658	8,408
Other HHs	<u>28,130</u>	<u>2,220</u>	<u>12,517</u>	<u>13,394</u>
Total	71,708	6,287	37,207	28,214

Source: Stanley R.Hoffman Associates Inc.

APPENDIX D

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