



## COMMUTING IN ORANGE COUNTY

### INTRODUCTION

The journeys to and from work constitute two of the more concentrated daily flows on our area freeways and arterials. In terms of time, they are segmented into early morning and late afternoon marathons that seem to be getting longer and longer in duration. Measured by beginning and end point locations, their detailed patterns are less well known, but certainly no less complex. As a decentralized urban realm, the county has numerous job centers that contribute to these movement patterns. Major industrial corridors, office tower clusters, shopping malls, colleges and universities, theme parks, and governmental centers are strung across the landscape. These not only form nodes on the map of daily commuting, they each generate streams of clients, consumers, students, and visitors, whose movement patterns define a spaghetti-like flow that we depersonalize by calling it traffic.

This report examines the daily commuting patterns within Orange County by drawing upon data from Census 2000 and combining that with local job information provided by the Center for Demographic Research report, Orange County Projections 2002. Contrasts between cities and adjacent counties serve to highlight major dimensions of that commuting.

### EBB, FLOW, AND MODES

The 2000 Census counted just under 1,314,000 workers living in Orange County. However, there were 1,514,600 total jobs, meaning that some of those had to be filled by workers commuting in from surrounding counties or by people holding multiple jobs. We also know that many county residents are out-commuters to employment sites in Los Angeles, Riverside, San Bernardino, and even more distant locales. This latter group includes about 223,300 daily out-commuters, while another 374,800 are coming into Orange County job sites from surrounding counties. What may come

as a surprise to a few observers is that the largest single group of commuters consists of individuals whose trips begin and end within the county, but cross from one city to another. Those intra-county commuters number almost 797,900, a figure that exceeds the combined daily total of all cross-county commuters, regardless of the directional flow.

Short distance trips are made by workers who hold jobs in their community of residence. That group was 292,852 strong in the year 2000. They may be further subdivided into those who travel to work (244,020) and those who work at home (48,832). Although we know the specific city and even census tract where the commute begins, the Census Bureau does not ask commuters about specific destination points. This fundamental oversight makes it impossible to calibrate detailed point-to-point flows with Census data.

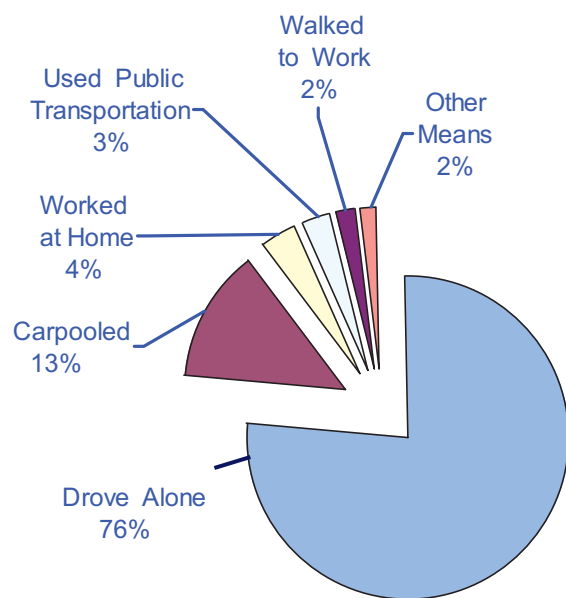
The total daily ebb and flow of workers driving Orange County's streets, freeways, and toll roads is on the order of 1,396,000 commuters, not counting those who both work and live in the same community. The largest single subgroup of commuters is the people who live in the county but drive across city lines to work (57.1%). They are followed by in-commuters (26.8%), and by local out-commuters (16.1%). As substantial as the numbers are, it is non-work trips that actually contribute the largest share of the county's traffic volume (U.S. Dept. of Transportation, Bureau of Transportation Statistics). The combined effect of trips for shopping, dining out, social visits, educational, youth recreational activities, and the essential movement of goods and services accounts for more daily trips than the journeys to and from work. Highly complex origin and destination patterns make these more difficult to address through infrastructure improvement programs and governmental policies.

**Table 1  
Transportation Modes of Commuting  
Orange County, 2000**

Category	Number	Percent
<b>Orange County Resident Workers:</b>		
Total Workers Age 16+	1,313,987	100.0%
<b>Mode of Transportation to Work</b>		
Drove Alone	1,005,744	76.5%
Carpooled	174,373	13.3%
Worked at Home	48,832	3.7%
Used Public Transportation	36,937	2.8%
Bus	33,202	2.5%
Railroad	2,425	0.2%
Other	1,310	0.1%
Walked to Work	26,240	2.0%
Bicycled	10,589	0.8%
Motorcycled	2,645	0.2%
Other Means	8,627	0.7%

Source: Summary File 3, U.S. Census Bureau, 2000.

**Chart 1  
Transportation Modes of Commuting  
Orange County, 2000**



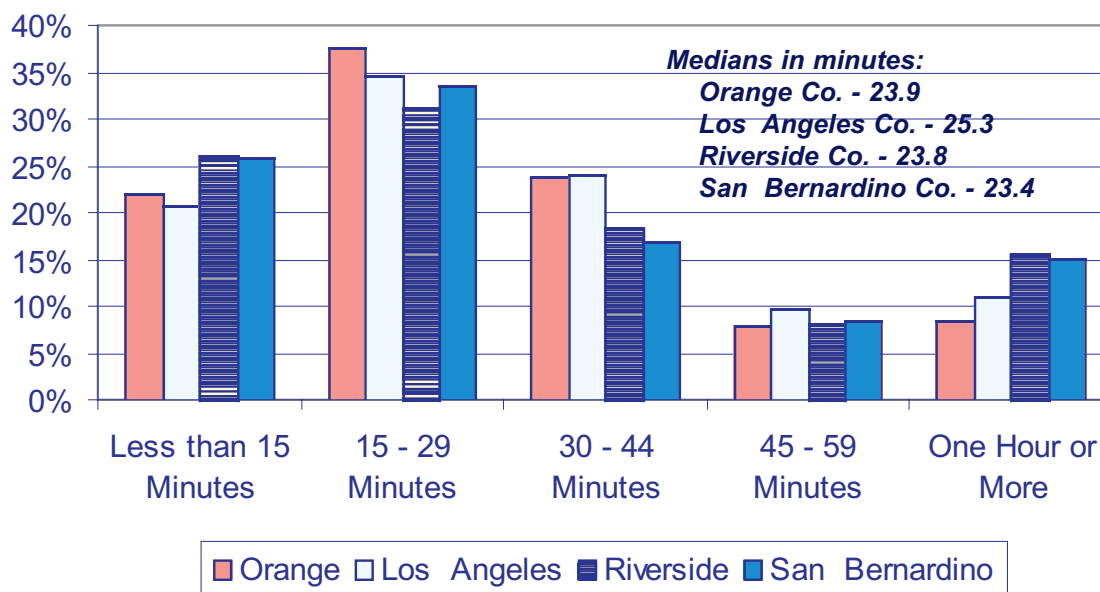
Source: Summary File 3, U.S. Census Bureau, 2000.

Of critical importance to policymakers and planners are the transportation modes that convey workers back and forth to job sites. The modes used in the journey-to-work as reported by Orange Countians are summarized in Table 1 and displayed in Chart 1. Driving alone is still the most highly preferred form of commuting (76.5%), just as it was a decade ago (76.8%). Roughly, one commuter out of every eight (13.3%) now participates in a carpool. Advances in telecommunications have made only a slight imprint on the separation between workplace and residence. The 48,832 individuals who work at home constitute just 3.7% of all workers in Orange County. Their number, though, does exceed that of people who use the public transportation system (2.8%) for their journey-to-work. Interestingly, bikers and walkers combine for about the same number as those commuting by public transit.

Sharp contrasts mark the differences in means of transportation to work from one city to another. In most places, the proportion of workers who drive alone ranges between 75 and 85 percent. The highest cities on that measure are Seal Beach, La Palma, Yorba Linda, Aliso Viejo, and Villa Park --- all among the smaller and or newer municipalities in the county. Carpooling, which is practiced by 13.3% of county commuters overall, is even stronger in Santa Ana (24.7%), Stanton (19.4%), Anaheim (17.5%), and Garden Grove (17.1%), but is practiced by fewer than seven percent of workers who reside in Newport Beach, Laguna Woods, and Villa Park.

Public transit usage, walking, and working at home are infrequent practices in Orange County. The first of these, public transit ridership, corresponds most strongly with the most populous or lower income jurisdictions in Orange County. Commuter rates of bus ridership, rail, or other forms of public transit usage are led by Santa Ana (8.5%), Stanton (5.2%), Costa Mesa (4.7%), and Anaheim (4.6%). In no city does walking to work comprise even five percent of total workers; the two leading cities are Irvine and Laguna Beach, with 4.8% and 4.5% of workers respectively. Working from home offices is most prevalent in the "Lagunas" and in Villa Park and Newport Beach. Laguna Woods, with its heavy

**Chart 2**  
**Daily Commuting Times, Southern California, 2000**



Source: Summary File 3, U.S. Census Bureau, 2000.

proportion of older adults, leads on this indicator, with 10.5% of the workforce engaging in employment activities from their homes. Other ranking localities are Laguna Beach (8.8%), Villa Park (7.9%), Newport Beach (7.3%), and Laguna Niguel (7.2%).

**HOW LONG DOES IT TAKE?**

News articles often portray commuting as an arduous, long-distance trek. We read about the Dana Point resident who works for an aerospace conglomerate in El Segundo or the Garden Grove police officer commuting in from Fontana or Moreno Valley. As real as such cases may be, they represent the extremes rather than the norm. Typical commuting realities are far more likely to be short distances and short durations than two-hour journeys in the pre-dawn darkness.

The Census asks workers the number of minutes that "it usually take(s) this person to get from home to work." Hence, the evidence reveals the one-way duration of the trip, not how great of a distance was traveled. The range of daily one-way commuting times for Orange County and three adjacent counties for the year 2000 is displayed in Chart 2. Orange County workers endured a median travel time of almost 24 minutes, meaning that half of all commuters had longer trips and half had shorter commute times. Readers will note that the medians are virtually identical across all four counties, with Los Angeles coming out slightly

higher (25.3 minutes) but only marginally so. The closely comparable median values for Riverside and San Bernardino commuters may seem unexpected but can be explained by relatively high proportions of workers whose jobs are in the same city as where they live. (About 26% of Inland Empire adults take fewer than 15 minutes for the drive to work.)

Among the four counties, Orange County's commuters have the highest percentage driving between 15 and 30 minutes (37.6%). Los Angeles County is the leader for persons traveling 30-45 minutes to work (24.1%). As one might have expected, those commuters on the road for more than an hour each way tend to be from Riverside or San Bernardino counties. Nearly one driver in six from the Inland Empire has a daily commute that is more than an hour long, in contrast to one commuter out of twelve in Orange County.

By way of reference, the average commute duration for Orange County workers in 1990 was 25.5 minutes. Clearly, the completion of freeway widening, interchange upgrades, and arterial street improvements since the passage of sales tax Measure M (the November 1990 referendum) have contributed to the enhancement of traffic flows or at least forestall congestion delays along major route ways within the county.

## JOB CLUSTERS AND THEIR DISTRIBUTION

One hallmark of a suburban economy is the prevalence of numerous large employment clusters. Hospitals are often ringed by medical offices; shopping mall perimeters are delineated by banks, restaurants, and "big box" retailers; and office tower complexes frequently include large hotels and other service businesses. In each case, the combined employment of the cluster far exceeds that of one or two dominant firms. These concentrations give selected cities, and specific areas within those cities, a high economic visibility. Specifically, five adjacent cities form the economic spine of Orange County, accounting for nearly half of all jobs. In order from north to south, these are Anaheim (179,000 jobs), Orange (107,000), Santa Ana (168,000), Irvine (197,000), and Costa Mesa (89,000). If one were to add Fullerton and Newport Beach to that group, the corridor cities' share of employment would increase to 58.4% of the county total.

Observers can take a "telephoto view" of the county's employment centers by zooming down to the census tract level. (Orange County is divided by the Census Bureau into 577 such tracts for small-area statistical purposes. The developed census tracts range in size from one-third of a square mile to slightly more than one square mile.) Map 1 illustrates the pattern of job-intensive census tracts. Five clusters each contain more than 25,000 jobs. The two most intensive tracts, adjacent to the 55 freeway, encompass the Irvine Business Complex, with over 153,100 workers in office towers, hotels, industries and service firms. Appearing on the map as a finger-like extension of the IBC is the 29,900 job-strong South Coast Metro corridor (South Coast Plaza Town Center, South Coast Plaza, and northern Costa Mesa Business Park). Two additional job centers may be found in northwest Orange, as well as the East Anaheim Industrial-Office corridor situated just north of the 91 freeway.

Another 20 census tracts may be classified as subsidiary employment clusters, as they provide between 12,000 to 25,000 jobs. These are widely distributed across central and northern sections of the county, with a tendency to border the five larger clusters. A transportation network orientation for major job areas is clearly evident along the 91, 57, 55 and 405 freeways. In the aggregate, the two-dozen largest clusters in the county account for roughly 594,000 total jobs, or some 40% of Orange County's total employment.

One alternative perspective on job patterns is to consider the arrangement of employment densities. Map

2 displays the patterns as measured by jobs per square mile. Visually the distribution is quite similar to that of Map 1, but this time the pattern appears to be even less concentrated. Many census tracts contain job densities in excess of 5,000 or 10,000 workers per square mile. The most prominent ones differ somewhat from the leaders based on total jobs. In terms of job density, the most intensive area of the county, not unexpectedly, is the governmental center in Santa Ana (24,816 per square mile). That is followed by the census tract with the hospitals of southwest Orange and Santa Ana's MainPlace mall. Immediately to the west of that location is the high job density area encompassing The City, the festival retail center The Block, UCI Medical Center, and the county's justice center complex. Also prominent is the Newport Center / Fashion Island cluster where the job density approaches 16,900 workers per square mile.

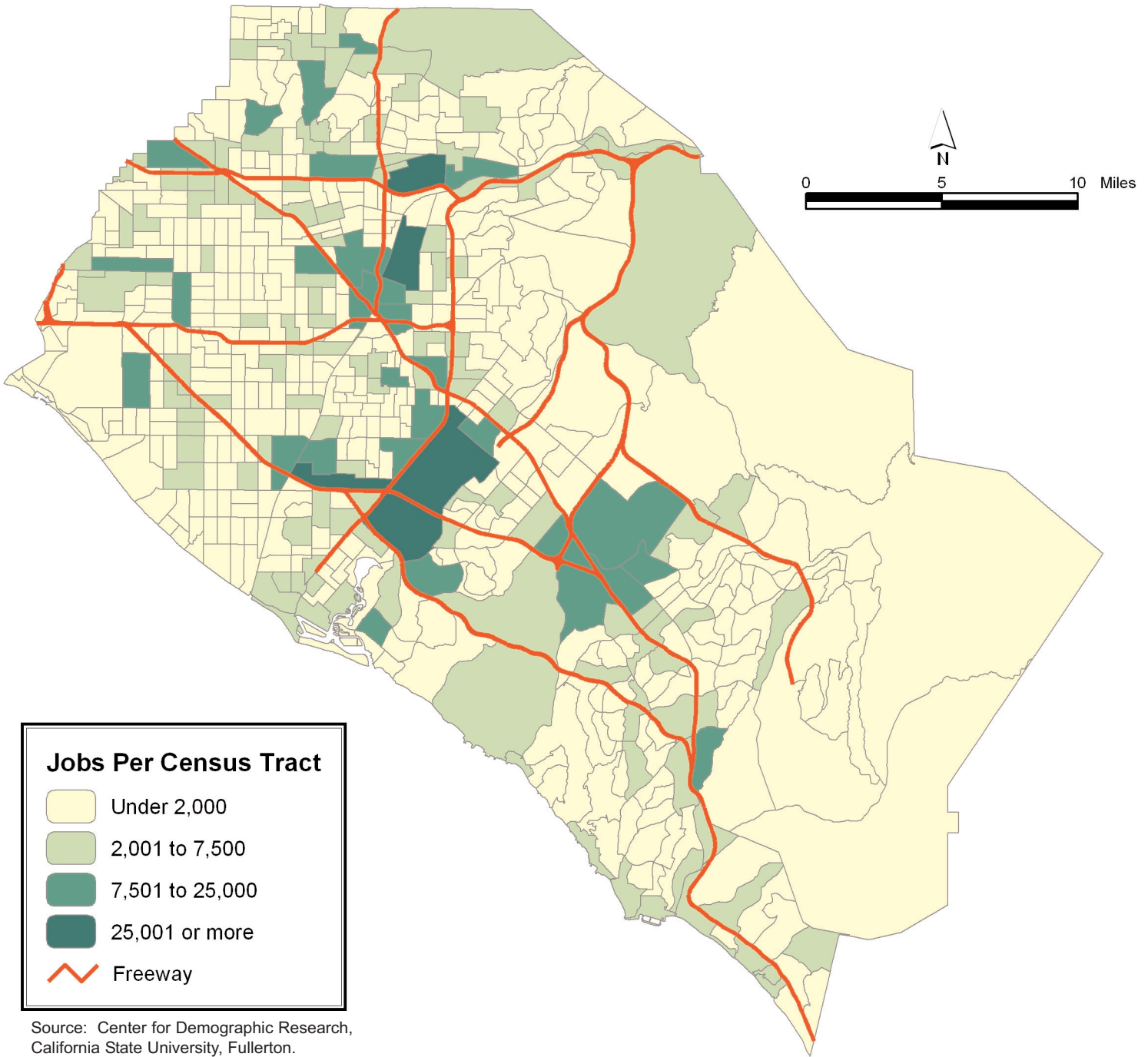
## JOB / HOUSING RELATIONS

Numerous writers have argued that much of a so-called "commuting problem" can be traced back to local government land use policies that either encourage or discourage particular types of housing and commercial development. Others noted that a community's stage of historical development also plays a role, as commercial and industrial jobs tend to follow after an initial emphasis on housing. Thus, the more mature a city, the less likely that it would be "housing rich and job poor," an initial situation forcing workers to commute to other jurisdictions for employment.

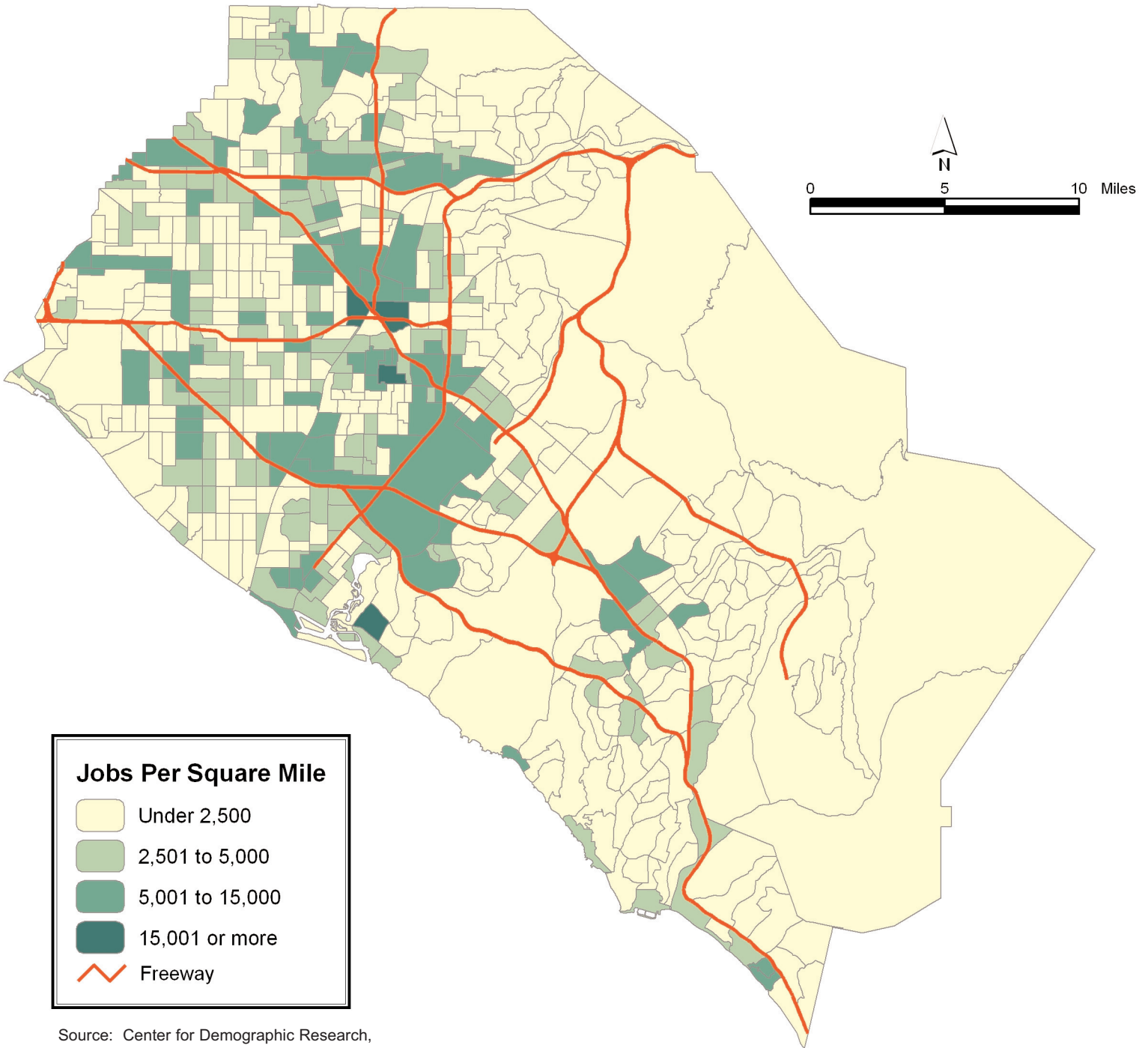
Over the course of a decade, beginning in the mid-1980s, several analyses were conducted on the question of jobs/housing balance, at both a regional and municipal scale. The most widely used indicator in that research was to simply calculate some ratio of total jobs to total housing units or to total households (occupied housing units), then draw comparisons from place to place. That blunt measure has fallen out of favor, however, because it fails to consider multiple wage earners in the same household. Recently, two alternatives have become more popular in the jobs / housing relations studies. These are the percent of adult workers who are employed in the jurisdiction in which they live (conditioned, of course, by the number and types of locally available jobs) and secondly, the percent of jobs within a jurisdiction held by local resident workers (conditioned by the number and match of occupational/skill levels between the workforce and the jobs). Both of these two latter indicators have been calculated using Census 2000 data and local employment



# Map 1 Number of Jobs by Census Tract Orange County, 2000



## Map 2 Jobs Density by Census Tract Orange County, 2000



Source: Center for Demographic Research,  
California State University, Fullerton.

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**Table 2**  
**Jobs to Housing Relations**  
**Orange County, 2000**

<b>Job Rich Places</b>	<b>Ratio of Jobs-to-Employed Residents</b>
Los Alamitos	2.95
Irvine	2.70
Brea	2.12
Newport Beach	1.90
Orange	1.78
Laguna Hills	1.66
Costa Mesa	1.60
Laguna Woods	1.42
Santa Ana	1.35
Anaheim	1.28
<b>Housing Rich Places</b>	
Rancho Santa Margarita	0.31
Aliso Viejo	0.45
Yorba Linda	0.55
Villa Park	0.62
Laguna Niguel	0.64
Stanton	0.68
Dana Point	0.68
Westminster	0.69
La Habra	0.71
Mission Viejo	0.73

Source: Commuter worker data from Summary File 3, U.S. Census Bureau, 2000 and Job data from the Center for Demographic Research, California State University, Fullerton.

estimates discussed previously in this report. The data are also transformed into a third indicator, the city-by-city ratio of jobs-to-employed residents.

A general index of jobs within a city's boundaries relative to the number of that city's residents who are job holders, provides one yardstick of "job rich" as well as "housing rich" places. The top ten cities in each category are named in Table 2. As anticipated, the job rich cities include those noted earlier as the locations of major office-retail-industrial districts or are those smaller cities with one or two substantial employers. Los Alamitos, Irvine, Brea, Newport Beach, and Orange head the list of the county's job-rich cities. Their polar opposites are more characteristically the younger south county places or a few north county cities that some observers have called "classic bedroom communities." This group of housing-rich places is led by Rancho Santa Margarita, Aliso Viejo, Yorba Linda, Villa Park, and Laguna Niguel.

When interest turns to commuter flows, though, the other two indicators "percent working in their place of residence" and "percent of jobs held by local workers" are

**Table 3**  
**Orange County Cities by Percent of Population**  
**Working in City of Residence, 2000**

<b>Rank</b>	<b>City or Place</b>	<b>Percent of People Working in City of Residence</b>
1	Irvine	38.9%
2	Newport Beach	31.5%
3	San Clemente	30.0%
4	Anaheim	29.4%
5	Santa Ana	28.7%
6	Laguna Beach	28.2%
7	Costa Mesa	27.9%
8	Orange	27.5%
9	Laguna Woods	26.6%
10	Huntington Beach	24.1%
11	Brea	23.0%
12	Fullerton	23.0%
13	San Juan Capistrano	22.8%
14	Mission Viejo	21.8%
15	Dana Point	18.7%
16	Laguna Niguel	18.0%
17	Tustin	17.4%
18	Laguna Hills	16.9%
19	Fountain Valley	16.8%
20	La Habra	16.3%
21	Yorba Linda	16.1%
22	Los Alamitos	16.0%
23	Garden Grove	15.8%
24	Lake Forest	15.6%
25	Seal Beach	15.4%
26	Westminster	14.4%
27	Rancho Santa Margarita	14.3%
28	Buena Park	13.8%
29	Cypress	12.5%
30	Villa Park	12.0%
31	Aliso Viejo	11.9%
32	Placentia	11.3%
33	La Palma	9.3%
34	Stanton	8.8%

Source: Commuter worker data from Summary File 3, U.S. Census Bureau, 2000 and Job data from the Center for Demographic Research, California State University, Fullerton.

more informative. Values for each of the 34 Orange County cities on the first measure are listed in Table 3. The first index might also be termed the degree of worker self-containment in a place. Although 83.0% of the county's working adults do hold jobs that are in Orange County, the values for individual cities are much lower. Irvine, Newport Beach, and San Clemente are the only jurisdictions where one finds at least 30.0% of workers with local jobs. The coastal

communities and inland places that have a large total number of employment opportunities tend to rank higher on self-containment than do other cities. On average, just one worker out of every four holds a job in the same city in which she or he resides. This is perhaps the most valuable of all the conventionally used jobs-housing measures because it treats each locality as a worker (and thus, commuter) source center.

Finally, the second set of rankings in Table 4 reveals the degree to which local jobs are held by local workers. More than the previous measure, this hinges on the sizes of both the worker supply and job supply. The range of values is more widespread and the average of all Orange County places is much lower --- with 19.3% of each city's jobs held by a resident worker. Smaller cities and locations with relatively few jobs tend to score the highest on this indicator of jobs-housing relations. The newest communities and self-contained beach cities top the listing. Rancho Santa Margarita, San Clemente, Huntington Beach, and Laguna Beach stand out with high values. Selected cities on the county's western and northern border tend to be relatively low in the percent of jobs held by local workers, regardless of whether these contain major employment opportunities or not. Los Alamitos, La Palma, Brea, Cypress, and Buena Park are notable standouts.

**CONCLUSION**

Commuting patterns are a complex web of local and longer-distance flows that reveal behavioral preferences and the magnetism of multiple employment centers. Daily modes of travel, the time spent on the commute, and employment size of key destination points all define how and where Orange Countians travel to work. Information from the 2000 Census must be coupled with data about the changing number and composition of job opportunities and policy responses at the local level in order to gain a more complete picture of this important travel behavior. The profile offered here marks an initial step in that direction.

**Table 4  
Orange County Cities by Percent of Jobs Held by City Residents, 2000**

Rank	City or Place	Percent of City Jobs Held by City Residents
1	Rancho Santa Margarita	46.3%
2	San Clemente	32.5%
3	Huntington Beach	31.5%
4	Laguna Beach	29.8%
5	Mission Viejo	29.8%
6	Yorba Linda	29.6%
7	Laguna Niguel	28.3%
8	Dana Point	27.5%
9	Aliso Viejo	26.4%
10	Anaheim	22.9%
11	La Habra	22.7%
12	San Juan Capistrano	21.6%
13	Santa Ana	21.3%
14	Westminster	20.9%
15	Garden Grove	20.3%
16	Villa Park	19.3%
17	Lake Forest	19.0%
18	Fullerton	18.9%
19	Laguna Woods	18.7%
20	Costa Mesa	17.4%
21	Seal Beach	17.3%
22	Newport Beach	16.6%
23	Orange	15.5%
24	Placentia	15.0%
25	Tustin	14.9%
26	Fountain Valley	14.7%
27	Irvine	14.4%
28	Buena Park	13.0%
29	Stanton	13.0%
30	Cypress	11.6%
31	Brea	10.9%
32	La Palma	10.3%
33	Laguna Hills	10.1%
34	Los Alamitos	5.4%

Source: Commuter worker data from Summary File 3, U.S. Census Bureau, 2000 and Job data from the Center for Demographic Research, California State University, Fullerton.

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