



Commuting à la mode

This is the last of a series of Policy Briefs prepared as background for the March 14 election at which voters will be asked to approve the Phase 1 Proposal of the Central Puget Sound Regional Transit Authority. This brief reviews national trends in commuting as revealed in the 1980 and 1990 Censuses.

National trends in commuting

Between 1980 and 1990 the resident population of the United States increased by nearly 10 percent, from 227 million to 249 million. Over the period, the workforce grew by 19 percent, to more than 115 million. In both 1980 and 1990 the census recorded the transportation modes used by workers when commuting to their jobs. Table 1 summarizes the national pattern of commuting.

Table 1
Increasing Numbers of Americans
Drive Alone to Work
(1980 and 1990)

	1980		1990	
	Number	Market Share	Number	Market Share
Total Population	228,542,199		248,709,873	
Workers 16 yrs. +	96,617,296		115,070,274	
Drove alone	62,193,449	64.4%	84,215,298	73.2%
Carpooled	19,065,047	19.7%	15,377,634	13.4%
Public transportation	6,174,861	6.4%	6,069,589	5.3%
Bus or streetcar*	3,924,787	4.1%	3,560,627	3.1%
Subway or elevated	1,528,852	1.6%	1,755,476	1.5%
Railroad	554,089	0.6%	574,052	0.5%
Taxicab	167,133	0.2%	179,434	0.2%
Motorcycle	419,007	0.4%	237,404	0.2%
Bicycle	468,348	0.5%	468,856	0.4%
Walked	5,413,248	5.6%	4,488,886	3.9%
Other means	703,273	0.7%	808,582	0.7%
Worked at home	2,179,863	2.3%	3,406,025	3.0%

*"Bus or trolley bus," "streetcar or trolley car," and "ferry boat" were separate categories in the 1990 Census. In the 1980 Census, these modes were aggregated to a single category, "bus or streetcar."

Sources: U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States 1994*. U.S. Department of Transportation, Federal Highway Administration Office of Highway Information Management. *New Perspectives in Commuting*, 1992.

Commuting by single occupant vehicle (SOV) increased dramatically over the decade. The 22 million increase in the number of workers driving alone exceeded the 18 million increase in the workforce. The number of workers who carpooled, rode public transit, motorcycled, bicycled, and walked all declined absolutely. The number who worked at home rose.

More illuminating than the raw numbers of workers that choose each mode are the respective market shares. Between 1980 and 1990, the market share of single occupant vehicles increased from 64 to 73 percent. At the same time the share of carpools fell from 20 to 13 percent, and the share of public transportation fell from 6 to 5 percent.

Thus, for this decade, the primary story in national commuting was the large shift from carpooling to driving alone.

Trends in the Seattle area

Table 2, found on page 2, presents comparable data on commuting for metropolitan Seattle. Between 1980 and 1990 the area's population grew by 25 percent to 1.7 million, while

the area's workforce grew by 35 percent to 670,000.

Over the decade, the number of workers driving alone increased by 236,000. The number of carpoolers decreased by 16,000. The number who commuted by public transit increased by 3,000. The number who bicycled to work increased by 1,000. The number who worked at home increased by 17,000.

Table 2

Carpooling Falls More Rapidly than Transit Use in Seattle Area

	1980		1990	
	Number	Market Share	Number	Market Share
Total Population	1,393,872		1,743,796	
Workers 16 yrs. +	686,425		927,316	
Drove alone	433,558	63.2%	669,766	72.2%
Carpooled	122,579	17.9%	106,172	11.4%
Public transportation	72,604	10.6%	75,041	8.1%
Bus or streetcar*	71,992	10.5%	74,250	8.0%
Subway or elevated	120	0.0%	151	0.0%
Railroad	14	0.0%	40	0.0%
Taxicab	478	0.1%	600	0.1%
Motorcycle	5,374	0.8%	3,041	0.3%
Bicycle	4,404	0.6%	5,698	0.6%
Walked	30,121	4.4%	31,963	3.4%
Other means	4,570	0.7%	5,300	0.6%
Worked at home	13,215	1.9%	30,335	3.3%

*"Bus or trolley bus," "streetcar or trolley car," and "ferry boat" were separate categories in the 1990 Census. In the 1980 Census, these modes were aggregated to a single category, "bus or streetcar."

Data for "Urbanized Area," as defined by the Census Bureau.

Sources: U.S. Department of Commerce, Bureau of the Census. 1980 Census of Population, 1990 Census of Population and Housing.

This pattern mirrors the national experience. Between 1980 and 1990 the fraction of Seattle area workers driving alone rose from 63 percent to 72 percent. The share carpooling dropped from 18 percent to 11 percent. The share riding public transit fell from 11 percent to 8 percent.

Both in 1980 and in 1990, local SOV ridership differs little from the national share. In both years, Seattle's market share for public transit is higher than the nation's, while Seattle's market share for carpooling is lower.

Comparison with other cities in the west and southwest

Table 3, which appears on the final page of this brief, presents data on commuting from the 1980 and 1990 censuses for twelve major urban areas of the western and southwestern United States: Dallas, Denver, Houston, Los Angeles, Phoenix, Portland, Sacramento, Salt Lake City, San Antonio, San Diego, San Francisco, and San Jose.

These twelve urban areas together with Seattle had a population of 28 million in 1980. By 1990 this population had grown 22 percent to 34 million. Over the decade the

share of workers driving alone increased from 68 percent to 73 percent. The carpooling share fell from 18 percent to 14 percent. Public transit's market share fell from 7 percent to 6 percent.

Commuter mode market shares for the thirteen urban areas are summarized on Charts 1, 2 and 3.

Chart 1 (page 3) ranks the cities by the 1990 SOV market share and shows the shares for both 1980 and 1990. In all thirteen cases, the SOV market share increased from 1980 to 1990. Seattle had the second lowest SOV share in 1980 and the fourth lowest in 1990. The area's increase between 1980 and 1990 was one of the largest, however.

Chart 2 (page 4) ranks the cities by the 1990 carpooling market share and shows the shares for both 1980 and 1990. These shares decreased in all thirteen areas during the decade. In 1980, Seattle's carpool share was greater than those of five other areas. In 1990, Seattle's share was the lowest of the thirteen. Looking across urban areas, there is a positive correlation between market shares of SOV and of carpooling. The factors that tend to increase the SOV share, such as a good network of roads and a poor public transit system, tend to increase carpooling's share also.

Chart 3 (page 4) ranks the cities by the share of public transit in 1990. Between 1980 and 1990 transit's market share increased in two of the areas: Houston, which went from 3.5 to 4.5 percent, and Phoenix, which went from 2.0 to 2.2 percent.

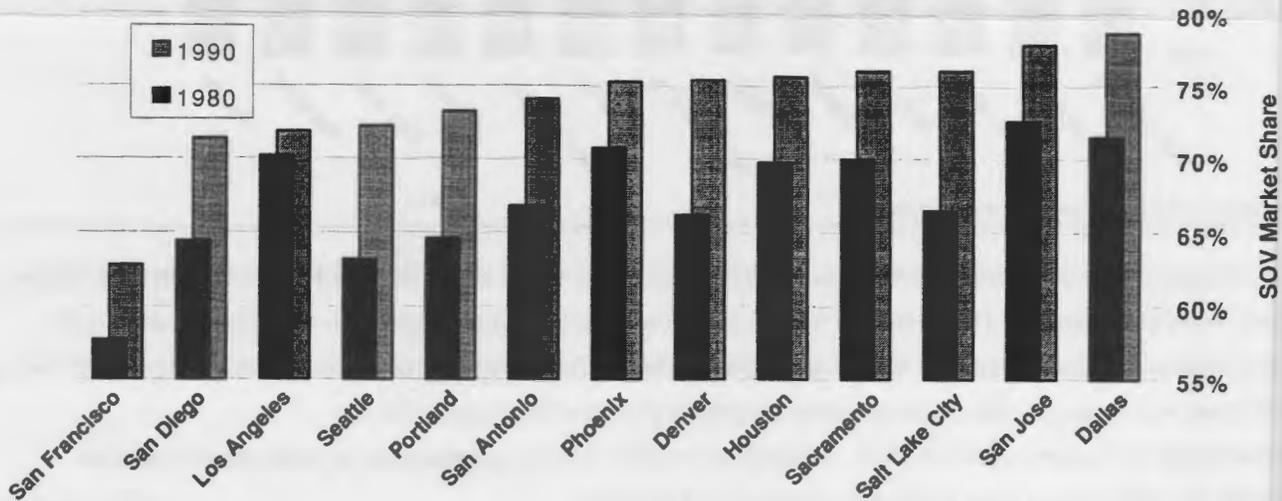


Neither of these cities invested in rail during the 1980s. In fact, in the early 1990s Houston scrapped plans for a light rail system, deciding instead to aggressively expand its bus network. The market share of public transit fell in the other eleven urban areas.

Seattle had the second highest market share for public transit in 1980, and, in spite of the 2.5 percent fall in share it experienced, Seattle retained second place in 1990. In fact, Seattle's margin over third place Portland expanded over the decade.

Looking across cities, public transit's share has a strong negative correlation with SOV and a moderate negative correlation with carpooling.

Chart 1
SOV Gains Market Share
(Cities ranked by 1990 SOV Share)



Sources: 1980 Census of Population. 1990 Census of Population and Housing.

Rail cities

Rail is an important piece of the transit network in six of these twelve cities. Portland, Sacramento, San Diego, and San Jose all opened new light rail systems during the 1980s. The San Francisco Municipal Railway finished upgrading its trolley system to modern light rail standards in 1981. Also, in San Francisco, BART underwent a major capacity expansion program during the 1980s. Los Angeles's light rail system opened in 1991.

Service began on Portland's light rail system in 1986. Even with the addition of light rail, public transit's market share dropped from 9.7 to 6.5 percent. This was the largest drop recorded among the thirteen cities.

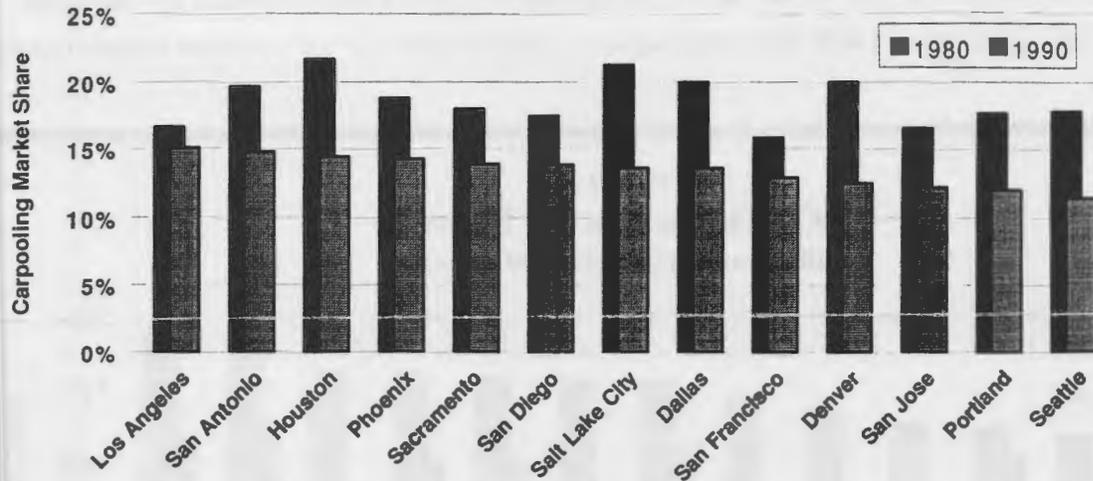
Light rail service began in Sacramento in 1987. Over the decade, public transit's market share dropped from 4.1 to 2.8 percent.

Light rail service began in San Diego in 1981. Although the decade saw an absolute increase in commuting by transit, its market share fell slightly, from 3.5 to 3.4 percent.

For San Francisco, the market share of public transit fell from 16.6 to 14.0 percent. This represented the second largest decrease among the thirteen cities, larger than Seattle's decrease but less than Portland's. What is intriguing about San Francisco is the market share of carpooling. Between 1980 and 1990, San Francisco's drive alone market share increased by much less than did Seattle's drive alone share because the share of carpoolers fell by less there than it did here. Given the general negative



Chart 2
Carpooling Loses Market Share
(Cities ranked by 1990 Share)



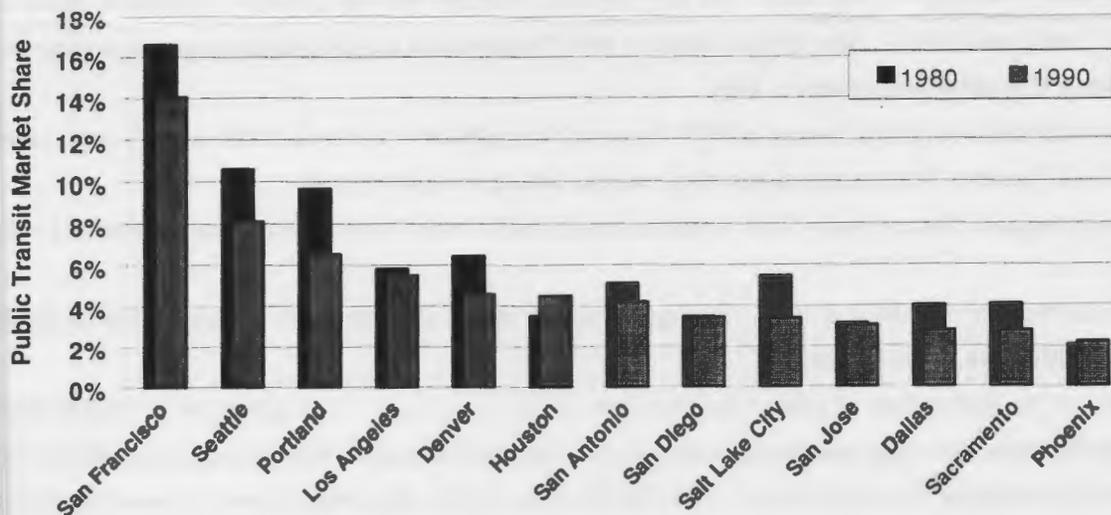
Sources: 1980 Census of Population, 1990 Census of Population and Housing.

correlation between the market shares of public transit and carpooling, one would expect that San Francisco's very high relative transit share would be accompanied by a very low relative use of carpools, but this is not the case. Possibly, this reflects the effects of the tolls on the Golden Gate and Bay Bridges. Both bridges exempt carpooling commuters from paying tolls, providing a financial incentive to carpool. This is an example of congestion pricing to discourage SOV use.

San Jose's light rail system opened in 1987. Although the number of workers commuting by public transit increased between 1980 and 1990, market share fell slightly, from 3.1 to 3.0 percent.

— Kriss Sjoblom

Chart 3
Transit Loses Market Share in Key Western Cities
(Cities ranked by Public Transit Market Share in 1990)



Sources: 1980 Census of Population, 1990 Census of Population and Housing.



Table 3

Commuting Patterns in Major Southwestern and Western Cities

	DALLAS				DENVER				HOUSTON			
	1980		1990		1980		1990		1980		1990	
	Number	Market Share										
Total Population	2,451,342		3,198,199		1,352,188		1,517,803		2,412,189		2,902,449	
Workers 16 yrs. +	1,228,753		1,642,966		676,739		789,327		1,200,006		1,401,906	
Drove alone	878,711	71.5%	1,292,213	78.7%	447,783	66.2%	595,506	75.4%	836,716	69.7%	1,060,537	75.6%
Carpooled	245,479	20.0%	222,830	13.6%	135,240	20.0%	98,630	12.5%	261,039	21.8%	201,652	14.4%
Public transportation	49,337	4.0%	45,648	2.8%	43,396	6.4%	36,173	4.6%	42,217	3.5%	62,957	4.5%
Walked	25,243	2.1%	29,775	1.8%	28,369	4.2%	24,051	3.0%	32,244	2.7%	31,960	2.3%
Worked at home	15,199	1.2%	36,036	2.2%	12,169	1.8%	25,936	3.3%	12,690	1.1%	27,944	2.0%
All other	14,784	1.2%	16,464	1.0%	9,782	1.4%	9,031	1.1%	15,100	1.3%	16,856	1.2%

	LOS ANGELES				PHOENIX				PORTLAND			
	1980		1990		1980		1990		1980		1990	
	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share
Total Population	9,479,643		11,402,955		1,409,043		2,006,568		1,026,109		1,171,834	
Workers 16 yrs. +	4,366,309		5,457,037		620,353		949,681		479,562		582,478	
Drove alone	3,064,463	70.2%	3,920,159	71.8%	438,725	70.7%	715,181	75.3%	309,759	64.6%	426,681	73.3%
Carpooled	726,126	16.6%	821,277	15.0%	116,706	18.8%	134,956	14.2%	84,865	17.7%	70,202	12.1%
Public transportation	254,303	5.8%	299,957	5.5%	12,606	2.0%	20,859	2.2%	46,415	9.7%	38,006	6.5%
Walked	149,152	3.4%	162,488	3.0%	18,438	3.0%	24,380	2.6%	20,466	4.3%	19,308	3.3%
Worked at home	63,390	1.5%	147,023	2.7%	9,422	1.5%	26,989	2.8%	8,977	1.9%	19,309	3.3%
All other	108,875	2.5%	106,133	1.9%	24,456	3.9%	27,316	2.9%	9,080	1.9%	8,972	1.5%

	SACRAMENTO				SALT LAKE CITY				SAN ANTONIO			
	1980		1990		1980		1990		1980		1990	
	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share
Total Population	796,555		1,097,313		674,249		789,720		944,621		1,128,966	
Workers 16 yrs. +	344,952		507,788		288,634		357,260		395,748		492,678	
Drove alone	241,377	70.0%	386,334	76.1%	191,857	66.5%	271,850	76.1%	264,180	66.8%	364,910	74.1%
Carpooled	62,147	18.0%	70,454	13.9%	61,459	21.3%	48,465	13.6%	77,744	19.6%	72,613	14.7%
Public transportation	14,003	4.1%	14,035	2.8%	15,780	5.5%	12,126	3.4%	20,271	5.1%	20,645	4.2%
Walked	10,224	3.0%	12,174	2.4%	9,973	3.5%	8,713	2.4%	21,653	5.5%	18,801	3.8%
Worked at home	5,788	1.7%	13,948	2.7%	5,142	1.8%	11,417	3.2%	4,821	1.2%	10,193	2.1%
All other	11,413	3.3%	10,843	2.1%	4,423	1.5%	4,689	1.3%	7,079	1.8%	5,516	1.1%

	SAN DIEGO				SAN FRANCISCO				SAN JOSE			
	1980		1990		1980		1990		1980		1990	
	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share	Number	Market Share
Total Population	1,704,539		2,348,106		3,190,822		3,629,864		1,244,033		1,434,803	
Workers 16 yrs. +	782,264		1,160,790		1,536,879		1,859,904		627,196		766,234	
Drove alone	503,998	64.4%	828,430	71.4%	886,763	57.7%	1,167,056	62.7%	455,207	72.6%	596,481	77.8%
Carpooled	136,488	17.4%	160,249	13.8%	242,572	15.8%	239,546	12.9%	103,456	16.5%	93,606	12.2%
Public transportation	27,186	3.5%	39,985	3.4%	255,167	16.6%	261,010	14.0%	19,636	3.1%	23,263	3.0%
Walked	71,122	9.1%	46,478	4.0%	79,188	5.2%	82,264	4.4%	15,750	2.5%	15,640	2.0%
Worked at home	14,229	1.8%	56,038	4.8%	29,219	1.9%	67,937	3.7%	9,610	1.5%	18,605	2.4%
All other	29,241	3.7%	29,610	2.6%	43,970	2.9%	42,091	2.3%	23,527	3.8%	18,639	2.4%

Data are for Urbanized Areas. Sources: 1980 Census of Population, 1990 Census of Population and Housing.