

# METROPOLITAN TRANSPORTATION COMMISSION

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# Memorandum

TO: File DATE: May 9, 2003

FR: Chuck Purvis W.I.: 1122

RE: Census 2000: Characteristics of Workers by Means of Transportation to Work (PUMS 1-Percent)

This memo is intended as a short, introductory note on some of the first tables developed from the Census 2000 1-percent Public Use Microdata Sample (PUMS). The 1-percent PUMS data for California was released May 7, 2003.

The California 1-percent PUMS includes data on 130,341 sample households/housing units and 338,725 sample persons. The Bay Area subset of the California file includes information on 26,512 sample households/housings units and 66,555 sample persons. All data from the 1-percent PUMS is derived from long-form (sample) responses to Census 2000. To protect the confidentiality of respondents, data is tabulated at the "super-PUMA" of residence (areas of 400,000+ population). There are 12 super-PUMAs in the Bay Area. The four north bay counties comprise two super-PUMAs.

The 5-percent PUMS file will be released sometime later this calendar year. The finest levels of geography for the 5-percent PUMS file are the "regular" PUMAs, of which there are 54 in the nine-county Bay Area.

The sixteen tables included in this memo are all regional summary tables. They show the frequency distribution of regional commuters in the Bay Area, by means of transportation, by sixteen different socio-economic categories. Also included are the shares of commuters by means of transportation to work ("mode split"). The sixteen tables include:

- 1. Workers by Sex by Means of Transportation to Work
- 2. Workers by Age by Means of Transportation to Work
- 3. Workers by Race/Hispanic Status by Means of Transportation to Work
- 4. Workers by Household/Group Quarters Status by Means of Transportation to Work
- 5. Workers by Owner/Renter Tenure by Means of Transportation to Work
- 6. Workers by Vehicles Available in Household by Means of Transportation to Work
- 7. Workers by Total Earnings of Transportation to Work
- 8. Workers by Poverty Level by Means of Transportation to Work
- 9. Workers by Disability Status by Means of Transportation to Work
- 10. Workers by Presence of Own Children by Means of Transportation to Work
- 11. Workers by Student Status by Means of Transportation to Work
- 12. Workers by Educational Attainment by Means of Transportation to Work
- 13. Workers by Class of Worker by Means of Transportation to Work
- 14. Workers by Immigration Status by Means of Transportation to Work
- 15. Workers by Commute Duration by Means of Transportation to Work
- 16. Workers by Home-to-Work Departure Time by Means of Transportation to Work

The following sections are some quick highlights from these sixteen tables.

### 1. Workers by Sex by Means of Transportation to Work

- -- 55 percent of Bay Area workers are male.
- -- Transit shares are higher for women (10.3%) than men (8.6%).
- -- Drive alone, bicycle and "other" (motorcycle, taxi, other) shares are higher for men than women.
- -- Carpool shares are slightly higher for women (13.6%) than men (13.1%).
- -- Work at home shares are higher for women (4.5%) than men (3.5%).
- -- Female commute travel is very sensitive to the presence of own children in the household (see Table 10).

## 2. Workers by Age by Means of Transportation to Work

- -- Transit share (12.7%) and number of transit commuters is highest among workers in their 20s.
- -- Drive alone shares tend to increase with age, up to about 60 years of age.
- -- Carpool shares are highest among the youngest workers (less than 30 years).
- -- The largest group of total workers (902 thousand) and drive alone commuters (620 thousand) are in their 30s.
- -- Workers in their 60s have the highest propensity to work at home (9.4%).
- -- Bicycle shares are highest for workers in their teens (2.3%) followed by workers in their 20s (1.7%).
- -- Walk shares are highest for workers in their teens (8.7%) and lowest for workers in their 40s (2.3%).

## 3. Workers by Race/Hispanic Status by Means of Transportation to Work

- -- Transit shares range from 7.7 percent of white (not hispanic) to 14.7 percent of black/african american (not hispanic).
- -- Drive alone shares range from 59.5% (hispanic) to 72.0% (white, not hispanic).
- -- Carpool shares are highest for hispanic workers (21.4 percent in two-or-more person carpools).
- -- Bicycle commute shares range from 0.5% of black/african american commuters to 1.3% for white, not hispanic.
- -- Walk shares are fairly consistent, ranging from 3.1 percent of white, not hispanic to 4.2 percent of "other, not hispanic."
- -- Work at home shares range from 1.9 percent for hispanic/latinos to 5.4 percent of white, not hispanic/latino.

## 4. Workers by Household / Group Quarters Status by Means of Transportation to Work

- -- 99.2 percent of Bay Area workers reside in households
- -- Workers in group quarters are all in "noninstitutional" settings: college dormitories and military quarters.
- -- Transit share (18.0%), bicycle share (4.4%) and walk share (30.7%) are significantly higher for group quarters workers.
- -- Working at home shares are significantly higher for group quarters workers.

#### 5. Workers by Owner/Renter Tenure by Means of Transportation to Work

- -- Workers living in owner-occupied households have significantly higher drive alone and work at home shares
- -- Workers living in renter-occupied households have significantly higher shares for other modes.
- -- Transit shares for renters (13.6%) are significantly higher than homeowners (6.5%).
- -- Bicycle shares for renters (1.7%) are significantly higher than homeowners (0.6%).
- -- Walk shares for renters (5.4%) are significantly higher than homeowners (1.4%).

-- Renter households are typically in much higher density neighborhoods than owner-occupied households. Unfortunately, the PUMS dataset does not contain any indicator relating to household or population density.

## 6. Workers by Vehicles Available in Household by Means of Transportation to Work

- -- Transit commute share is highest for zero-vehicle households (37.7%) and lowest for four-plus vehicle households (4.2%).
- -- Interestingly, 28.9 percent of workers in zero-vehicle households drive alone to work. This is due to either formal or informal car-sharing by the worker in the zero-vehicle household.
- -- Bicycle commute shares (2.7%) and walk commute shares (14.0%) are highest among zero-vehicle households.
- -- Carpooling and work at home shares do not follow any telling increasing or decreasing trends with respect to the number of vehicles in the household.
- -- The largest group of Bay Area workers (1.33 million out of 3.29 million) reside in two-vehicle households
- -- Workers by vehicles available in the households exclude group quarters workers.

### 7. Workers by Total Earning by Means of Transportation to Work

- -- The share of workers driving alone to work increases with increased earnings, from 55.0% of workers earning less than \$10,000 to 77.0% drive alone share for workers earning more than \$100,000.
- -- Transit, carpooling, and bicycle shares tend to decrease with increased earnings.
- -- Walk shares tend to decrease with increased earnings, though high earnings workers have relatively high walk shares.
- -- The share of workers working at home is highest for those with the lowest (6.3%) and highest (5.6%) earnings.

#### 8. Workers by Poverty Level by Means of Transportation to Work

- -- 4.5 percent of Bay Area commuters have incomes less than 100 percent of the U.S. poverty level.
- -- 13.0 percent of Bay Area commuters (428 thousand) have incomes less than 200 percent of the U.S. poverty level.
- -- Similar to the commute shares by earnings, drive alone shares increase as workers rise above the poverty level.
- -- Transit shares are highest for workers under the 100 percent poverty level (19.1%).

#### 9. Workers by Disability Status by Means of Transportation to Work

- -- 14.1 percent of Bay Area commuters have one-or-more self-reported disabilities.
- -- Transit share is higher for workers with disabilities (10.6%) than workers without disabilities (9.1%).
- -- Carpooling share is higher for workers with disabilities (15.1%) than for workers without disabilities (13.0%).
- -- Drive alone share is higher for workers without disabilities (68.3%) than for workers with disabilities (65.0%).
- -- Workers with disabilities have slightly lower bicycle share and worked at home share, than workers without disabilities.
- -- Walk to work shares are basically the same for workers with disabilities (3.3%) compared to others (3.2%).

## 10. Workers by Presence of Own Children by Means of Transportation to Work

- -- 33 percent of Bay Area female commuters have children less than 18 years of age.
- -- Women without children under 18 years have the highest transit commute share (12.0%), compared to men, or women with children under 18.
- -- Women with children under 18 years have higher carpooling shares, and significantly lower transit and bicycling shares than men or women without children under 18.
- -- Higher carpooling rates for women with children may be due to reporting of children as passengers in a work trip carpool.
- -- Women with very young children, less than 6 years of age, have the highest share of working at home (6.4%).

## 11. Workers by Student Status by Means of Transportation to Work

- -- 13 percent of Bay Area commuters are also enrolled in high school or college.
- -- Student-workers have slightly higher transit-to-work shares (9.7% for high school, 10.1% for college students)
- -- Student-workers have significantly higher bicycle-to-work shares (2.2%, high school; 2.0%, college; 1.0%, non-student).
- -- High school students with jobs have a high propensity to carpool to work (24.5%) and walk to work (7.8%).
- -- [Note: sample universe in the 1-percent PUMS includes only 762 sample high school students who are employed, so the standard statistical errors for this group will be fairly large.]

## 12. Workers by Educational Attainment by Means of Transportation to Work

- -- 41 percent of Bay Area commuters have a bachelors degree or higher degree.
- -- Transit commute share is lowest for workers with only some college or AA degree (7.6%) and highest for workers with only a BA degree (11.0%).
- -- Work at home shares increase with increasing educational attainment: 2.4 percent of workers with only a high school diploma or less work at home compared to 5.9 percent of workers with a masters, professional or doctoral degree.
- -- Bicycle-to-work shares are apparently highest for workers with an advanced degree (1.6%).
- -- Walk-to-work shares are highest for workers with a high school diploma or less (4.4%).
- -- Carpool shares are highest for workers with a high school diploma or less (19.4%).

#### 13. Workers by Class of Workers by Means of Transportation to Work

- -- Class of worker is used to differentiate private sector from public sector employment.
- -- Workers in private, not-for-profit companies have the highest transit-to-work shares (11.3%) and bicycle shares (2.9%).
- -- Self-employed or family workers have the lowest transit-to-work shares (3.6%).
- -- Self-employed or family workers have the highest work-at-home shares (21.2%).
- -- Government workers have the lowest work-at-home shares (1.1%).
- -- Transit commute shares for government workers (8.5%) are lower than for private, for-profit companies (10.2%).
- -- Government workers have the highest drive alone shares (72.3%).

#### 14. Workers by Immigration Status by Means of Transportation to Work

- -- This analysis is an extension to research conducted by Professor Dowell Myers of USC, using 1980 and 1990 PUMS.
- -- 68 percent of Bay Area commuters were born in the U.S.A.
- -- Recent immigrants to the United States have the highest share of workers taking transit to work (16.4%), bicycling to work (2.1%) and walking to work (5.4%).
- -- Share of workers taking transit, bicycling or walking to work tend to decrease with increasing length of stay in the U.S. This is due to higher income and higher auto ownership levels of settled versus new immigrants.
- -- Recent immigrants to the United States have the lowest share of workers driving alone to work (50.1%).
- -- Bay Area workers born in the U.S. have the lowest carpooling shares (10.7%) and transit shares (8.6%).

## 15. Workers by Commute Duration by Means of Transportation to Work

- -- The largest group of workers reported a commute duration of 10 to 19 minutes (850 thousand of 3.19 million).
- -- Walk-to-work shares are highest in the less than 10 minutes commute duration category (13.3%).
- -- Bicycle-to-work shares are highest in the less than 10 minutes (2.1%) and 10 to 19 minutes (1.7%) categories.
- -- Transit commutes tend to have the longest duration, such that over 25 percent of 60-minute-plus commutes are by public transportation.
- -- [Note: commute distance is not collected in the decennial census. Data from the forthcoming census journey-to-work package will be used to calculate commute distance by detailed means of transportation.]

## 16. Workers by Home-to-Work Departure Time by Means of Transportation to Work

- -- 73 percent of Bay Area commuters leave home for work between 5:00 AM and 9:00 AM.
- -- Carpoolers tend to start for work early in the morning: e.g., 13.0% carpool share for commutes starting 5:00-6:00 AM.
- -- Transit commuters tend to start for work between 6:00 and 8:00 AM.
- -- Walk commuters tend to start for work between 7:00 and 9:00 AM.

#### **NEXT STEPS**

The 1-percent PUMS data is a great asset for understanding the socio-economic characteristics of households, persons and commuters. One of the major issues is that the small sample size of the 1-percent PUMS may yield some fairly higher standard errors, especially if we're examining the commute mode shares of a small subset of the total population (i.e., rare behavior within a rare group!) We will work on some of these tables to determine if some of these differences (e.g., transit commute share by market segment) are statistically significant.

The characteristics of Bay Area commuters using the 1-percent PUMS will be fairly robust and meaningful, and I do not expect too many differences when the 5-percent PUMS is available. My guess is that the 5-perent PUMS will be much more robust, statistically speaking, and we will be able to do a lot more at the county and sub-county level, than we can do at the 1-percent PUMS level.

We have no word on when the 5-percent PUMS data will be made available, only that it will be released sometime in 2003.

The PUMS dataset is also a chore to deal with, even at the Bay Area level. These tables could be generated for California, but the computer processing time would be about five times as long due to the

much larger samples for California. PUMS data has only been released for sixteen states as of 5/7/03, and a comparable analysis of commuters at the national level would be very onerous and time-consuming.

We will also be using the 1-percent PUMS to begin re-validation checks on our "workers in household / vehicles in household" model (WHHAOX). This is our logit demand model that first splits households by household income quartile into households by workers in household (0, 1, 2+ workers/household) and then splits these households by vehicles available in the household (0, 1, 2+ vehicles/household). The 1-percent PUMS is the first dataset that provides information on the number of workers in the household. Ideally, some of the tables in Part 1 of the CTPP will be used for the validation of our WHHAOX model, but the CTPP is being held hostage by the Census Bureau and we currently have no better word on when we'll be getting it, if at all.

If there are other PUMS-derived tabulations that would be of interest, please let me know and I will let you all know if they can be done, and if they could provide some meaningful information.

Initial Distribution: S. Heminger, T. McMillan, C. Brittle, S. Israel

Table 1 Workers by Sex by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

							Male
	Male		Female		Total		Share of
Means of Transportation	Workers	Share	Workers	Share	Workers	Share	Total
Drive Alone	1,245,683	68.8%	1,006,646	66.8%	2,252,329	67.9%	55.3%
Two-Person Carpool	174,098	9.6%	150,723	10.0%	324,821	9.8%	53.6%
Three-+-Person Carpool	62,644	3.5%	53,677	3.6%	116,321	3.5%	53.9%
Transit	155,762	8.6%	154,840	10.3%	310,602	9.4%	50.1%
Bicycle	28,545	1.6%	7,596	0.5%	36,141	1.1%	79.0%
Walk	55,049	3.0%	52,873	3.5%	107,922	3.3%	51.0%
Other	25,678	1.4%	13,493	0.9%	39,171	1.2%	65.6%
Worked at Home	63,566	3.5%	67,725	4.5%	131,291	4.0%	48.4%
Total	1,811,025	100.0%	1,507,573	100.0%	3,318,598	100.0%	54.6%
Total, Sample Size	17,490		14,744		32,234		54.3%

Table 2 Workers by Age by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

	Age	Age	Age	Age	Age	Age	Total
Means of Transportation	16 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60+	Workers
Drive Alone	69,950	417,602	620,386	596,900	400,289	147,202	2,252,329
Two-Person Carpool	20,354	81,159	89,125	73,892	44,458	15,833	324,821
Three-+-Person Carpool	8,794	25,766	35,182	30,651	11,953	3,975	116,321
Transit	13,412	85,560	79,898	68,120	44,718	18,894	310,602
Bicycle	2,980	11,149	10,014	7,535	3,449	1,014	36,141
Walk	11,480	32,244	24,454	18,892	14,175	6,677	107,922
Other	2,772	8,862	11,518	9,123	5,301	1,595	39,171
Worked at Home	1,746	11,919	31,771	33,346	32,362	20,147	131,291
Total	131,488	674,261	902,348	838,459	556,705	215,337	3,318,598
Total, Sample Size	1,276	6,380	8,611	8,134	5,636	2,197	32,234

	Age	Age	Age	Age	Age	Age	Total
Means of Transportation	16 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60+	Workers
Drive Alone	53.2%	61.9%	68.8%	71.2%	71.9%	68.4%	67.9%
Two-Person Carpool	15.5%	12.0%	9.9%	8.8%	8.0%	7.4%	9.8%
Three-+-Person Carpool	6.7%	3.8%	3.9%	3.7%	2.1%	1.8%	3.5%
Transit	10.2%	12.7%	8.9%	8.1%	8.0%	8.8%	9.4%
Bicycle	2.3%	1.7%	1.1%	0.9%	0.6%	0.5%	1.1%
Walk	8.7%	4.8%	2.7%	2.3%	2.5%	3.1%	3.3%
Other	2.1%	1.3%	1.3%	1.1%	1.0%	0.7%	1.2%
Worked at Home	1.3%	1.8%	3.5%	4.0%	5.8%	9.4%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3
Workers by Race/Hispanic Status by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

-		Not Hispani	ic / Latino			
					Hispanic /	
		Black/	Asian /		Latino	
		African	Pacific		(Any	Total
Means of Transportation	White	American	Islander	Other	Race)	Workers
Drive Alone	1,299,312	124,725	410,151	79,374	338,767	2,252,329
Two-Person Carpool	130,797	19,762	80,191	12,173	81,898	324,821
Three-+-Person Carpool	38,812	8,558	25,222	3,738	39,991	116,321
Transit	139,416	28,859	70,567	11,081	60,679	310,602
Bicycle	23,126	1,041	3,687	1,233	7,054	36,141
Walk	55,007	6,487	20,398	5,016	21,014	107,922
Other	19,553	3,175	4,559	2,372	9,512	39,171
Worked at Home	97,430	4,102	15,017	4,142	10,600	131,291
Total	1,803,453	196,709	629,792	119,129	569,515	3,318,598
Total, Sample Size	17,735	1,830	6,108	1,142	5,419	32,234

Share of Commuters

		Not Hispani	c / Latino			
		•			Hispanic /	
		Black/	Asian /		Latino	
		African	Pacific		(Any	Total
Means of Transportation	White	American	Islander	Other	Race)	Workers
Drive Alone	72.0%	63.4%	65.1%	66.6%	59.5%	67.9%
Two-Person Carpool	7.3%	10.0%	12.7%	10.2%	14.4%	9.8%
Three-+-Person Carpool	2.2%	4.4%	4.0%	3.1%	7.0%	3.5%
Transit	7.7%	14.7%	11.2%	9.3%	10.7%	9.4%
Bicycle	1.3%	0.5%	0.6%	1.0%	1.2%	1.1%
Walk	3.1%	3.3%	3.2%	4.2%	3.7%	3.3%
Other	1.1%	1.6%	0.7%	2.0%	1.7%	1.2%
Worked at Home	5.4%	2.1%	2.4%	3.5%	1.9%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Other is a combination of American Indian, Alaskan Native, Other Race, and Two-or-More Races, excluding Hispanic / Latino. Insufficient samples to report these race groups separately.

Table 4
Workers by Household / Group Quarters Status by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

			Group				GQ
	Household		Quarters		Total		Share of
Means of Transportation	Workers	Share	Workers	Share	Workers	Share	Total
Drive Alone	2,247,398	68.3%	4,931	18.2%	2,252,329	67.9%	0.2%
Two-Person Carpool	322,499	9.8%	2,322	8.6%	324,821	9.8%	0.7%
Three-+-Person Carpool	113,777	3.5%	2,544	9.4%	116,321	3.5%	2.2%
Transit	305,746	9.3%	4,856	18.0%	310,602	9.4%	1.6%
Bicycle	34,948	1.1%	1,193	4.4%	36,141	1.1%	3.3%
Walk	99,612	3.0%	8,310	30.7%	107,922	3.3%	7.7%
Other	38,725	1.2%	446	1.6%	39,171	1.2%	1.1%
Worked at Home	128,846	3.9%	2,445	9.0%	131,291	4.0%	1.9%
Total	3,291,551	100.0%	27,047	100.0%	3,318,598	100.0%	0.8%
Total, Sample Size	31,569		665		32,234		2.1%

Table 5
Workers by Owner/Renter Tenure by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

	Owner-		Renter-				Owner
	Occupied		Occupied		Total		Share of
Means of Transportation	Households	Share	Households	Share	Workers	Share	Total
Drive Alone	1,457,721	73.6%	789,677	60.3%	2,247,398	68.3%	64.9%
Two-Person Carpool	182,836	9.2%	139,663	10.7%	322,499	9.8%	56.7%
Three-+-Person Carpool	64,839	3.3%	48,938	3.7%	113,777	3.5%	57.0%
Transit	127,804	6.5%	177,942	13.6%	305,746	9.3%	41.8%
Bicycle	12,477	0.6%	22,471	1.7%	34,948	1.1%	35.7%
Walk	28,574	1.4%	71,038	5.4%	99,612	3.0%	28.7%
Other	17,060	0.9%	21,665	1.7%	38,725	1.2%	44.1%
Worked at Home	89,636	4.5%	39,210	3.0%	128,846	3.9%	69.6%
Total	1,980,947	100.0%	1,310,604	100.0%	3,291,551	100.0%	60.2%
Total, Sample Size	19,584		12,366		31,950		61.3%

Excludes workers in noninstitutional group quarters.

Table 6 Workers by Vehicles Available in Household by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

## Number of Commuters (in Households)

	Zero			Three	Four-or-More	
	Vehicle	One Vehicle	Two Vehicle	Vehicle	Vehicle	Total
Means of Transportation	Households	Households	Households	Households	Households	Workers
Drive Alone	50,290	451,206	967,368	478,753	299,781	2,247,398
Two-Person Carpool	10,108	84,916	127,964	59,701	39,810	322,499
Three-+-Person Carpool	5,459	26,031	43,957	22,155	16,175	113,777
Transit	65,576	102,879	90,037	30,770	16,484	305,746
Bicycle	4,612	14,600	9,883	3,164	2,689	34,948
Walk	24,296	37,502	24,942	7,620	5,252	99,612
Other	6,160	12,150	12,090	5,321	3,004	38,725
Worked at Home	7,236	31,454	57,508	22,711	9,937	128,846
Total	173,737	760,738	1,333,749	630,195	393,132	3,291,551
Total, Sample Size	1,612	7,253	13,004	6,238	3,843	31,950

## Share of Commuters (in Households)

	Zero	0 1111		Three	Four-or-More	m . 1
	Vehicle	One Vehicle	Two Vehicle	Vehicle	Vehicle	Total
Means of Transportation	Households	Households	Households	Households	Households	Workers
Drive Alone	28.9%	59.3%	72.5%	76.0%	76.3%	68.3%
Two-Person Carpool	5.8%	11.2%	9.6%	9.5%	10.1%	9.8%
Three-+-Person Carpool	3.1%	3.4%	3.3%	3.5%	4.1%	3.5%
Transit	37.7%	13.5%	6.8%	4.9%	4.2%	9.3%
Bicycle	2.7%	1.9%	0.7%	0.5%	0.7%	1.1%
Walk	14.0%	4.9%	1.9%	1.2%	1.3%	3.0%
Other	3.5%	1.6%	0.9%	0.8%	0.8%	1.2%
Worked at Home	4.2%	4.1%	4.3%	3.6%	2.5%	3.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 7 Workers by Total Earnings by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

	Less than	\$10,000 to	\$25,000 to	\$50,000 to	\$75,000 to	\$100,000	Total
Means of Transportation	\$10,000	24,999	\$49,999	\$74,999	\$99,999	or More	Workers
Drive Alone	304,530	440,929	752,559	365,539	191,204	197,568	2,252,329
Two-Person Carpool	67,794	86,568	99,012	38,072	19,082	14,293	324,821
Three-+-Person Carpool	22,929	33,258	36,557	13,315	5,965	4,297	116,321
Transit	67,003	73,525	91,811	43,127	19,110	16,026	310,602
Bicycle	8,979	9,275	8,644	5,327	2,439	1,477	36,141
Walk	39,168	26,863	25,117	8,514	3,318	4,942	107,922
Other	8,769	10,327	9,487	4,927	2,228	3,433	39,171
Worked at Home	34,705	25,909	29,852	15,584	10,818	14,423	131,291
Total	553,877	706,654	1,053,039	494,405	254,164	256,459	3,318,598
Total, Sample Size	5,354	6,858	10,201	4,828	2,476	2,517	32,234

	Less than	\$10,000 to	\$25,000 to	\$50,000 to	\$75,000 to	\$100,000	Total
Means of Transportation	\$10,000	24,999	\$49,999	\$74,999	\$99,999	or More	Workers
Drive Alone	55.0%	62.4%	71.5%	73.9%	75.2%	77.0%	67.9%
Two-Person Carpool	12.2%	12.3%	9.4%	7.7%	7.5%	5.6%	9.8%
Three-+-Person Carpool	4.1%	4.7%	3.5%	2.7%	2.3%	1.7%	3.5%
Transit	12.1%	10.4%	8.7%	8.7%	7.5%	6.2%	9.4%
Bicycle	1.6%	1.3%	0.8%	1.1%	1.0%	0.6%	1.1%
Walk	7.1%	3.8%	2.4%	1.7%	1.3%	1.9%	3.3%
Other	1.6%	1.5%	0.9%	1.0%	0.9%	1.3%	1.2%
Worked at Home	6.3%	3.7%	2.8%	3.2%	4.3%	5.6%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8
Workers by Poverty Level by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

	Less than 100	100 to 150	150 to 200	Greater than	
	Percent of	Percent of	Percent of	200 Percent of	Total
Means of Transportation	Poverty Level	Poverty Level	Poverty Level	Poverty Level	Workers
Drive Alone	70,647	74,472	81,115	2,022,744	2,248,978
Two-Person Carpool	18,119	19,169	18,964	267,567	323,819
Three-+-Person Carpool	7,138	7,447	9,652	91,797	116,034
Transit	28,390	19,380	16,135	245,961	309,866
Bicycle	2,624	2,253	2,371	27,700	34,948
Walk	12,851	8,467	6,844	73,356	101,518
Other	3,277	1,962	1,913	31,910	39,062
Worked at Home	5,657	4,365	4,802	115,692	130,516
Total	148,703	137,515	141,796	2,876,727	3,304,741
Total, Sample Size	1,410	1,289	1,337	28,044	32,080

Share of Commuters

	Less than 100	100 to 150	150 to 200	Greater than	
	Percent of	Percent of	Percent of	200 Percent of	Total
Means of Transportation	Poverty Level	Poverty Level	Poverty Level	Poverty Level	Workers
Drive Alone	47.5%	54.2%	57.2%	70.3%	68.1%
Two-Person Carpool	12.2%	13.9%	13.4%	9.3%	9.8%
Three-+-Person Carpool	4.8%	5.4%	6.8%	3.2%	3.5%
Transit	19.1%	14.1%	11.4%	8.6%	9.4%
Bicycle	1.8%	1.6%	1.7%	1.0%	1.1%
Walk	8.6%	6.2%	4.8%	2.5%	3.1%
Other	2.2%	1.4%	1.3%	1.1%	1.2%
Worked at Home	3.8%	3.2%	3.4%	4.0%	3.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Excludes institutional group quarters workers (college dorms, military quarters)

Table 9
Workers by Disability Status by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

	Workers		Workers				Disabled
	With Any		Without Any		Total		Share of
Means of Transportation	Disability	Share	Disability	Share	Workers	Share	Total
Drive Alone	304,297	65.0%	1,948,032	68.3%	2,252,329	67.9%	13.5%
Two-Person Carpool	49,690	10.6%	275,131	9.7%	324,821	9.8%	15.3%
Three-+-Person Carpool	20,849	4.5%	95,472	3.3%	116,321	3.5%	17.9%
Transit	49,783	10.6%	260,819	9.1%	310,602	9.4%	16.0%
Bicycle	4,330	0.9%	31,811	1.1%	36,141	1.1%	12.0%
Walk	15,510	3.3%	92,412	3.2%	107,922	3.3%	14.4%
Other	7,078	1.5%	32,093	1.1%	39,171	1.2%	18.1%
Worked at Home	16,391	3.5%	114,900	4.0%	131,291	4.0%	12.5%
Total	467,928	100.0%	2,850,670	100.0%	3,318,598	100.0%	14.1%
Total, Sample Size	4,543		27,691	·	32,234		14.1%

Table 10 Workers by Presence of Own Children by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

				Female, With		
		Female, With		Own Children,	Female, No	
		Own Children,	Female, With	under 6 Years	Own Children	
	Male	under 6 Years,	Own Children	and 6 to 17	under 17	Total
Means of Transportation	Workers	Only	6 to 17, Only	Years	Years	Workers
Drive Alone	1,245,683	71,427	210,521	55,881	668,817	2,252,329
Two-Person Carpool	174,098	16,714	31,817	9,229	92,963	324,821
Three-+-Person Carpool	62,644	5,687	15,566	6,576	25,848	116,321
Transit	155,762	9,616	18,337	5,632	121,255	310,602
Bicycle	28,545	159	684	66	6,687	36,141
Walk	55,049	2,121	6,917	2,536	41,299	107,922
Other	25,678	580	1,396	501	11,016	39,171
Worked at Home	63,566	7,328	12,182	5,298	42,917	131,291
Total	1,811,025	113,632	297,420	85,719	1,010,802	3,318,598
Total, Sample Size	17,490	1,097	2,913	807	9,927	32,234

				Female, With		
		Female, With		Own Children,	Female, No	
		Own Children,	Female, With	under 6 Years	Own Children	
	Male	under 6 Years,	Own Children	and 6 to 17	under 17	Total
Means of Transportation	Workers	Only	6 to 17, Only	Years	Years	Workers
Drive Alone	68.8%	62.9%	70.8%	65.2%	66.2%	67.9%
Two-Person Carpool	9.6%	14.7%	10.7%	10.8%	9.2%	9.8%
Three-+-Person Carpool	3.5%	5.0%	5.2%	7.7%	2.6%	3.5%
Transit	8.6%	8.5%	6.2%	6.6%	12.0%	9.4%
Bicycle	1.6%	0.1%	0.2%	0.1%	0.7%	1.1%
Walk	3.0%	1.9%	2.3%	3.0%	4.1%	3.3%
Other	1.4%	0.5%	0.5%	0.6%	1.1%	1.2%
Worked at Home	3.5%	6.4%	4.1%	6.2%	4.2%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 11
Workers by Student Status by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

					Share of Total,
	Enrolled in	Enrolled in		Total	Enrolled in
Means of Transportation	High School	College N	Not a Student	Workers	School
Drive Alone	41,480	227,080	1,983,769	2,252,329	11.9%
Two-Person Carpool	13,652	31,569	279,600	324,821	13.9%
Three-+-Person Carpool	5,432	9,086	101,803	116,321	12.5%
Transit	7,607	34,653	268,342	310,602	13.6%
Bicycle	1,739	6,756	27,646	36,141	23.5%
Walk	6,100	18,727	83,095	107,922	23.0%
Other	869	3,724	34,578	39,171	11.7%
Worked at Home	1,212	10,234	119,845	131,291	8.7%
Total	78,091	341,829	2,898,678	3,318,598	12.7%
Total, Sample Size	762	3,344	28,128	32,234	12.7%

	Enrolled in	Enrolled in		Total
Means of Transportation	High School	College 1	Not a Student	Workers
Drive Alone	53.1%	66.4%	68.4%	67.9%
Two-Person Carpool	17.5%	9.2%	9.6%	9.8%
Three-+-Person Carpool	7.0%	2.7%	3.5%	3.5%
Transit	9.7%	10.1%	9.3%	9.4%
Bicycle	2.2%	2.0%	1.0%	1.1%
Walk	7.8%	5.5%	2.9%	3.3%
Other	1.1%	1.1%	1.2%	1.2%
Worked at Home	1.6%	3.0%	4.1%	4.0%
Total	100.0%	100.0%	100.0%	100.0%

Table 12
Workers by Educational Attainment by Means of Transportation to Work
Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

<u> </u>	High School			Masters/	
	Diploma or	Some College		Professional/	
Means of Transportation	Less	or AA Degree	BA Degree	PhD Degree	Total Workers
Drive Alone	571,563	750,448	572,074	358,244	2,252,329
Two-Person Carpool	129,107	93,605	66,493	35,616	324,821
Three-+-Person Carpool	51,312	32,109	21,514	11,386	116,321
Transit	92,030	78,808	92,665	47,099	310,602
Bicycle	9,133	8,296	10,333	8,379	36,141
Walk	40,886	27,638	24,178	15,220	107,922
Other	14,847	10,270	8,922	5,132	39,171
Worked at Home	22,575	34,396	44,250	30,070	131,291
Total	931,453	1,035,570	840,429	511,146	3,318,598
Total, Sample Size	8,967	10,086	8,137	5,044	32,234

Share of Commuters	11, 1 0 1 1			<b>N</b>	
	High School			Masters/	
	Diploma or	Some College		Professional/	
Means of Transportation	Less	or AA Degree	BA Degree	PhD Degree	Total Workers
Drive Alone	61.4%	72.5%	68.1%	70.1%	67.9%
Two-Person Carpool	13.9%	9.0%	7.9%	7.0%	9.8%
Three-+-Person Carpool	5.5%	3.1%	2.6%	2.2%	3.5%
Transit	9.9%	7.6%	11.0%	9.2%	9.4%
Bicycle	1.0%	0.8%	1.2%	1.6%	1.1%
Walk	4.4%	2.7%	2.9%	3.0%	3.3%
Other	1.6%	1.0%	1.1%	1.0%	1.2%
Worked at Home	2.4%	3.3%	5.3%	5.9%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13 Workers by Class of Worker by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

<u> </u>	Private, For-	Private, Not-		Self-	
	Profit	For-Profit	Employed, or		Total
Means of Transportation	Company	Company	Government	Family	Workers
Drive Alone	1,585,235	140,257	309,841	216,996	2,252,329
Two-Person Carpool	234,882	18,006	38,614	33,319	324,821
Three-+-Person Carpool	84,563	8,602	15,798	7,358	116,321
Transit	236,480	24,460	36,559	13,103	310,602
Bicycle	22,967	6,351	4,290	2,533	36,141
Walk	74,014	9,539	14,585	9,784	107,922
Other	29,058	2,404	4,248	3,461	39,171
Worked at Home	43,283	6,284	4,821	76,903	131,291
Total	2,310,482	215,903	428,756	363,457	3,318,598
Total, Sample Size	22,220	2,144	4,214	3,656	32,234

Share of Communes	Private, For-	Private, Not-		Self-	
	Profit	For-Profit		Employed, or	Total
Means of Transportation	Company	Company	Government	Family	Workers
Drive Alone	68.6%	65.0%	72.3%	59.7%	67.9%
Two-Person Carpool	10.2%	8.3%	9.0%	9.2%	9.8%
Three-+-Person Carpool	3.7%	4.0%	3.7%	2.0%	3.5%
Transit	10.2%	11.3%	8.5%	3.6%	9.4%
Bicycle	1.0%	2.9%	1.0%	0.7%	1.1%
Walk	3.2%	4.4%	3.4%	2.7%	3.3%
Other	1.3%	1.1%	1.0%	1.0%	1.2%
Worked at Home	1.9%	2.9%	1.1%	21.2%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14 Workers by Immigration Status by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

		Year of	Year of	Year of	Year of		_
	Born in the	Entry:	Entry:	Entry:	Entry:	Total	Share, Born
Means of Transportation	USA	1995-2000	1990-1994	1980-1989	pre-1980	Workers	in the USA
Drive Alone	1,588,319	93,325	108,300	232,329	230,056	2,252,329	70.5%
Two-Person Carpool	181,835	27,442	27,664	51,879	36,001	324,821	56.0%
Three-+-Person Carpool	58,655	12,998	10,107	18,906	15,655	116,321	50.4%
Transit	194,019	30,646	20,261	34,328	31,348	310,602	62.5%
Bicycle	25,882	3,938	2,646	1,779	1,896	36,141	71.6%
Walk	70,838	10,106	7,958	10,550	8,470	107,922	65.6%
Other	25,704	4,037	2,581	3,535	3,314	39,171	65.6%
Worked at Home	101,803	3,955	4,194	8,306	13,033	131,291	77.5%
Total	2,247,055	186,447	183,711	361,612	339,773	3,318,598	67.7%
Total, Sample Size	21,904	1,786	1,739	3,478	3,327	32,234	68.0%

-		Year of	Year of	Year of	Year of	
	Born in the	Entry:	Entry:	Entry:	Entry:	Total
Means of Transportation	USA	1995-2000	1990-1994	1980-1989	pre-1980	Workers
Drive Alone	70.7%	50.1%	59.0%	64.2%	67.7%	67.9%
Two-Person Carpool	8.1%	14.7%	15.1%	14.3%	10.6%	9.8%
Three-+-Person Carpool	2.6%	7.0%	5.5%	5.2%	4.6%	3.5%
Transit	8.6%	16.4%	11.0%	9.5%	9.2%	9.4%
Bicycle	1.2%	2.1%	1.4%	0.5%	0.6%	1.1%
Walk	3.2%	5.4%	4.3%	2.9%	2.5%	3.3%
Other	1.1%	2.2%	1.4%	1.0%	1.0%	1.2%
Worked at Home	4.5%	2.1%	2.3%	2.3%	3.8%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 15 Workers by Commute Duration by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

Number of Commuters (Non-Home)

	< 10	10 - 19	20 - 29	30 - 44	45 - 59	60 - 89	90+	Total
Means of Transportation	Minutes	Workers						
Drive Alone	220,637	657,489	489,138	482,573	201,147	143,359	57,986	2,252,329
Two-Person Carpool	20,715	88,275	64,661	78,819	33,011	30,147	9,193	324,821
Three-+-Person Carpool	4,526	17,806	17,967	32,053	20,607	17,251	6,111	116,321
Transit	2,216	21,663	34,926	94,447	56,519	74,490	26,341	310,602
Bicycle	6,206	14,648	7,317	5,467	1,068	1,264	171	36,141
Walk	39,533	37,499	13,847	12,589	1,463	1,697	1,294	107,922
Other	3,402	13,036	6,500	6,611	3,284	2,580	3,758	39,171
Total	297,235	850,416	634,356	712,559	317,099	270,788	104,854	3,187,307
Total, Sample Size	2,923	8,281	6,137	6,850	3,051	2,620	1,035	30,897

Share of Commuters (Non-Home)

	< 10	10 - 19	20 - 29	30 - 44	45 - 59	60 - 89	90+	Total
Means of Transportation	Minutes	Workers						
Drive Alone	74.2%	77.3%	77.1%	67.7%	63.4%	52.9%	55.3%	70.7%
Two-Person Carpool	7.0%	10.4%	10.2%	11.1%	10.4%	11.1%	8.8%	10.2%
Three-+-Person Carpool	1.5%	2.1%	2.8%	4.5%	6.5%	6.4%	5.8%	3.6%
Transit	0.7%	2.5%	5.5%	13.3%	17.8%	27.5%	25.1%	9.7%
Bicycle	2.1%	1.7%	1.2%	0.8%	0.3%	0.5%	0.2%	1.1%
Walk	13.3%	4.4%	2.2%	1.8%	0.5%	0.6%	1.2%	3.4%
Other	1.1%	1.5%	1.0%	0.9%	1.0%	1.0%	3.6%	1.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 16 Workers by Home-to-Work Departure Time by Means of Transportation to Work Census 2000, 1-Percent Public Use Microdata Sample, San Francisco Bay Area

Number of Commuters (Non-Home)

	Before	5:00 - 6:00	6:00 - 7:00	7:00 - 8:00	8:00 - 9:00	After 9:00	Total
Means of Transportation	5:00 AM	AM	AM	AM	AM	AM	Workers
Drive Alone	76,249	153,069	353,609	662,092	474,059	533,251	2,252,329
Two-Person Carpool	12,462	29,728	59,743	94,394	61,305	67,189	324,821
Three-+-Person Carpool	5,114	14,905	26,112	36,229	16,624	17,337	116,321
Transit	9,071	22,375	54,601	98,683	60,403	65,469	310,602
Bicycle	792	1,727	3,252	7,310	9,577	13,483	36,141
Walk	1,980	3,406	9,180	21,541	25,669	46,146	107,922
Other	2,481	3,177	7,366	9,270	7,902	8,975	39,171
Total	108,149	228,387	513,863	929,519	655,539	751,850	3,187,307
Total, Sample Size	1,048	2,177	4,910	9,064	6,396	7,302	30,897

Share of Commuters (Non-Home)

	Before	5:00 - 6:00	6:00 - 7:00	7:00 - 8:00	8:00 - 9:00	After 9:00	Total
Means of Transportation	5:00 AM	AM	AM	AM	AM	AM	Workers
Drive Alone	70.5%	67.0%	68.8%	71.2%	72.3%	70.9%	70.7%
Two-Person Carpool	11.5%	13.0%	11.6%	10.2%	9.4%	8.9%	10.2%
Three-+-Person Carpool	4.7%	6.5%	5.1%	3.9%	2.5%	2.3%	3.6%
Transit	8.4%	9.8%	10.6%	10.6%	9.2%	8.7%	9.7%
Bicycle	0.7%	0.8%	0.6%	0.8%	1.5%	1.8%	1.1%
Walk	1.8%	1.5%	1.8%	2.3%	3.9%	6.1%	3.4%
Other	2.3%	1.4%	1.4%	1.0%	1.2%	1.2%	1.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%