

## **Section 4: 2000 Weekday and Weekend Regional Travel by Personal Characteristics**

Section 3 of this report discussed regional trip rates in terms of household characteristics including income, household size, number of workers, vehicle availability, and location of the household. This section delves into the socio-demographics of BATS2000 respondents and reviews the effects of age, gender, employment and driver's license status on weekday, Saturday, and Sunday trips. As in previous sections of this report, trip rates are based on the weighted and expanded results of the 2000 household travel survey.

### **4.1 Travel by Age of Trip Maker**

The 2000 survey differed from the 1990 survey in that information was collected for all individuals in the household regardless of age. Therefore, BATS2000 respondents range from infants (less than 1 year old) to seniors (up to 99 years old). In this first subsection of the fourth portion of this report, trips per capita by age are explored.

#### **Weekday Trip Rates**

Weekday trip rates per capita by trip purpose share and age of the trip maker are detailed in Table 4.1.1. Rates are plotted in Figure 4.1.1, and trip purpose shares are displayed in Figure 4.1.2 by age of the trip maker. Home-based work trips for young children shown in Table 4.1.1 (and in other tables within this section) are likely due to coding errors or reflect trips where children accompany parents to or from the work place. The results show that the least mobile groups during the weekday are the youngest and oldest travelers. Infants average only 2.1 trips per day, and seniors 75 and older make only 2.2 trips per day during the week. The bell-shaped curve created in Figure 4.1.1 indicates that individual travel increases as people age from their early twenties to their mid-forties and then gradually decreases as individuals move into their senior years. The maximum per capita trip rate for weekday travel is for 46 year olds who average 4.1 trips per day.

Figure 4.1.2 shows how trip purpose shares vary by the age of the trip maker for weekday travel. Home-based school and social/recreational trip shares dominate trips for young children and teenagers. Work shares are high for those between the ages of 19 and 62 where at least a quarter of all trips made by these individuals are home-based work trips. The share of home-based shop (other) trips increases substantially for those sixty and over, ranging from 31.7% to 47.2%.

To better understand the trends in travel at different stages of life, the ages reported in the 2000 survey were aggregated to nine distinct groups (with an additional category for persons not reporting age). Average trips per capita are provided for the nine aggregate age categories in Table 4.1.2 along with trip purpose shares for each age group. A graphic version of this table is provided in Figure 4.1.3. The highest trip rate per capita for weekday trips is produced by individuals between the ages of 40 and 49 who average 3.6 trips per weekday. Trip rates decline for individuals 50 and older and for persons younger than forty. The lowest trip rates by age group are for the youngest and oldest individuals; infants and young children less than 5 average 2.5 trips per day while persons 65 and older average 2.7 trips per weekday. A review of trip

purpose shares in Table 4.1.2 indicates that home-based work shares are highest for persons between 23 and 29 (35.6%). Home-based shop (other) and social/recreational trips are highest for the oldest and youngest age groups. Seniors 65 and over have a 43.8% home-based shop share and 25.2% social/recreational trip share. Children 0 to 4 have a 37.1% home-based shop share and 26.3% social/recreational share. As expected, home-based school trip shares are highest for school age children and young adults 22 and under, with the highest share (45.7%) being for children between 5 and 17.

The final table describing weekday trips by age group presents modal shares for work trips and for total trips (Table 4.1.3). For all trips, children 17 and under are usually vehicle passengers (84.2% share for young children 0 to 4, 65.9% share for children 5 to 17) while adults 18 and over are typically vehicle drivers (adult shares range from 58.6% to 78.0%). As age increases, vehicle driver shares increase for those under 50. Vehicle driver shares begin decreasing for individuals 50 and older. Transit shares are highest for individuals between the ages of 18 and 22 and comprise 11.3% of total trips. Transit shares are also high for 23 to 29 year olds at 10.9% of total trips. While transit shares for work trips are still highest for young adults, transit shares for the remaining age groups are significantly higher for work trips than for total trips. Young adults between the ages of 23 and 29 have the highest bicycle trip shares for total trips and for home-based work trips (2.4% bicycle share for total trips, 3.2% share for work trips). Unlike other travel modes, walk shares and vehicle passenger shares for work trips decrease for all age groups. Walk trip shares are lowest during the week for persons in their forties (6.8%) and highest (15.9%) for children between 5 and 17 years of age. Among working adults, individuals between 23 and 29 average the highest walk trip shares for work trips (4.9%).

### **Weekend Trip Rates**

Trip rates for weekend travel relative to the age of the trip maker are reported in this section. Figures and tables included in the discussion can be found in Appendices E and F.

Saturday per capita trip rates and trip purpose shares for individuals of all ages in the 2000 survey are provided in Table 4.1.1E and Figures 4.1.1E and 4.1.2E. The table and figures show that Saturday trip rates per person have a wider range of values by age of the trip maker than weekday rates. Children under 4, 20 and 21 year olds, and seniors 75 and older average the lowest trip rates per capita on Saturday, with the lowest trip rate produced by 21 year olds (1.5 trips per day). The highest Saturday per capita trip rate is for 65 year olds who average 5.6 trips per day on Saturday. A comparison of the plot in Figure 4.1.1E for Saturday trips to the graphic for weekday travel (Figure 4.1.1) shows that there is higher variation across individuals similar in age on Saturday than during the week. Additionally, the general bell-shaped curve shown for weekday trip rates is less pronounced for Saturday trips.

Saturday trip purpose shares by age of the trip maker are provided in Figure 4.1.2E. Home-based work shares are lower for nearly all age groups as compared to weekday shares (the exceptions – which may be due to coding errors – are for younger children). The two distinct peaks in work shares are for persons between 15 and 25 and individuals between 60 and 65. For younger individuals, the higher percentage of work trips might reflect the weekend nature of jobs that many young people tend to have (i.e., working at a movie theater or department store). The

balance of trip purpose shares for all age groups is concentrated in the home-based shop (other) and home-based social/recreational categories.

As with weekday travel, individuals were categorized into nine different age groups to better understand the impact of age on weekend travel. Table 4.1.2E and Figure 4.1.3E display the results for Saturday trips by age group. Similar to weekday travel, middle-age adults between 30 and 59 produce the most trips per capita on Saturday with the most mobile group being individuals in their forties who average 4.0 trips per day on Saturday. Children and young adults have the lowest per capita trip rates on Saturday: children 0 to 4 make 2.4 trips per day, and children between 5 and 17 average 2.6 trips on Saturday. Young adults between 18 and 22 years old make 2.2 trips per person on Saturday. While shopping and social/recreational trips dominate trip shares for all age groups on Saturday, the most noticeable trend in Figure 4.1.3E is that there appears to be a tradeoff between shopping and social/recreational activities as individuals age. Older individuals tend to shop more on Saturday while younger individuals spend more of their daily trips on social and recreational activities.

Travel on Sunday by age of the trip maker is characterized in Table 4.1.1F and in Figures 4.1.1F and 4.1.2F. Per capita rates on Sunday range from 0.91 trips per day for 20 year olds to a high of 4.7 trips per day made by 41 year olds. Like Saturday travel, trip rates on Sunday vary more between individuals who are close in age. The general trend, however, is that rates per capita for Sunday travel tend to increase as an individual ages. The distribution of trip purpose shares by age of the trip maker indicates that the youngest and oldest individuals tend to make more home-based social/recreational trips on Sunday than middle-age persons. The trip purpose shares displayed in Figure 4.1.2F also show that work shares for young adults are higher on Sunday than on Saturday, nearly reaching 30% of trips for individuals in their early twenties.

Sunday trip rates by the aggregated age group categories are provided in Table 4.1.2F and Figure 4.1.3F. Like weekday and Saturday travel, the highest per capita rates are for individuals between the ages of 40 and 49 (3.5 trips per day) while the lowest trip rates on Sunday are for individuals 22 and younger. Home-based shop (other) shares are highest for persons between 60 and 64 (34.7% of trips). Children between 5 and 17 and those over 65 have the highest home-based social/recreational trip shares (45.1% and 45.0%, respectively).

**Table 4.1.1****Average Weekday Trips per Person by Trip Purpose Share by Age of Trip Maker**

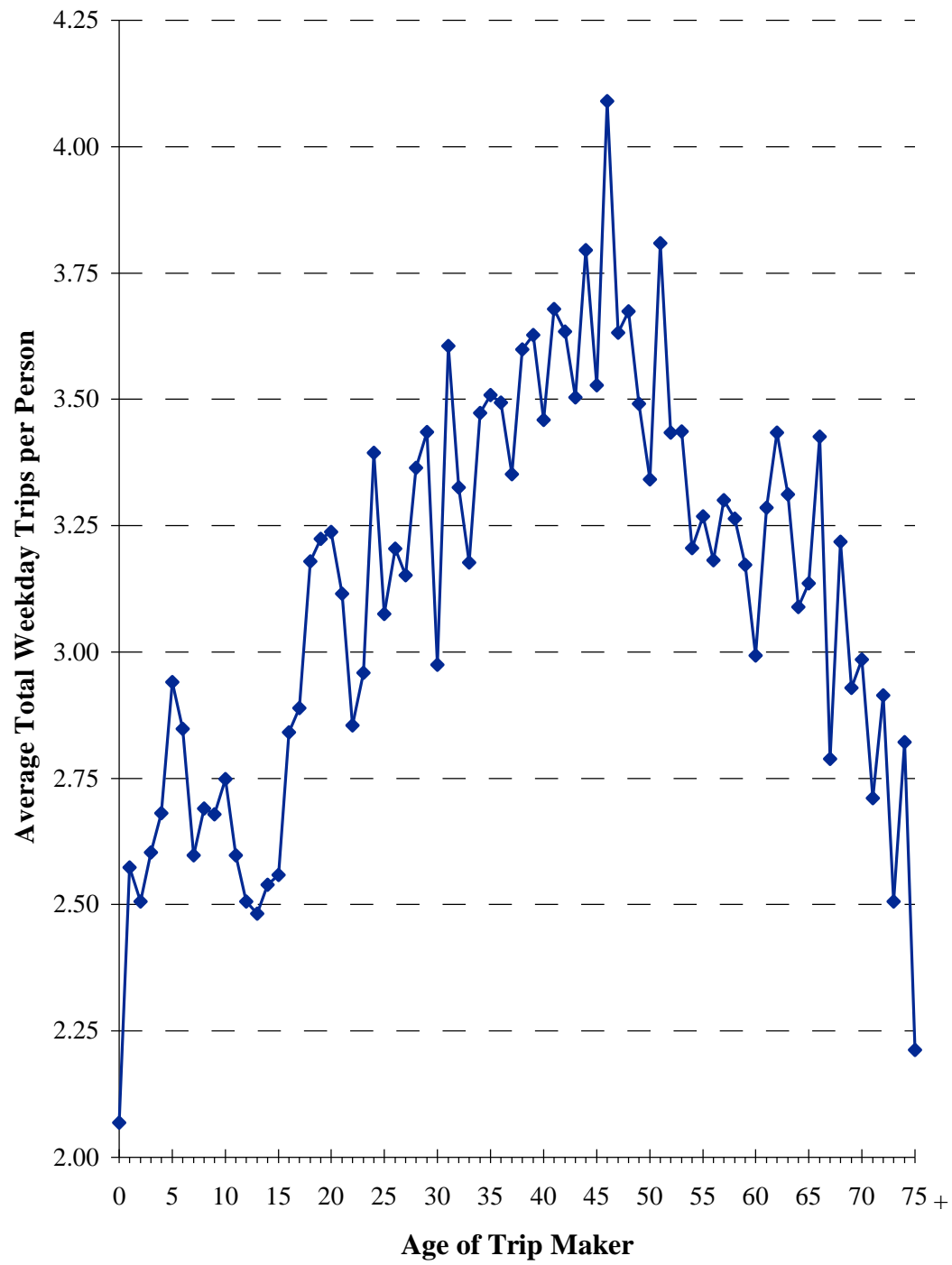
Age	Average Total	Share of Trips by Trip Purpose				
	Trips/Person	HBW	HBSH	HBSR	HBSC	NHB
0	2.07	1.2%	41.0%	32.6%	12.4%	12.7%
1	2.57	0.0%	45.7%	26.4%	13.2%	14.8%
2	2.51	0.2%	39.5%	28.1%	17.2%	15.2%
3	2.60	0.4%	33.9%	24.3%	26.3%	15.2%
4	2.68	0.0%	31.0%	23.4%	28.4%	17.3%
5	2.94	0.3%	20.7%	23.0%	37.9%	18.1%
6	2.85	0.5%	19.3%	21.4%	42.7%	16.1%
7	2.60	0.2%	13.5%	21.6%	48.5%	16.1%
8	2.69	0.6%	12.8%	23.6%	47.1%	15.9%
9	2.68	0.0%	15.6%	23.0%	46.4%	14.9%
10	2.75	0.2%	11.6%	23.0%	48.2%	17.0%
11	2.60	0.2%	11.7%	22.5%	52.1%	13.5%
12	2.51	0.5%	14.1%	22.2%	47.7%	15.6%
13	2.48	0.7%	16.6%	21.7%	44.2%	16.8%
14	2.54	2.0%	13.3%	20.6%	48.5%	15.6%
15	2.56	3.8%	12.5%	21.3%	48.3%	14.0%
16	2.84	3.9%	17.8%	18.9%	44.2%	15.0%
17	2.89	8.5%	15.7%	19.0%	37.8%	19.0%
18	3.18	16.7%	19.7%	19.9%	23.0%	20.8%
19	3.22	25.9%	15.0%	22.3%	15.6%	21.2%
20	3.24	29.7%	15.0%	17.2%	16.7%	21.3%
21	3.12	26.9%	19.3%	17.6%	15.9%	20.4%
22	2.85	30.3%	21.9%	15.9%	10.3%	21.7%
23	2.96	37.8%	17.0%	15.5%	10.0%	19.7%
24	3.39	37.5%	17.2%	14.7%	6.2%	24.4%
25	3.08	34.3%	20.0%	16.5%	4.4%	24.8%
26	3.20	34.6%	20.2%	15.4%	3.4%	26.5%
27	3.15	39.1%	19.3%	14.6%	3.8%	23.3%
28	3.36	33.5%	23.7%	13.2%	4.5%	25.1%
29	3.44	34.0%	20.7%	15.5%	4.1%	25.7%
30	2.97	36.8%	23.0%	15.5%	2.5%	22.3%
31	3.61	30.6%	25.5%	12.7%	2.6%	28.6%
32	3.33	32.3%	25.8%	13.7%	4.2%	24.0%
33	3.18	31.1%	25.9%	15.6%	3.3%	24.1%
34	3.47	30.8%	26.2%	15.3%	2.6%	25.2%
35	3.51	32.8%	31.8%	12.0%	1.9%	21.5%
36	3.49	33.6%	27.8%	14.1%	4.2%	20.3%
37	3.35	35.3%	26.2%	12.5%	3.0%	23.1%

**Table 4.1.1 (continued)****Average Weekday Trips per Person by Trip Purpose Share by Age of Trip Maker**

Age	Average Total		Share of Trips by Trip Purpose			
	Trips/Person	HBW	HBSH	HBSR	HBSC	NHB
38	3.60	28.6%	28.0%	14.4%	4.2%	24.8%
39	3.63	31.8%	27.6%	15.2%	3.4%	22.1%
40	3.46	30.6%	26.9%	13.4%	4.8%	24.2%
41	3.68	30.4%	28.5%	17.0%	2.2%	21.9%
42	3.63	29.6%	28.1%	14.5%	4.8%	23.0%
43	3.50	29.4%	29.1%	13.1%	2.8%	25.6%
44	3.80	27.5%	29.3%	12.2%	4.7%	26.2%
45	3.53	33.7%	27.3%	13.5%	2.2%	23.3%
46	4.09	26.6%	28.4%	14.5%	2.5%	28.0%
47	3.63	32.8%	24.3%	14.9%	2.2%	25.9%
48	3.67	29.3%	27.3%	15.1%	2.2%	26.0%
49	3.49	34.4%	25.6%	13.5%	1.7%	24.8%
50	3.34	31.5%	27.0%	14.5%	1.3%	25.7%
51	3.81	28.5%	28.3%	12.8%	1.8%	28.5%
52	3.43	29.0%	27.3%	15.0%	1.1%	27.5%
53	3.44	28.6%	28.1%	15.2%	1.1%	27.1%
54	3.21	30.1%	24.5%	15.8%	2.0%	27.6%
55	3.27	31.1%	27.2%	14.5%	1.0%	26.2%
56	3.18	31.5%	25.0%	16.1%	0.5%	27.0%
57	3.30	27.5%	29.6%	15.5%	1.5%	25.8%
58	3.26	28.7%	26.9%	14.9%	1.1%	28.4%
59	3.17	27.7%	24.7%	15.9%	0.4%	31.3%
60	2.99	24.8%	33.8%	15.9%	0.8%	24.8%
61	3.29	22.3%	31.7%	19.0%	0.2%	26.8%
62	3.43	20.7%	33.4%	17.3%	1.7%	26.7%
63	3.31	18.4%	33.7%	20.9%	0.5%	26.5%
64	3.09	19.7%	38.8%	19.5%	1.7%	20.3%
65	3.14	11.2%	41.0%	25.1%	1.1%	21.6%
66	3.43	12.5%	37.8%	21.6%	0.6%	27.4%
67	2.79	10.0%	45.0%	21.8%	0.5%	22.7%
68	3.22	7.1%	38.8%	25.8%	5.7%	22.7%
69	2.93	8.4%	45.6%	23.5%	0.3%	22.4%
70	2.99	6.9%	39.9%	27.3%	0.3%	25.6%
71	2.71	6.6%	41.9%	24.9%	0.7%	25.9%
72	2.91	7.6%	45.3%	23.2%	0.8%	23.1%
73	2.51	5.9%	44.0%	26.2%	1.6%	22.2%
74	2.82	7.2%	46.6%	21.5%	0.8%	24.0%
75 +	2.21	2.8%	47.2%	27.3%	1.1%	21.5%
Unknown	3.08	27.6%	24.6%	14.9%	7.5%	25.4%

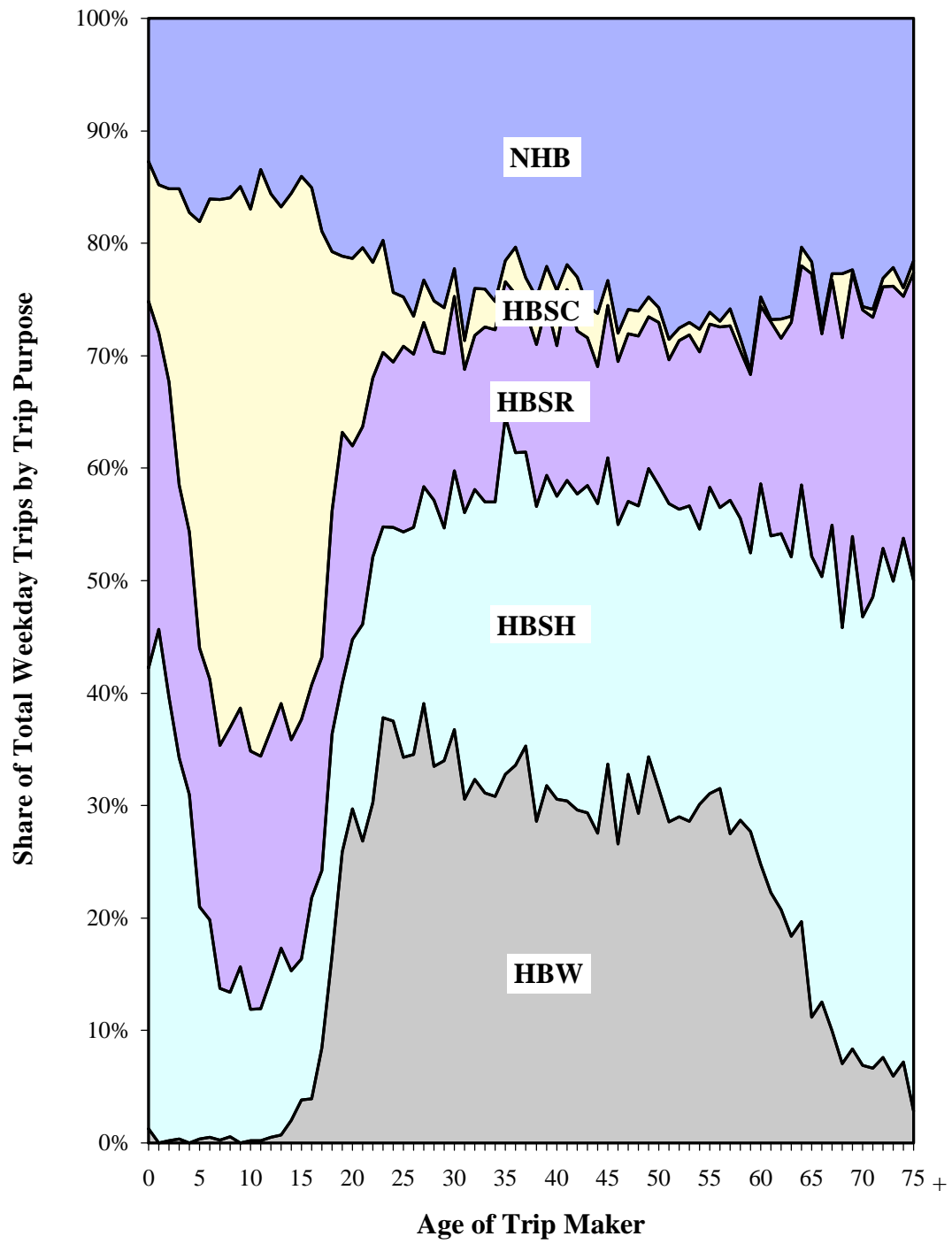
**Figure 4.1.1**

**Average Total Weekday Trips per Person by Age of Trip Maker**



**Figure 4.1.2**

**Share of Weekday Trips by Trip Purpose by Age of Trip Maker**

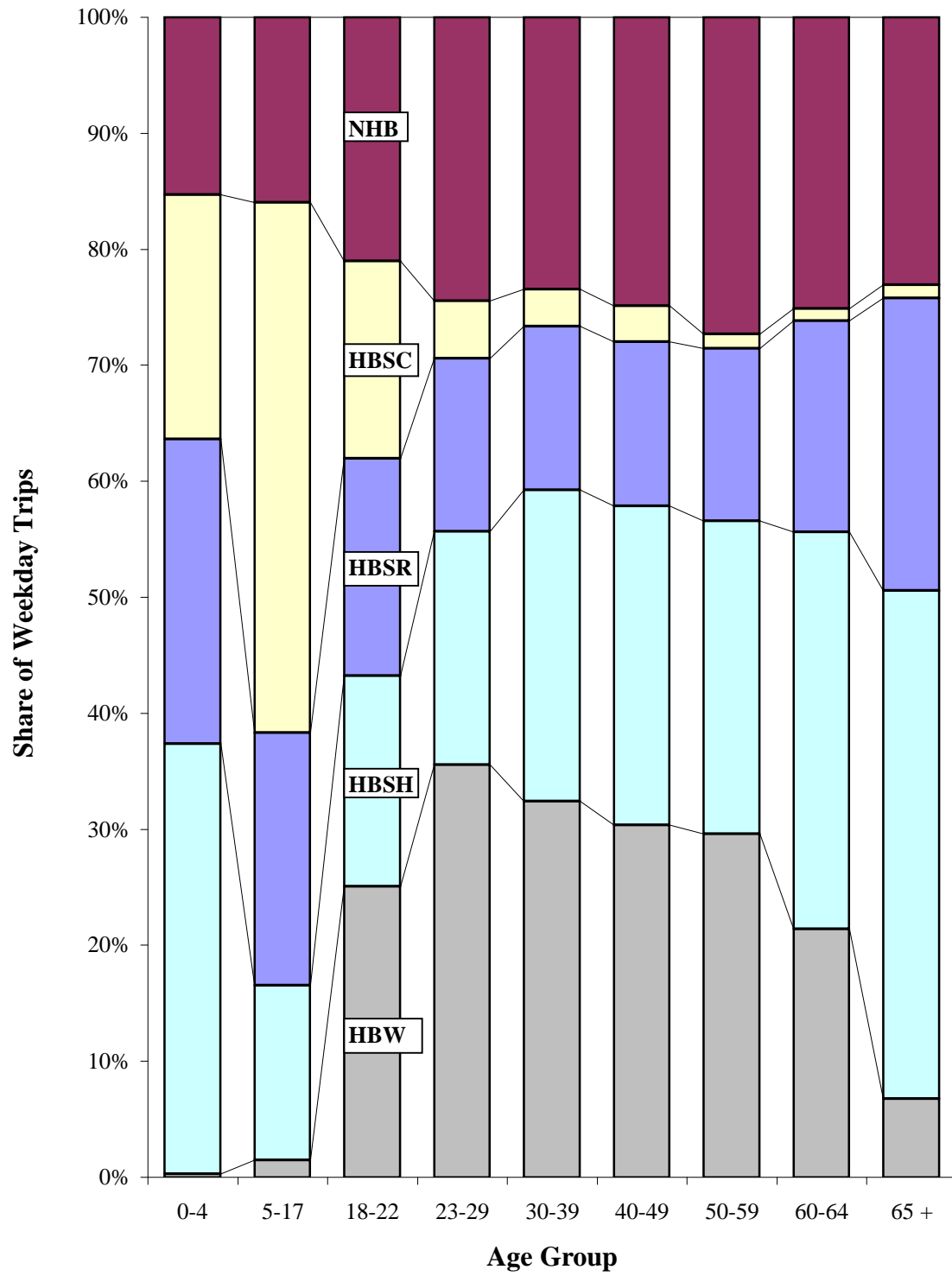


**Table 4.1.2****Average Weekday Trips per Person by Trip Purpose Share by Age Group**

Age Group	Average Total Trips/Person	<u>Share of Trips by Trip Purpose</u>				
		HBW	HBSH	HBSR	HBSC	NHB
0-4	2.507	0.3%	37.1%	26.3%	21.1%	15.3%
5-17	2.679	1.5%	15.0%	21.8%	45.7%	16.0%
18-22	3.129	25.1%	18.1%	18.8%	17.0%	21.0%
23-29	3.247	35.6%	20.1%	15.0%	4.9%	24.5%
30-39	3.406	32.4%	26.9%	14.1%	3.2%	23.4%
40-49	3.640	30.3%	27.5%	14.1%	3.1%	24.9%
50-59	3.360	29.6%	27.0%	14.9%	1.2%	27.3%
60-64	3.215	21.4%	34.2%	18.2%	1.0%	25.1%
65 +	2.670	6.8%	43.8%	25.2%	1.2%	23.1%
Unknown	3.081	27.6%	24.6%	14.9%	7.5%	25.4%
Total	3.133	22.1%	25.7%	17.4%	12.4%	22.4%



**Figure 4.1.3**  
**Share of Weekday Trips by Trip Purpose by Age Group**



**Table 4.1.3****Modal Share for Weekday Work and Total Trips by Age Group**

Age Group	Home-Based Work Trips						Total Trips						
	Driver	Pssgr	Transit	Bicycle	Walk	Other	Driver	Pssgr	Transit	Bicycle	Walk	Other	Sch. Bus
0-4	22.3%	67.3%	5.8%	0.0%	4.5%	0.0%	0.4%	84.2%	1.6%	0.4%	11.6%	1.1%	0.7%
5-17	29.5%	47.9%	6.3%	1.7%	13.9%	0.7%	5.0%	65.9%	4.7%	2.2%	15.9%	2.4%	3.9%
18-22	61.4%	15.0%	16.6%	2.0%	4.4%	0.5%	58.6%	18.1%	11.3%	1.5%	9.1%	1.3%	0.1%
23-29	65.9%	7.9%	17.1%	3.2%	4.9%	1.0%	60.7%	12.2%	10.9%	2.4%	12.1%	1.6%	0.0%
30-39	74.1%	6.8%	12.3%	1.7%	3.8%	1.3%	71.6%	8.5%	6.9%	1.4%	10.2%	1.4%	0.0%
40-49	80.0%	4.6%	11.0%	1.6%	2.3%	0.5%	78.0%	7.1%	5.9%	1.5%	6.8%	0.6%	0.0%
50-59	80.3%	4.3%	10.0%	1.2%	3.0%	1.3%	77.6%	7.9%	5.7%	0.9%	7.0%	0.8%	0.0%
60-64	83.6%	5.0%	8.8%	0.9%	1.5%	0.1%	75.4%	10.5%	5.2%	0.5%	7.7%	0.6%	0.0%
65 +	80.0%	8.2%	6.9%	1.1%	2.6%	1.2%	67.7%	16.2%	3.9%	0.4%	10.7%	1.0%	0.0%
Unknown	80.1%	4.7%	10.5%	1.5%	1.1%	2.2%	65.8%	17.7%	7.0%	0.6%	7.4%	1.4%	0.0%
Total	74.9%	6.8%	12.2%	1.8%	3.4%	1.0%	55.5%	24.5%	6.2%	1.5%	10.3%	1.3%	0.8%

## **4.2 Travel by Age and Gender of Trip Maker**

To further understand travel by Bay Area residents, differences and trends in trip rates are explored based on the gender of the trip maker. Trip reporting rates in BATS2000 are reviewed and compared to results from other surveys, and the impact of gender across the different age groups is also examined. Reported trip rates are based on the weighted and expanded results of the 2000 Bay Area Travel Survey.

In addition to measures previously discussed in this report, personal mobility is another key factor used to understand travel behavior. It is important to remember that not all individuals travel on their specified survey day. Table 4.2.1 shows the percentage of the population by gender and age group who reported trips made during their assigned survey period. Results are provided for four different surveys: the 1990 and 2000 Bay Area Travel Surveys, the 1981 Sydney metropolitan area travel survey, and the 1978/1979 Melbourne metropolitan area survey.

There are a few points to consider when comparing the results from the four surveys. These surveys span a period of thirty years. Many social changes have taken place since 1978, the increase of women in the work force being one of the most significant in terms of travel. Additionally, the 1978/79, 1981, and 1990 surveys were all trip-based surveys while the 2000 survey was an activity-based survey. Therefore, the increase in the mobile share of the population in 2000 may be due to the ability of activity-based surveys to capture trips that might have not been reported in a traditional trip-based survey (Stopher, 1992). The final point regarding the comparison of these four surveys is that in the Sydney study, great effort was made to survey non-travelers (Wigan, 1987).

For individuals between 5 and 99 years of age, 94% reported out-of-home travel activities during their survey period in BATS2000. This mobile share of the population is 11% higher than the 1990 Bay Area Travel Survey and 16% and 9% higher than the Sydney and Melbourne surveys. For all age groups, the 2000 survey shows the smallest difference between the mobile share of the female and male populations, with the mobile share for males being just 2% higher than females (95% versus 93%). The largest discrepancy between males and females is found in the Melbourne survey where males report a 10% higher mobile share than females.

For each of the four household travel surveys, the difference in mobile shares between males and females tends to increase with an increase in age, with the most pronounced differences being for individuals over sixty. Across the time dimension, the differences between mobile shares of men and women have decreased from the 1978/79 Melbourne survey to the 2000 Bay Area survey.

The least mobile group in the 2000 survey are individuals sixty-five and over (87% reporting travel) while the most mobile group are individuals between 35 and 59 where 96% reported out-of-home travel during their specified survey period. For the remaining three surveys, the oldest group (ages 65 to 99) has reported the smallest mobile shares, which is similar to the 2000 survey. However, unlike the 2000 survey, the most mobile share of the population in the 1990, 1981, and 1978/79 surveys were individuals 16 and under.

## **Weekday Trip Rates**

Trips per capita for weekday travel stratified by age group and gender are displayed in Table 4.2.2 for the five trip purpose categories. As was found in the previous section for trip rates by age group, the most mobile group are those between 40 and 49 years of age. By gender, 40 to 49 year old men average 3.4 trips per weekday while women in this age group average 3.8 trips per weekday. For females, the lowest weekday trip rate is for women sixty-five and older who average only 2.5 trips per day. For males, the lowest trip rate is at the opposite end of the spectrum; young boys four and under average only 2.5 trips per weekday. Across all age groups, females make slightly more trips per weekday than males averaging 3.2 trips per person (males average 3.1 trips per weekday). This is true for all age groups except for persons sixty and over where older men make more trips during the week than older women. The largest difference between women and men in terms of trip rates per capita is for 30 to 39 year olds where females make nearly 0.5 more trips per weekday than males in this age group.

Trip purpose shares for men and women of different ages are also provided in Table 4.2.2 for weekday travel (see Table 4.2.3 for per capita trip rates by trip purpose). Men have higher trip shares for home-based work and non-home-based trips. Women spend more of their trips on home-based shop, social/recreational, and school trips. The most pronounced differences are for work and shop trips. Men have nearly 8% higher work shares than women while women have 7.5% higher home-based shop shares. By age group, weekday work shares are highest for men and women between 23 and 29 years of age (42.3% and 29.7% home-based work trip shares) and lowest for persons 65 and over (not including children 17 and younger). For home-based shopping trips, the highest trip purpose shares are for seniors 65 and over (roughly 44% share for both sexes). Seniors 65 and over and young children less than four have the highest home-based social/recreational trip shares (between 25% and 27%).

Weekday modal shares for men and women by age group are shown in Table 4.2.4 for home-based work and total trips. Men have higher modal shares for total trips for all modes except vehicle passenger and school bus. The largest difference between males and females is for bicycle trips. Men are twice as likely to use a bicycle than women are (2.1% versus 0.9% bike share). Another interesting result for mode share is for transit trips. Typically, it is assumed (and has been found) that women are more likely to take transit. However, BATS2000 results show that, for total trips, men have a slightly higher transit share than women (6.4% versus 5.9%). By age group, males and females between 18 and 29 years of age have the highest propensity for using transit. Shares for transit range from 10.1% to 12.2% for these age groups. Vehicle passengers are most often younger individuals under the age of 17, which is an intuitive result since most of these individuals are not yet able to drive themselves. As women get older (fifty and above), they are more likely to choose the vehicle passenger mode. Nearly 22% of trips made by women sixty-five and older are vehicle passenger trips.

Vehicle driver, transit, and bicycle shares are higher for men and women for home-based work trips while vehicle passenger and walk trip shares are significantly lower than total trip shares. Vehicle driver shares for home-based work trips are about 19% higher than for total trips for both genders. Vehicle passenger shares for men and women are more than 17% lower for work trips while walk shares decrease by roughly 7%. Transit shares for work trips are slightly higher

for women. The largest transit share difference is for those between 23 and 29 years old where the transit share for women is nearly 6% higher than for men (14.6% versus 20.2%). As age increases, the share of vehicle driver work trips also increases. This trend is steadier for men since shares actually decrease for 50 to 59 year old women and for women 65 and over. The highest vehicle driver share for work trips is for men older than 65 who have an 87% vehicle driver share. For bicycle trips, men and women in the 23-29 year old age group are most likely to get to and from work on a bike, with men having an even higher propensity for bicycle commuting than women. Bicycle shares for men are more than twice as high than for women in this group (4.2% versus 1.9%). The highest home-based walk share for women is for those between 18 and 22 who average a 5% walk share for work trips. The highest work trip walk share for men is for the 23-29 year old group (6.5% walk share).

### **Weekend Trip Rates**

Trip rates for weekend travel characterized by age and gender of the trip maker are discussed in this section. Trip rates per capita are reviewed along with trip purpose shares. A discussion of modal split for total trips and for home-based shop and social/recreational trips for travel on Saturday and Sunday is also included.

Saturday trip rates per person for males and females in the nine different age groups are shown in Tables 4.2.2E and 4.2.3E. The most mobile women on Saturday are those between the ages of 23 and 49 with 40 to 49 year olds averaging the most trips on Saturday (4.1 per person). Men between 40 and 59 have the highest trip rates for males on Saturday with an average of 3.8 trips per day for men in their forties and 3.5 trips per day for men in their fifties. As with weekday rates, women make slightly more trips on Saturday than men (3.1 versus 3.0 per person). Home-based work and school rates and shares are significantly lower on Saturday while shop and social/recreational trips are higher. Shop and social/recreational trips are each roughly more than a third of all trips for both men and women. Females have approximately 3% higher shop shares while men have 3% higher social/recreational shares. However, the difference in the number of trips produced is larger for home-based shop (other) trips. Women make 0.15 more shop trips on Saturday than men, whereas men make only 0.03 more social/recreational trips than women on Saturday. By trip purpose share, older individuals (65 and older) are most likely to make home-based shop (other) trips on Saturday while younger individuals (17 and under) are most likely to make home-based social/recreational trips on Saturday.

Tables 4.2.4.1E and 4.2.4.2E display Saturday modal shares for total trips, home-based shop trips, and home-based social/recreational trips. For total trips, males have the highest vehicle driver share of 57%, which is 12% higher than the female share of vehicle driver trips. Female trips are dominated by vehicle trips, but the split between vehicle drivers and passengers is less pronounced than it is for males. Females average a 45% vehicle driver share on Saturday and 43% vehicle passenger share, which is 14% higher than men. Similar to weekday modal shares, the bicycle share for men is more than twice as high than for women (1.4% versus 0.6%). Young men between 5 and 22 have the highest bicycle shares (2.8% for 5-17 year olds and 3.4% for 18-22 year olds). Transit and walk trips are most likely to be made by 23-29 year old men and women who have roughly a 6% transit share and 14% walk share.

For home-based shop (other) trips, vehicle driver shares for both genders are higher than for total trips while vehicle passenger shares are lower. Transit, bike, and walk shares for men are nearly the same for shop trips as for total trips. However, transit and walk shares decrease slightly for women for shopping trips. Vehicle driver shares are lower for men and women for home-based social/recreational trips on Saturday while vehicle passenger shares are higher than for total trips. Vehicle driver and passenger shares for shop and social/recreational trips suggest that more group travel occurs for recreation and social trips than for shopping trips and that females are more likely than males to travel with others for shop, social/recreational, and total trip purposes.

Sunday trip rates per capita and trip purpose shares are outlined in Tables 4.2.2F and 4.2.3F. A review of average total trips per person shows that the differences between trip rates for men and women is almost nil for travel on Sunday. This is quite different than the results for weekday and Saturday travel. The largest difference between trip rates for men and women on Sunday is for home-based shop (other) trips where men make 0.14 less shopping trips on Sunday than women. The largest trip share for shopping trips is 37.6% for women between 40 and 49. Women between 50 and 59 have the second highest shop trip share of 33.7%. Home-based social/recreational shares on Sunday are highest for the youngest and oldest residents. Children under 17 and seniors 65 and older have social/recreational trip shares above 40%. The least mobile group in terms of social/recreational trips by shares and trips per capita are young adults between 23 and 29 years of age.

Modal shares for Sunday travel are provided for total trips, home-based shop (other) trips, and home-based social/recreational trips in Tables 4.2.4.1F and 4.2.4.2F. For total trips, transit and walk shares are the same for males and females. Both genders average 2.2% transit shares and 8.2% walk shares on Sunday. Young adults between 18 and 29 have the highest walk shares ranging from 10% to 12% of total trips. Transit shares are highest for young men and women between 18 and 22 years of age (women average 3.7% transit shares, men have a 7.0% transit share). Bicycle shares are more than three times higher for males on Sunday (2.7% bicycle share compared to 0.8% for females). By age group, males between 5 and 39 have the highest bike shares ranging from a low of 3.6% for 30-39 year olds to a high of 4.9% for 23-29 year olds. Similar to Saturday mode shares, vehicle passenger shares for men are half of vehicle driver shares (29% versus 58%) while the split is nearly even for driver and passenger shares for women (45% vehicle driver and 43% vehicle passenger shares).

For home-based shop trips, vehicle driver shares are higher and vehicle passenger shares are lower than total trip shares for both females and males. The opposite is true for home-based social/recreational trips on Sunday. Vehicle driver trips are lower and vehicle passenger trip shares are higher for both genders. Like Saturday trends, this suggests that group travel is more likely to occur for social/recreational trips than for shopping trips on Sunday. Bicycle shares for males for both shopping and social/recreational trips are more than three times higher than bicycle shares for females for these two trip purposes. For home-based shopping trips on Sunday, the highest bike share is for boys between the ages of 5 and 17 (6.8%). Girls in this age group have the highest female bike share of 3.5%. For home-based social/recreational trips, 18-22 year old men average 9.5% bicycle shares while 23 to 29 year old men have a 8.7% bike share. Young girls (four and under) and women between 30 and 39 have the highest female bicycle shares of 1.5% for social/recreational trips. Walk shares for shop and social/recreational

trips are about evenly split between the genders. Walk shares for home-based shop (other) trips are about 1% higher than both total trip shares and home-based social/recreational shares.

**Table 4.2.1****Share of Population Reporting Travel by Age and Gender****1990 and 2000 San Francisco Bay Area, 1981 Sydney, and 1978/79 Melbourne**

Region	Gender	<u>Age Group (Percent Share of Population Reporting Travel)</u>							
		5-11	12-16	17-25	26-34	35-59	60-64	65-99	5-99
2000	Male	93%	92%	93%	96%	97%	94%	90%	95%
San Francisco	Female	93%	92%	92%	94%	96%	92%	84%	93%
Bay Area	Total	93%	92%	93%	95%	96%	93%	87%	94%
1990	Male	88%	89%	83%	87%	88%	76%	70%	85%
San Francisco	Female	86%	90%	82%	84%	85%	70%	60%	82%
Bay Area	Total	87%	90%	82%	86%	87%	73%	65%	83%
Sydney	Male	86%	84%	76%	82%	81%	77%	67%	80%
	Female	86%	85%	77%	80%	75%	64%	57%	76%
	Total	86%	84%	77%	81%	78%	71%	61%	78%
Melbourne	Male	95%	95%	92%	95%	92%	79%	61%	90%
	Female	94%	94%	87%	82%	76%	61%	52%	80%
	Total	95%	95%	89%	89%	84%	70%	56%	85%



**Table 4.2.2****Average Weekday Trips per Person by Trip Purpose Share by Age Group by Gender**

Age Group	Gender	Average Total Trips/Person	<u>Share of Trips by Trip Purpose</u>				
			HBW	HBSH	HBSR	HBSC	NHB
0-4	Male	2.459	0.4%	36.2%	25.4%	22.4%	15.7%
	Female	2.558	0.2%	37.9%	27.2%	19.8%	14.9%
5-17	Male	2.652	1.6%	14.9%	22.9%	45.3%	15.3%
	Female	2.705	1.4%	15.1%	20.8%	46.2%	16.6%
18-22	Male	3.042	27.4%	17.1%	18.5%	19.0%	18.0%
	Female	3.205	23.2%	19.0%	18.9%	15.3%	23.6%
23-29	Male	3.247	42.3%	14.3%	14.7%	4.3%	24.3%
	Female	3.248	29.7%	25.1%	15.2%	5.5%	24.6%
30-39	Male	3.169	41.9%	19.0%	13.0%	1.7%	24.4%
	Female	3.629	24.6%	33.3%	15.0%	4.4%	22.6%
40-49	Male	3.433	36.8%	21.4%	13.4%	2.3%	26.1%
	Female	3.835	24.9%	32.7%	14.7%	3.8%	23.8%
50-59	Male	3.332	33.7%	23.3%	14.0%	1.0%	28.0%
	Female	3.387	25.7%	30.5%	15.7%	1.4%	26.6%
60-64	Male	3.410	24.4%	30.9%	17.6%	1.5%	25.7%
	Female	3.044	18.5%	37.5%	18.9%	0.6%	24.6%
65 +	Male	2.877	8.2%	43.6%	24.9%	0.8%	22.6%
	Female	2.511	5.5%	44.0%	25.5%	1.5%	23.5%
Unknown	Male	3.006	27.5%	22.3%	15.8%	12.6%	21.8%
	Female	3.127	27.6%	26.0%	14.4%	4.5%	27.5%
Total	Male	3.055	26.3%	21.7%	17.1%	12.3%	22.6%
	Female	3.205	18.4%	29.2%	17.7%	12.5%	22.2%

**Table 4.2.3****Average Weekday Trips per Person by Trip Purpose by Age Group by Gender**

Age Group	Gender	Average Total Trips/Person	<u>Trips/Person by Trip Purpose</u>				
			HBW	HBSH	HBSR	HBSC	NHB
0-4	Male	2.459	0.009	0.891	0.624	0.550	0.385
	Female	2.558	0.006	0.968	0.695	0.507	0.382
5-17	Male	2.652	0.043	0.396	0.607	1.201	0.405
	Female	2.705	0.037	0.409	0.561	1.249	0.448
18-22	Male	3.042	0.832	0.520	0.564	0.578	0.547
	Female	3.205	0.743	0.609	0.607	0.490	0.756
23-29	Male	3.247	1.374	0.464	0.478	0.141	0.790
	Female	3.248	0.963	0.817	0.492	0.177	0.798
30-39	Male	3.169	1.326	0.602	0.411	0.055	0.774
	Female	3.629	0.893	1.209	0.546	0.160	0.821
40-49	Male	3.433	1.262	0.733	0.461	0.079	0.897
	Female	3.835	0.956	1.255	0.565	0.146	0.912
50-59	Male	3.332	1.123	0.775	0.466	0.033	0.935
	Female	3.387	0.870	1.033	0.533	0.049	0.902
60-64	Male	3.410	0.831	1.054	0.599	0.051	0.875
	Female	3.044	0.562	1.142	0.574	0.018	0.748
65 +	Male	2.877	0.235	1.254	0.715	0.022	0.651
	Female	2.511	0.139	1.105	0.640	0.038	0.589
Unknown	Male	3.006	0.826	0.672	0.476	0.379	0.654
	Female	3.127	0.864	0.812	0.451	0.140	0.861
Total	Male	3.055	0.803	0.664	0.523	0.374	0.690
	Female	3.205	0.590	0.935	0.566	0.401	0.712

**Table 4.2.4****Modal Share for Weekday Work and Total Trips by Age Group by Gender**

Age Group	Gender	<u>Home-Based Work Trips</u>						<u>Total Trips</u>						
		Driver	Pssgr	Transit	Bicycle	Walk	Other	Driver	Pssgr	Transit	Bicycle	Walk	School Other	Bus
0-4	Male	32.5%	64.0%	3.5%	0.0%	0.0%	0.0%	0.4%	81.5%	2.4%	0.4%	12.7%	1.8%	0.8%
	Female	6.6%	72.6%	9.3%	0.0%	11.6%	0.0%	0.4%	86.8%	0.8%	0.4%	10.6%	0.5%	0.6%
5-17	Male	30.7%	49.0%	1.1%	3.2%	15.1%	1.1%	4.7%	63.4%	4.2%	2.8%	18.6%	3.1%	3.2%
	Female	28.2%	46.8%	11.9%	0.2%	12.7%	0.2%	5.2%	68.2%	5.2%	1.7%	13.5%	1.7%	4.5%
18-22	Male	63.5%	13.0%	16.7%	2.7%	3.8%	0.3%	62.9%	15.5%	10.1%	1.7%	8.7%	0.9%	0.1%
	Female	59.3%	16.9%	16.6%	1.4%	5.0%	0.8%	55.0%	20.3%	12.2%	1.3%	9.4%	1.7%	0.1%
23-29	Male	65.2%	8.4%	14.6%	4.2%	6.5%	1.1%	60.6%	11.3%	11.0%	3.4%	12.0%	1.7%	0.0%
	Female	66.8%	7.3%	20.2%	1.9%	3.0%	0.7%	60.8%	13.0%	10.8%	1.6%	12.2%	1.5%	0.0%
30-39	Male	73.4%	5.1%	14.1%	2.2%	3.8%	1.4%	71.1%	6.5%	9.1%	2.0%	9.8%	1.6%	0.0%
	Female	75.2%	9.3%	9.8%	0.8%	3.7%	1.1%	72.0%	10.1%	5.2%	0.9%	10.6%	1.2%	0.0%
40-49	Male	81.5%	3.3%	10.0%	2.3%	2.3%	0.6%	78.9%	4.5%	6.0%	2.7%	7.2%	0.6%	0.1%
	Female	78.1%	6.1%	12.4%	0.7%	2.4%	0.3%	77.3%	9.2%	5.8%	0.6%	6.6%	0.6%	0.0%
50-59	Male	82.3%	1.8%	10.4%	1.9%	2.2%	1.4%	80.4%	4.4%	6.3%	1.5%	6.4%	0.9%	0.0%
	Female	77.9%	7.3%	9.5%	0.2%	4.0%	1.1%	75.0%	11.2%	5.1%	0.4%	7.6%	0.7%	0.0%
60-64	Male	85.6%	4.0%	7.4%	1.5%	1.4%	0.2%	81.7%	5.4%	4.6%	0.8%	7.0%	0.5%	0.0%
	Female	81.1%	6.4%	10.7%	0.0%	1.8%	0.1%	69.2%	15.5%	5.8%	0.3%	8.4%	0.8%	0.0%
65 +	Male	86.6%	3.2%	6.0%	0.7%	2.2%	1.4%	76.8%	9.8%	3.1%	0.6%	8.7%	0.9%	0.0%
	Female	71.5%	14.8%	8.1%	1.8%	3.1%	0.9%	59.7%	21.9%	4.6%	0.3%	12.4%	1.1%	0.0%
Unknown	Male	82.6%	1.7%	10.5%	0.1%	1.5%	3.6%	59.1%	24.1%	5.5%	0.5%	7.8%	2.9%	0.0%
	Female	78.6%	6.5%	10.5%	2.2%	0.8%	1.4%	69.8%	13.9%	7.9%	0.7%	7.2%	0.5%	0.0%
Total	Male	75.7%	5.3%	12.0%	2.5%	3.5%	1.1%	56.2%	22.4%	6.4%	2.1%	10.7%	1.5%	0.7%
	Female	73.9%	8.7%	12.4%	0.9%	3.4%	0.8%	55.0%	26.3%	5.9%	0.9%	10.0%	1.1%	0.9%

### **4.3 Travel by Employment Status**

The third demographic factor reviewed in relation to weekday and weekend trip rates is employment status of the trip maker. Trip rates are provided for employed and non-employed residents of the Bay Area based on the weighted and expanded count of survey respondents. A small percentage of survey respondents did not provide employment information; therefore, their worker status is unknown. Rates for these individuals are provided in the tables within this section for informational purposes only and will not be discussed.

The table below shows the distribution of men and women in the Bay Area by reported employment status.

Gender	Employed Residents	Percent of Total	Non-Employed Residents	Percent of Total	Unknown Employment Status	Percent of Total	Total Persons
Male	1,865,917	58.5%	1,319,878	41.4%	3,169	0.1%	3,188,964
Female	1,646,897	47.7%	1,800,711	52.2%	4,489	0.1%	3,452,097
TOTAL	3,512,814	52.9%	3,120,589	47.0%	7,658	0.1%	6,641,061

Approximately 53% of Bay Area residents are workers, and 47.0% are non-workers (this includes individuals of all ages). The majority of men are workers (58.5%) while the majority of women do not work (52.2%). Of working individuals, 53.1% are men while the majority of non-workers are female (57.7%). For this analysis, non-workers include students, retirees, unemployed persons, and homemakers.

To determine employment status, survey respondents were asked if they worked for pay on a regular basis. Regardless of student status, individuals were considered employed if they answered affirmatively to the employment question (i.e., a student who is a part-time worker is considered an employed person in this report).

### **Weekday Trip Rates**

Average weekday trip rates per capita and trip purpose shares by employment status and gender are provided in Table 4.3.1. Person level trip rates for the five trip purpose categories by employment status and gender are shown in Table 4.3.2. Working men and women make about 25% more trips than non-working individuals. Employed females average 3.6 trips per weekday while non-employed females make only 2.9 trips per weekday. For males, employed men make 3.3 trips per day, and non-employed males average 2.7 trips on a typical weekday. For non-employed persons, home-based work shares and rates have non-zero values. However, this is likely due to a coding error in the survey retrieval process as noted in the table.

Of working residents, employed men have the highest home-based work shares averaging nearly 40% of total trips. Working women have only a 32.9% home-based work share. Non-home-based shares are the same for men and women who work (25.7% of trips). For the remaining three trip purposes – home-based shop, social/recreational, and school – working women have higher trip purpose shares than working men. For non-work trips, the largest difference in trip purpose shares for employed individuals is for home-based shopping trips where working women have a 6.0% higher share of shopping trips than working men. For non-employed residents, females still have a higher share of home-based shopping trips than males. However, non-employed males have higher home-based social/recreational and school trip shares than non-working females. Table 4.3.2 shows that for working and non-working individuals, females average 0.26 more home-based shop (other) trips than males.

Modal splits for total and home-based work trips for working and non-working males and females are provided in Table 4.3.3. For total trips, employed individuals have substantially higher vehicle driver shares than non-employed persons (51.6% difference between working and non-working males and 37.5% difference between employed and non-employed females). These large differences are, for the most part, due to the number of children who are present in the non-working category and who are not able to drive themselves (see section 4.4 for a discussion of trip rates by driver's license status).

Among employed individuals, vehicle driver shares are roughly the same for working men and women (74.8% and 72.5% vehicle driver shares, respectively). Working women have higher vehicle passenger shares (11.3% versus 6.9% for working men). Walk shares are the same for employed men and women at 7.9% of all trips. Transit shares are highest for working men at 7.2%. The bicycle share for working men is nearly three times higher than that for working women (2.2% versus 0.8%).

Modal shares for non-employed individuals show that females have an 11.8% higher vehicle driver share than non-working males, averaging 35.0% of all trips by mode vehicle driver. Vehicle passenger shares are much higher for non-employed persons and are highest for non-working males who make 49.8% of trips as vehicle passengers. Non-working females have a vehicle passenger share of 43.3%, which is nearly four times higher than vehicle passenger shares for working women. Another large difference in modal splits between workers and non-workers is for walk trips. Non-working males have nearly twice as high a walk share than working men (15.6% compared to 7.9%) while the walk share for non-working females is 4.5% higher than the share for working women.

### **Weekend Trip Rates**

Person level trip rates for travel on Saturday and Sunday for working and non-working males and females are discussed in this section. A review of trip purpose shares and rates as well as modal splits for home-based shopping and social/recreational trips is also included.

Trips per capita by employment status, gender, and trip purpose along with trip purpose shares are included in Tables 4.3.1E and 4.3.2E for travel on Saturday. Total trip rates per capita are slightly lower for Saturday travel, but like weekday rates, females in both employment categories

average more trips per day than men (3.5 versus 3.2 trips per day for employed women and men; 2.8 versus 2.6 trips per day for non-working females and males). For workers, home-based shop shares are significantly higher on Saturday than during the week. Working women still make more home-based shop trips, though the share differences between men and women are less pronounced on Saturday. Though trip shares are slightly higher than weekday shares, non-working men and women have roughly the same shares of home-based shop trips on Saturday as on the weekday. By purpose, the largest difference in trip rates between males and females is for home-based shop trips, where non-working females average 0.21 more trips per day on Saturday than non-working men. The most significant share increases for travel on Saturday are for home-based social recreational trips. This increase applies to both workers and non-workers. Social/recreational trip shares for employed men and women are twice as high on Saturday than on a typical weekday. For non-working males, social/recreational trip shares are nearly 20% higher on Saturday than during the week while the increase is 14% for non-working females.

Modal shares for total trips, home-based shop trips, and home-based social/recreational trips are provided in Tables 4.3.3.1E and 4.3.3.2E by employment status and gender for travel on Saturday. For trips made on Saturday, employed women are much more likely than employed men to travel with others. Vehicle passenger shares are 18% higher and vehicle driver shares are 16% lower for working women than for employed men. Modal shares are roughly the same for all other modes for working individuals. Group travel is even more likely to occur for non-workers. Vehicle driver shares for non-employed males and females are 24.1% and 28.0% of total trips, respectively. Vehicle passenger shares for non-working males and females are much higher (61.1% for males and 59.1% for females) than for workers. Additionally, walk shares for non-workers are slightly higher than for employed individuals.

For working individuals, the majority of home-based shop trips on Saturday are made by vehicle drivers (77.4% share for men, 67.8% share for women) while non-working males and females tend to make shop trips as vehicle passengers (50.5% share for males, 50.8% share for females). Vehicle passenger and transit shares are lower for working individuals making shopping trips than for total trips while bicycle shares for shop trips are 33% higher for working men and 25% higher for working women (as compared to total trips). For non-working males, transit shares for shopping trips are slightly higher than the average for all trips. Bicycle and walk shares are lower than total trip shares for both non-employed males and females for shop trips on Saturday.

Saturday mode shares for home-based social/recreational trips show a pattern different from shop trips in that vehicle driver shares decrease for all groups while vehicle passenger shares increase. Employed women are much more likely than employed men to travel as vehicle passengers for social/recreational trips (27% difference in trip shares). Non-working males and females are equally as likely to travel as vehicle passengers for social/recreational trips on Saturday. Except for working women, transit shares are lower and walk shares are higher for social/recreational trips than for total trips.

Average Sunday trips per capita by employment status and gender are included in Tables 4.3.1F and 4.3.2F for the five general trip purposes. Trip rates for all groups are lowest on Sunday and range from 2.4 for non-employed females to 3.3 for working women. Per capita rates among non-working individuals are ever so slightly higher for males than for females (unlike the trends

for weekday and Saturday travel). For employed individuals, home-based work shares are higher on Sunday than on Saturday (13.4% for men, 10.1% for women). While working women have roughly the same share of home-based shop trips on Sunday as on Saturday, shopping shares decrease for working men and for non-workers. For both employment categories, females have higher shares and generate more home-based shop trips on Sunday than males (0.90 versus 1.1 shop trips for working individuals; 0.67 versus 0.77 shop trips per day for non-workers). Home-based social/recreational trip shares are highest for all groups on Sunday with non-employed males having the highest share (46.1% of all trips). The lowest home-based social/recreational trip share is for working women who only average a 30.0% share of social/recreational trips on Sunday.

Modal splits for total trips on Sunday by employment and gender are provided in Table 4.3.3.1F. In general, modal shares on Sunday are quite similar to modal shares on Saturday for all trip purposes. For working individuals, the largest difference between travel on Saturday and Sunday is that working men make 2.5 times more bicycle trips on Sunday (3.0% versus 1.2% on Saturday). For non-workers, transit shares are lower and bicycle shares are slightly higher for travel on Sunday. Walk shares for non-working males are 1.5% lower on Sunday than on Saturday.

Compared to weekday mode shares for total trips, vehicle driver shares for working and non-working females are lower on Sunday (12% lower for working women and 9% lower for non-working females). This decrease in vehicle driver shares is accompanied by an increase in vehicle passenger shares. Working women on Sunday make 28.0% of trips as vehicle passengers (nearly 17% higher than weekday shares). Vehicle passenger shares for non-working females are 18% higher on Sunday than during the week. Vehicle passenger shares for men also increase, though not as substantially. For working men, vehicle passenger shares on Sunday are 3.5% higher than weekday shares while non-working males have 12% higher vehicle passenger shares on Sunday. Transit shares are between 3% and 5% lower for all categories on Sunday as compared to weekday shares. The final significant difference between weekday and Sunday mode shares is for walk trips made by non-working males and females, which are 8% lower on Sunday for males and 4% lower on Sunday for females.

Modal shares for home-based shop trips are displayed in Table 4.3.3.1F while shares for home-based social/recreational trips are outlined in Table 4.3.3.2F for Sunday travel. Trends for these two trip purposes are similar to those for mode splits on Saturday. One of the most notable differences between home-based shopping trips on Saturday and Sunday is for non-working males. Vehicle driver shares for Sunday shop trips are 8% lower for non-employed men while vehicle passenger shares for this group are about 8% higher on Sunday. This suggests that non-working males are more likely to participate in group travel and to share rides for shopping trips on Sunday than they are on Saturday. Non-working males are also less likely to use transit on Sunday for shopping trips. Another notable difference is that, except for working women, bicycle and walk shares are higher on Sunday than they are on Saturday for home-based shop (other) trips.

Like shopping trips, home-based social/recreational trips on Sunday also follow the same general patterns as social/recreational trips on Saturday. However, there are a few key differences.

Firstly, bicycle shares for working men are nearly three times higher for social/recreational trips on Sunday than for Saturday trips (3.5% versus 1.2%). Secondly, walk shares for social/recreational trips are higher for workers and lower for non-workers on Sunday (as compared to Saturday travel). The most significant change is for non-employed males whose walk share on Sunday is 4% lower than for social/recreational trips pursued on Saturday. Finally, social/recreational transit shares are about 1% lower for working women on Sunday than they are on Saturday.



**Table 4.3.1****Average Weekday Trips per Person and Trip Purpose Shares by Employment Status by Gender**

Employment		Average Total Trips/Person	Share of Trips by Trip Purpose				
Status	Gender		HBW	HBSH	HBSR	HBSC	NHB
Employed	Male	3.332	39.8%	18.4%	13.4%	2.7%	25.7%
Resident	Female	3.570	32.9%	24.4%	13.8%	3.3%	25.7%
Non-Employed	Male	2.663	2.5%	27.6%	23.7%	29.2%	17.1%
Resident	Female	2.871	2.0%	34.7%	22.1%	23.0%	18.2%
Unknown	Male	3.299	14.4%	27.8%	15.6%	9.8%	32.5%
Status	Female	2.864	16.7%	27.3%	21.1%	8.2%	26.6%
	Male	3.055	26.3%	21.7%	17.1%	12.3%	22.6%
Total	Female	3.205	18.4%	29.2%	17.7%	12.5%	22.2%

*Note: Work trips made by non-employed persons may be due to miscoding of employment status  
or due to miscoding volunteer, school, etc., trips as work trips.*

**Table 4.3.2****Average Weekday Trips per Person by Trip Purpose by Employment Status by Gender**

Employment		Average Total		<u>Trips/Person</u>			
Status	Gender	Trips/Person	HBW	HBSH	HBSR	HBSC	NHB
Employed	Male	3.332	1.325	0.613	0.447	0.090	0.856
Resident	Female	3.570	1.173	0.869	0.491	0.118	0.919
Non-Employed	Male	2.663	0.066	0.736	0.630	0.776	0.454
Resident	Female	2.871	0.057	0.995	0.635	0.661	0.523
Unknown	Male	3.299	0.474	0.917	0.514	0.323	1.071
Status	Female	2.864	0.477	0.782	0.606	0.236	0.763
	Male	3.055	0.803	0.664	0.523	0.374	0.690
Total	Female	3.205	0.590	0.935	0.566	0.401	0.712

*Note: Work trips made by non-employed persons may be due to miscoding of employment status or due to miscoding volunteer, school, etc., trips as work trips.*

**Table 4.3.3****Modal Share for Weekday Work and Total Trips by Employment Status by Gender**

		<u>Home-Based Work Trips</u>							<u>Total Trips</u>						
Employment															
Status	Gender	Driver	Pssgr	Transit	Bicycle	Walk	Other		Driver	Pssgr	Transit	Bicycle	Walk	Other	School Bus
Employed	Male	76.4%	5.0%	12.1%	2.4%	3.2%	0.8%		74.8%	6.9%	7.2%	2.2%	7.9%	1.0%	0.0%
Resident	Female	74.7%	8.4%	12.2%	0.9%	3.1%	0.8%		72.5%	11.3%	6.7%	0.8%	7.9%	0.7%	0.0%
Non-Employed	Male	56.6%	14.0%	7.6%	2.8%	10.9%	8.2%		23.2%	49.8%	5.1%	1.9%	15.6%	2.5%	1.9%
Resident	Female	58.5%	14.3%	15.8%	1.2%	9.1%	1.2%		35.0%	43.3%	4.9%	1.0%	12.4%	1.5%	1.8%
Unknown	Male	58.2%	11.0%	29.2%	1.7%	0.0%	0.0%		54.1%	19.4%	7.5%	4.5%	14.5%	0.0%	0.0%
Status	Female	25.1%	35.4%	39.5%	0.0%	0.0%	0.0%		59.5%	13.4%	20.8%	0.8%	5.5%	0.0%	0.0%
	Male	75.7%	5.3%	12.0%	2.5%	3.5%	1.1%		56.2%	22.4%	6.4%	2.1%	10.7%	1.5%	0.7%
Total	Female	73.9%	8.7%	12.4%	0.9%	3.4%	0.8%		55.0%	26.3%	5.9%	0.9%	10.0%	1.1%	0.9%

*Note: Work trips made by non-employed persons may be due to miscoding of employment status or due to miscoding volunteer, school, etc., trips as work trips.*

#### **4.4 Travel by Driver's License Status**

The final demographic factor reviewed relative to regional trip rates is driver's license holding.<sup>1</sup> In this section, the impacts of driver's license status on weekday and weekend trip rates for males and females in the nine different age groups are discussed. Average total trips per capita and trip purpose shares are reported along with modal shares for total and selected trip purposes.

Prior to discussing weekday and weekend results, it is important to note the distribution of driver's license status for BATS2000 respondents. Table 4.4.2 provides these values by gender and age group. Approximately 66% of Bay Area residents have a valid driver's license. By gender, 67% of males and 65% of females are licensed. A review of age groups reveals differences between men and women in terms of driver's license holding. For both groups, minors have the lowest percentage of individuals with a license. No children under four were reported as licensed while only 6% of 5 to 17 year olds are able to legally drive. Roughly 97% of men between the ages of 40 and 64 are licensed, the highest percentage for males. For women, the 30 to 39 year old age group is the one with the highest percentage of licensed females (94%). Barring minors, the age group with the lowest percentage of licensed females is the 65 and older group where only 72% of women are licensed. For men, 18-22 year olds have the smallest percentage of licensed drivers (only 81% of men between 18 and 22 are licensed). The percentages displayed in Table 4.4.2 also suggest that women sixty and over stop driving vehicles before men sixty and over do.

#### **Weekday Trip Rates**

The results in Table 4.4.1 for average weekday trips per capita and trip purpose shares by gender and driver's license holding show that individuals with a driver's license make more trips per weekday than unlicensed individuals. Licensed males make 30% more trips per day than unlicensed males while the difference between females who can and can not drive is 41%. When compared to 1990 results, the 2000 rates by driver's license status show that the differences between persons with and without a license to drive are less pronounced than they were in 1990. In 1990, licensed males made 44% more trips than unlicensed males, and licensed females made 81% more trips than unlicensed females (Purvis, 1994).

Trip purpose shares for the five general trip purpose categories are also provided in Table 4.4.1. The largest share differences between those with and without a license are for home-based work and school trips. Licensed men and women have work shares 30% and 19% higher than unlicensed males and females. Home-based school shares are 33% and 30% higher for unlicensed males and females. Social/recreational trips for unlicensed individuals are also higher than for drivers. These results reflect the composition of the unlicensed driver category, which is primarily represented by children 17 and under (81% of unlicensed individuals). Seniors sixty and over comprise 5% of the unlicensed category. Another notable difference between licensed

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<sup>1</sup> In the 1990 Regional Travel Characteristics report for the Bay Area Travel Survey, weekday trip rates were characterized by an additional demographic variable, disability status. Disability status is not included in this report due to perceived problems with disability data in the 2000 survey based on a comparison with Census 2000 results. However, recent Census Bureau research suggests that the problem may be the inflated estimates of disability rates in Census 2000. MTC may want to re-examine the BATS2000 disability data in the future.

and unlicensed persons is that the share differences between males and females for home-based shop trips are less pronounced for the unlicensed group. Unlicensed females have only 1.4% higher shopping trip shares than unlicensed males (compared to a 10% difference for licensed drivers).

Weekday modal shares for total trips and home-based work trips are highlighted in Table 4.4.3. Licensed individuals have substantially higher vehicle driver trip shares than unlicensed persons. Vehicle driver trips made by unlicensed individuals are likely due to either a miscoding of driver's license status or of travel mode. For persons with a driver's license, the most notable differences between total trips made by men and women are for vehicle passenger and bicycle trips. Licensed men have vehicle passenger shares that are nearly 5% less than licensed women. Conversely, licensed men have bicycle shares nearly three times as high as licensed women. Men with a driver's license also have slightly higher transit shares than driving women. For non-licensed persons, the largest difference between males and females is for bicycle and transit trips; unlicensed females average 8% of trips by transit compared to 6% for unlicensed males. Males without a license have a higher bicycle share than females averaging nearly 1% more trips by bicycle. Compared to licensed individuals, those without a license have much higher walk trip shares (19% and 16% for unlicensed males and females versus 8% walk share for licensed men and women).

The distribution of mode shares for home-based work trips is also presented in Table 4.4.3. Women and men with driver's licenses have the same vehicle driver trip shares for work trips (78.4%) while licensed women have slightly higher vehicle passenger shares for work trips (7% versus 4% for licensed men). Home-based work transit shares are slightly higher for licensed men, and bicycle shares for work trips are more than three times higher for licensed men than for women. For men and women with licenses, transit shares are significantly higher for home-based work trips than for total trips. Conversely, walk trips for licensed individuals are lower for work trips than for total trips. Of the home-based work trips made by unlicensed individuals, the majority of trips are made by vehicle passenger and transit modes (66% for unlicensed men and 68% for unlicensed women).

### **Weekend Trip Rates**

Trips per capita for weekend travel are discussed in this section for trips made by licensed and unlicensed men and women. Trip purpose shares are also reviewed based on driver's license status and gender, and mode shares for total trips, home-based shop (other) trips, and home-based social/recreational trips are examined.

Saturday trips per capita for licensed and unlicensed individuals display the same patterns as weekday trips (see Table 4.4.1E). Licensed drivers make more trips per day than persons without a license. Licensed females average more trips per day than males while unlicensed males average slightly more trips per day than females. On Saturday, the differences between trip rates for licensed and unlicensed individuals are larger than for weekday travel. Males with a driver's license make 0.83 more trips per day than males without a license (34% more trips). Licensed women average 1.1 more trips per day on Saturday than unlicensed females (48% more trips).

Home-based work and school shares are significantly lower on Saturday than during the week as displayed in Table 4.4.1E. Of the work trips that do occur, licensed individuals have higher work trip shares than unlicensed individuals while the opposite is true for home-based school trips. The discrepancy between home-based shop trips made by men and women is much lower for licensed individuals on Saturday (women only have 2% higher shop trip shares than men, compared to a 10% weekday share difference). The share difference for unlicensed individuals, however, shows a larger imbalance between males and females on Saturday (females have a shop share 5% higher than males versus a 1% share difference during the week).

Social/recreational trips are nearly twice as high for licensed and unlicensed individuals on Saturday than during the week (32% share for licensed men; 31% share for licensed women; 45% share for unlicensed males; 37% share for unlicensed females).

Modal shares for total trips, home-based shop (other) trips, and home-based social/recreational trips for Saturday travel are outlined in Tables 4.4.3.1E and 4.4.3.2E. Similar to weekday shares, licensed drivers make the majority of trips as vehicle drivers while unlicensed drivers make the majority of trips as vehicle passengers. For total trips, vehicle driver shares for licensed women are almost 15% lower on Saturday than during the week (75% versus 60%). Vehicle passenger shares for all persons (male or female, licensed or unlicensed) are higher on Saturday. For licensed females and unlicensed individuals, vehicle passenger shares are significantly higher on Saturday (between 14% and 19% higher than weekday shares). Transit shares for all trips are lower on Saturday for males and females with and without a driver's license. Bicycle trips for unlicensed persons are about the same on Saturday as during the week, but shares are lower on Saturday for licensed persons. Except for licensed males, walk shares are also lower on Saturday than during the week.

Travel mode shares for home-based shop trips on Saturday, displayed in Table 4.4.3.1E, are quite similar to mode shares for total trips. For all license and gender groups, vehicle driver shares are slightly higher for Saturday shop trips, and vehicle passenger shares are slightly lower. The largest difference is that vehicle driver shares for licensed women are 10% higher for home-based shopping trips than for total trips. Another significant difference between total trips and shopping trips on Saturday is for unlicensed persons. Males without a license have bicycle shares for home-based shop trips that are six times greater than females without a license (1.9% versus 0.3%).

For home-based social recreational trips on Saturday, vehicle driver shares decrease, and vehicle passenger shares increase as compared to shares for total trips (Table 4.4.3.2E). There is a tradeoff for licensed women between vehicle driver and vehicle passenger trips for social/recreational pursuits. Licensed females make 12% fewer trips as drivers and 12% more social/recreational trips as passengers. The other notable difference between social/recreational and total trips on Saturday is for unlicensed individuals. Transit shares for home-based social/recreational trips are 1.3% and 1.7% lower for unlicensed men and women than for total trips, and bicycle shares are roughly 0.5% higher for persons without a license pursuing social/recreational trips (as compared to total trips on Saturday).

Average total trip rates per capita on Sunday are presented for licensed and unlicensed males and females in Table 4.4.1F. Trip purpose shares are also included in this table. For Sunday travel, the difference between those with and without a driver's license are even more pronounced than both weekday and Saturday trips. Licensed men make 45% more trips per day than unlicensed males while women with a driver's license average 56% more trips than females without a license. The highest per capita trip rate on Sunday is for licensed women (3.2 trips per day on Sunday). The lowest rate is for females without a license (2.1 trips per day). For all travel days, the highest home-based shop (other) share is on Sunday for individuals with a driver's license (29% share for men and 35% share for women). Unlicensed males and females dominate the home-based social/recreational category for all three travel days (weekday, Saturday, and Sunday), but shares for social/recreational trips are highest on Sunday for unlicensed individuals (46% share for males and 39% share for females).

Modal shares for total trips on Sunday show that individuals with a driver's license make the majority of trips as vehicle drivers while unlicensed persons are most often traveling as vehicle passengers (Table 4.4.3.1F). For licensed drivers, the results suggest that licensed women are more likely than licensed men to travel with others on Sunday (30% vehicle passenger share for women versus 11% share for licensed men). Transit shares are higher for males and females who do not have a driver's license, with unlicensed females having almost twice the share of transit trips as unlicensed males (4.3% versus 2.5%). Walk shares are also higher on Sunday for persons without a driver's license. Mode splits for total trips on Sunday are quite similar to shares for Saturday trips. The most notable difference is that transit shares increase across all groups from Saturday to Sunday; however, the increases are small ranging from 0.3% to 0.8%.

Mode shares for home-based shop trips on Sunday are also provided in Table 4.4.3.1F. Vehicle driver and vehicle passenger shares for licensed men and women change proportionally to one another. For licensed men, vehicle driver shop trip shares increase by 2% while vehicle passenger shop trip shares decrease by 2%. Similarly, vehicle driver shop trips for licensed women increase by 8% while vehicle passenger shop trip shares decrease by the same amount. Transit shop trip shares decrease by about 1% for licensed drivers and for males without a license (as compared to total trips). Conversely, transit shares for unlicensed females are higher for shopping trips than for total trips (7% versus 4%). The 7% transit share made by unlicensed females for shop trips is more than four times higher than the transit share for any other group. Walk shares for home-based shop trips for all groups are about 1% higher than walk shares for total trips. Bicycle shares for males and females without a driver's license are 5% and 2%, respectively. Compared to shopping trip mode shares for Saturday, bicycle and walk shares are higher on Sunday, with the largest difference being for unlicensed females. Average bicycle shares for shopping trips made by unlicensed females on Sunday are more than six times higher than Saturday shares for this group (0.3% versus 2.0%).

Table 4.4.3.2F shows that licensed males make significantly more home-based social/recreational trips as vehicle drivers than as vehicle passengers on Sunday (74% vehicle driver share versus 12% vehicle passenger share). However, greater balance exists for licensed women who make 49% of social/recreational trips as drivers and 41% as passengers. The next highest mode share for licensed drivers making social/recreational trips is for the walk mode; licensed men average 8% walk shares while licensed women average 7% walk shares. For

home-based social/recreational trips, unlicensed males have an 84.5% share of vehicle passenger trips, which is 2% higher than shares for all trips, and a 1.3% share of social/recreational transit trips (1.2% lower than total trips). A similar trend is evident for unlicensed females who have 5% higher vehicle passenger shares and 3.3% lower transit shares for social/recreational trips than for total trip shares.



**Table 4.4.1****Average Weekday Trips per Person by Trip Purpose Share by Driver's License Status by Gender**

Driver's License		Average Total	Share of Trips by Trip Purpose				
Status	Gender	Trips/Person	HBW	HBSH	HBSR	HBSC	NHB
With	Male	3.304	34.5%	21.8%	15.0%	3.4%	25.2%
License	Female	3.564	23.6%	31.6%	16.2%	4.3%	24.3%
Without	Male	2.542	4.2%	21.5%	22.8%	36.0%	15.5%
License	Female	2.532	4.8%	22.9%	21.5%	34.1%	16.8%
	Male	3.055	26.3%	21.7%	17.1%	12.3%	22.6%
Total	Female	3.205	18.4%	29.2%	17.7%	12.5%	22.2%

**Table 4.4.2****Characteristics of Persons by Driver's License Status, Age, and Gender**

Age Group	Gender	With License	Without License	Total	Percent With License
0-4	Male	0	248,530	248,530	0.0%
	Female	0	239,876	239,876	0.0%
	Total	0	488,405	488,405	0.0%
5-17	Male	40,382	654,091	694,473	5.8%
	Female	46,217	684,002	730,219	6.3%
	Total	86,599	1,338,093	1,424,692	6.1%
18-22	Male	106,849	25,428	132,276	80.8%
	Female	122,741	28,047	150,789	81.4%
	Total	229,590	53,475	283,065	81.1%
23-29	Male	250,950	14,027	264,977	94.7%
	Female	277,634	25,324	302,958	91.6%
	Total	528,584	39,351	567,935	93.1%
30-39	Male	563,554	22,046	585,599	96.2%
	Female	587,606	34,958	622,563	94.4%
	Total	1,151,159	57,003	1,208,163	95.3%
40-49	Male	541,124	19,550	560,674	96.5%
	Female	554,047	41,201	595,248	93.1%
	Total	1,095,171	60,751	1,155,923	94.7%
50-59	Male	362,537	12,632	375,168	96.6%
	Female	364,213	27,509	391,723	93.0%
	Total	726,750	40,141	766,891	94.8%
60-64	Male	92,089	2,698	94,787	97.2%
	Female	92,462	15,423	107,885	85.7%
	Total	184,552	18,120	202,672	91.1%
65 +	Male	181,330	22,396	203,725	89.0%
	Female	189,257	75,004	264,261	71.6%
	Total	370,586	97,400	467,986	79.2%
Unknown	Male	7,595	21,159	28,754	26.4%
	Female	16,229	30,345	46,575	34.8%
	Total	23,824	51,504	75,328	31.6%
TOTAL	Male	2,146,409	1,042,555	3,188,964	67.3%
	Female	2,250,407	1,201,690	3,452,097	65.2%
	Total	4,396,816	2,244,245	6,641,061	66.2%

**Table 4.4.3****Modal Share for Weekday Work and Total Trips by Driver's License Status by Gender**

Driver's License Status	Gender	<u>Home-Based Work Trips</u>						<u>Total Trips</u>						
		Driver	Pssgr	Transit	Bicycle	Walk	Other	Driver	Pssgr	Transit	Bicycle	Walk	Other	School Bus
With	Male	78.4%	3.9%	11.2%	2.5%	3.1%	1.0%	76.3%	6.3%	6.6%	2.0%	7.8%	1.0%	0.0%
License	Female	78.4%	6.7%	10.8%	0.8%	2.7%	0.7%	74.7%	11.0%	5.0%	0.7%	7.9%	0.6%	0.0%
Without	Male	16.9%	36.5%	29.4%	1.9%	12.8%	2.6%	2.2%	65.6%	6.1%	2.2%	18.5%	2.8%	2.5%
License	Female	15.3%	35.1%	33.3%	2.1%	12.1%	2.1%	2.9%	66.7%	8.1%	1.4%	15.6%	2.3%	3.0%
	Male	75.7%	5.3%	12.0%	2.5%	3.5%	1.1%	56.2%	22.4%	6.4%	2.1%	10.7%	1.5%	0.7%
Total	Female	73.9%	8.7%	12.4%	0.9%	3.4%	0.8%	55.0%	26.3%	5.9%	0.9%	10.0%	1.1%	0.9%

*Note: Vehicle driver trips made by persons without a driver's license are a probable miscoding of either driver's license status or mode of travel.*