

2006 Household Travel Survey Summary Report

2008 Release
Transport Data Centre



MINISTRY OF TRANSPORT

ABOUT THE TRANSPORT DATA CENTRE

The Transport Data Centre (TDC) of the NSW Ministry of Transport provides data on current and future demographic, employment and travel patterns. These data are used as inputs to transport and land use planning and policy making in New South Wales. The TDC's main datasets include:

- Personal travel data for the Sydney Greater Metropolitan Area from its continuous Household Travel Survey
- Commercial vehicle travel data for the Sydney Greater Metropolitan Area from the Commercial Transport Study
- Journey to Work (JTW) data for NSW derived from the Australian Bureau of Statistics (ABS) Census of Population and Housing
- Travel zone population and employment forecasts 5-yearly for the Sydney Greater Metropolitan Area
- Travel zone trip forecasts 5 yearly for the Sydney Greater Metropolitan Area

Transport Data Centre
Level 21, 227 Elizabeth St Sydney NSW 2000
GPO Box 1620 Sydney NSW 2001
Telephone: (02) 9268 2211
Facsimile: (02) 9268 2839
Email: tdcinfo@transport.nsw.gov.au
<http://www.transport.nsw.gov.au/tdc/>

Copyright (Free to share)

Users are welcome to copy, reproduce and distribute the information contained in this report for non-commercial purposes only provided acknowledgement is given to the Transport Data Centre as the source.

Disclaimer

While all care is taken in producing and publishing this work, no responsibility is taken or warranty made with respect to the accuracy of any information, data or representation. The authors (including copyright owners) and publishers expressly disclaim all liability in respect of anything done or omitted to be done and the consequences upon reliance of the contents of this publication.

NSW Ministry of Transport
Transport Data Centre 2008
ISBN 0 7313 2838 8

REPORT 2008/01

July 2008

Table of Contents

1	About this publication	1
2	Travel in Sydney – Key Indicators	3
3	Travel in Sydney – Characteristics	7
	Travel Trends	
	Purpose of travel	
	Mode of travel	
	Purpose by mode	
	Reasons for mode choice	
	Trip distance	
	Trip duration	
	Time of day of travel	
	Profile of travellers	
	Vehicles in the household	
4	Detailed Tables	25
5	Appendix	45
	The Household Travel Survey	
	Data Collected in the HTS	
	Acronyms	
	Glossary of Terms	
	Other TDC Publications	

1 About This Publication

The *2006 Household Travel Survey Summary Report* is a compilation of annual statistics on the travel behaviour of residents of the Sydney Statistical Division from 1999 to 2006. It updates last year's report with the addition of the most recent 2006 estimates produced from three years of pooled data collected from June 2004 to June 2007.

The estimates published in this report are based on data from the Transport Data Centre's (TDC) continuous Household Travel Survey (HTS). The HTS is the largest and most comprehensive source of personal travel data for the Sydney Greater Metropolitan Area. This area includes the Sydney and Illawarra Statistical Divisions and the Newcastle Statistical Subdivision. It extends from Port Stephens in the north to Shoalhaven in the south and the Blue Mountains in the west (Figure 1.1). This report focuses on the travel of residents in the Sydney Statistical Division.

This publication contains the following sections:

Section 2 Travel in Sydney – Key Indicators

This is a broad level summary containing the key indicators of travel for Sydney for the period from 1999 to 2006.

Section 3 Travel in Sydney – Characteristics

This section provides further discussion on the travel behaviour of Sydney residents with graphical illustrations. The following are covered in this section:

- Travel trends
- Purpose of travel
- Mode of travel
- Purpose by mode
- Reason for mode choice
- Trip distance and duration
- Time of day of travel
- Profile of travellers
- Vehicles in the household

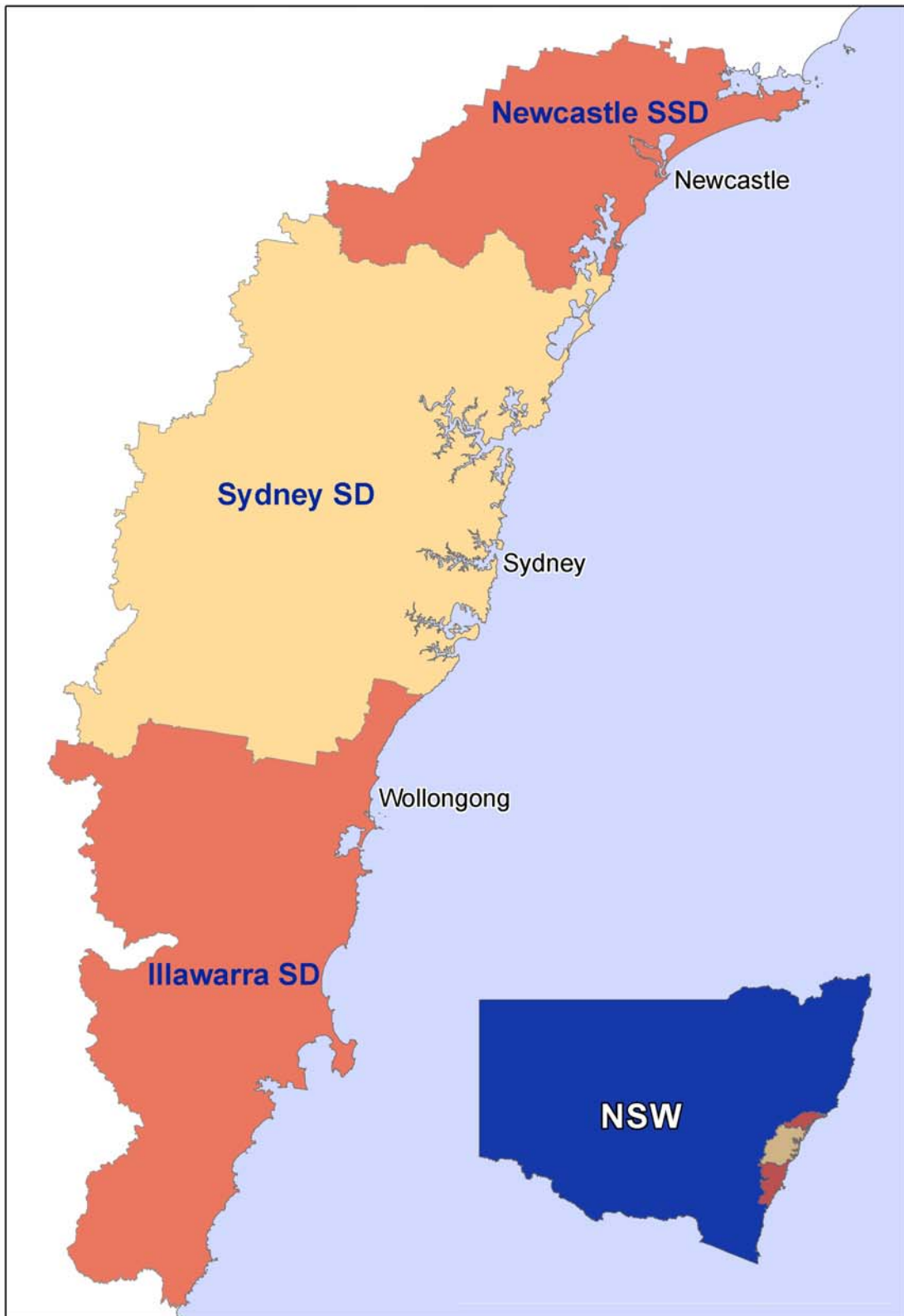
Section 4 Detailed Tables

This section presents detailed statistics summarised in Section 3 and includes data for 1991.

Appendix

This section contains background information about the HTS, its methodology, statistical validity and data items. It includes a glossary of terms for further clarification on the concepts used in this report. Information is also provided on other publications available from TDC.

Figure 1.1: Sydney Greater Metropolitan Area



2 Travel in Sydney – Key Indicators

2.1 Summary

Trend Highlights

- ❖ Weekday travel grew by 1.2% in 2006 following years of diminishing growth.
- ❖ Train trips recorded the biggest increase among all modes in 2006.
- ❖ Car driver trips increased marginally in 2006 after decreasing in the previous year.
- ❖ Car share has been slowly contracting while public transport share has been creeping up since 2004.
- ❖ VKT per capita has been declining since 2003.

Trends in travel

In 2006, Sydney residents made 15.9 million trips each weekday. This marked an upturn from the previous year (1.2%) following years of contracting growth since 2002 and a slight decrease between 2004 and 2005. On average, growth between 1999 and 2006 was about 0.7% per annum, almost on par with population change (0.9%). The average number of trips per person on an average weekday (3.77) in 2006 was consistent with the 6-year average, though slightly lower than the high per capita trip rates seen in 1999 and 2003, in particular.

Purpose of travel

Since 1999, trips for social and recreational purposes comprised the highest proportion of all weekday trips and were the fastest growing between 1999 and 2006, expanding by an average of 1.7% annually. In recent years, work and education trips registered the fastest growth between 2005 and 2006 both in terms of number of trips and distance travelled. Since 1999, commuting trips to and from work accounted for a quarter of total kilometres travelled.

Mode of travel

The growth in the number of trips and kilometres travelled in private vehicles on weekdays began to slow from 2002 up until 2005 when the first decline was seen since 1999. Between 2005 and 2006, the modest upturn in the number of driver trips (0.5%) reached the level achieved in 2002. In comparison, there was a more substantial increase in vehicle passenger trips (2.3%) during the same period. Train trips had the biggest increase among all modes during the same period (2.7%), while bus and walking trips remained fairly constant.

The share of private vehicle trips on weekdays remained high in 2006 (69.5% of all trips) but has been slightly contracting since 2004 (70.5%). Car trips constituted 79.4% of total distance travelled, also down since 2004 (80.8%). The share of public transport (train and bus) has been creeping up during the same period, slowly for trips (9.9% to 10.5%), but faster for distance travelled (14.1% to 15.6%). Walking trips on weekdays remained largely stable.

Kilometres travelled

In 2006, Sydney residents travelled a total of 150.3 million kilometres on an average weekday, a recovery from the slight downturn in 2005. This is equivalent to an increase of 1.8% between 2005 and 2006, the largest since 1999. Vehicle kilometres travelled (VKT) also grew during the same period (1.6%) after years of slow growth since 2002 and a decline in 2005. The 2006 estimate of 84.1 million VKT each weekday, however, remained below the level registered in 2003. The result is gradually declining per capita VKT since 2003.

Vehicles

Private vehicle ownership has been rising in conjunction with the Gross State Product (GSP) since 1999. The growth in the number of vehicles began to ease from 2004 culminating in an annual increase of just 0.6% between 2005 and 2006, the lowest since 1999. The result is a relatively constant average of about one and a half vehicles per household since 2004.

Trip duration

The total daily travel time for the average Sydney resident has been relatively constant since 1999, despite the gradual rise in the average travel time for trips for work purposes since 2003 (31 minutes) to 2006 (34 minutes). The average trip duration for non-work purposes (18 minutes) has been stable.

Table 2.1: Key transport indicators¹ for residents of the Sydney Statistical Division

Indicator		1999	2000	2001	2002	2003	2004	2005	2006	2002-2003	2003-2004	2004-2005	2005-2006	AAGR ² '99-'06
POPULATION³														
	Persons	3,958	4,007	4,067	4,109	4,139	4,169	4,191	4,219	0.7%	0.7%	0.5%	0.7%	0.9%
	Number of households	1,452	1,473	1,499	1,515	1,526	1,538	1,545	1,559	0.8%	0.7%	0.5%	0.9%	1.0%
trips														
TOTAL TRAVEL	Trips average weekday ('000)	15,112	15,152	15,207	15,550	15,807	15,829	15,737	15,922	1.6%	0.1%	-0.6%	1.2%	0.7%
	Trips per capita - weekday	3.82	3.78	3.74	3.78	3.82	3.80	3.75	3.77	0.9%	-0.6%	-1.1%	0.5%	-0.2%
	Trips per household -weekday	10.41	10.28	10.14	10.27	10.36	10.30	10.18	10.21	0.9%	-0.6%	-1.1%	0.3%	-0.3%
vehicles														
VEHICLES	Private vehicles ('000)	2,027	2,079	2,115	2,199	2,235	2,284	2,312	2,326	1.6%	2.2%	1.2%	0.6%	2.0%
	Vehicles per household	1.40	1.41	1.41	1.45	1.46	1.49	1.50	1.49	0.9%	1.4%	0.7%	-0.3%	0.9%
kilometres														
DISTANCE	Total travel ('000)	141,211	143,633	143,961	146,764	147,176	147,849	147,636	150,263	0.3%	0.5%	-0.1%	1.8%	0.9%
	Total travel per capita	35.7	35.8	35.4	35.7	35.6	35.5	35.2	35.6	-0.4%	-0.3%	-0.7%	1.1%	0.0%
	Average trip length	9.3	9.5	9.5	9.4	9.3	9.3	9.4	9.4	-1.3%	0.3%	0.4%	0.6%	0.1%
	Vehicle travel (VKT) ('000)	79,497	81,238	81,365	83,867	84,245	84,535	82,729	84,080	0.4%	0.3%	-2.1%	1.6%	0.8%
	VKT per capita	20.1	20.3	20.0	20.4	20.4	20.3	19.7	19.9	-0.3%	-0.4%	-2.7%	0.9%	-0.1%
minutes														
TRAVEL TIME	Average work trip duration	31	32	31	32	31	32	33	34	-3.1%	3.2%	3.1%	3.0%	1.3%
	Average non-work trip duration	18	18	18	18	18	18	18	18	0.0%	0.0%	0.0%	0.0%	0.0%
	Daily travel time per capita	79	79	79	79	79	79	79	80	-0.3%	-0.1%	-0.2%	2.0%	0.3%

¹ Data are for average weekday unless indicated otherwise. Figures in the table are rounded, but percentages are calculated from original unrounded data.

² AAGR – Annual average growth rate

³ Population and household estimates are for those residing in occupied private dwellings. These are estimated from the Household Travel Survey.

Table 2.2: Key transport indicators¹ for residents of the Sydney Statistical Division – Number of trips and distance travelled by purpose² and mode³

Indicator		1999	2000	2001	2002	2003	2004	2005	2006	2002-2003	2003-2004	2004-2005	2005-2006	AAGR ⁴ '99-'06
trips '000														
REASON FOR TRAVEL (trips)	Social/ recreation	3,249	3,295	3,359	3,607	3,667	3,706	3,605	3,656	1.7%	1.1%	-2.7%	1.4%	1.7%
	Serve passenger	2,681	2,671	2,653	2,623	2,757	2,783	2,859	2,946	5.1%	0.9%	2.7%	3.1%	1.4%
	Shopping	2,475	2,477	2,453	2,509	2,487	2,506	2,483	2,466	-0.9%	0.8%	-0.9%	-0.7%	-0.1%
	Commuting	2,258	2,299	2,262	2,370	2,379	2,386	2,382	2,469	0.3%	0.3%	-0.2%	3.7%	1.3%
	Work related business	1,470	1,500	1,567	1,518	1,498	1,420	1,395	1,360	-1.3%	-5.2%	-1.7%	-2.6%	-1.1%
	Personal business	1,196	1,173	1,198	1,194	1,237	1,252	1,220	1,193	3.6%	1.2%	-2.6%	-2.2%	0.0%
	Education/ childcare	1,332	1,313	1,279	1,284	1,303	1,319	1,324	1,375	1.5%	1.3%	0.3%	3.9%	0.5%
Other	451	423	436	444	478	456	469	457	7.8%	-4.6%	2.9%	-2.6%	0.2%	
trips '000														
MODE OF TRAVEL (trips)	Vehicle driver	7,572	7,610	7,686	7,939	8,106	8,114	7,952	7,992	2.1%	0.1%	-2.0%	0.5%	0.8%
	Vehicle passenger	3,443	3,460	3,462	3,465	3,483	3,559	3,470	3,550	0.5%	2.2%	-2.5%	2.3%	0.4%
	Train	771	781	775	775	779	768	794	815	0.5%	-1.5%	3.4%	2.7%	0.8%
	Bus	972	929	893	891	886	881	924	923	-0.6%	-0.5%	4.8%	-0.1%	-0.7%
	Walk only	2,748	2,750	2,741	2,807	2,886	2,851	2,954	2,945	2.8%	-1.2%	3.6%	-0.3%	1.0%
	Other modes	284	298	338	372	403	382	378	383	8.1%	-5.1%	-1.0%	1.3%	4.4%
kilometres '000														
REASON FOR TRAVEL (distance)	Social/recreation	30,402	31,139	30,801	32,057	31,294	31,428	30,162	30,551	-2.4%	0.4%	-4.0%	1.3%	0.1%
	Serve passenger	18,652	18,678	19,219	19,004	19,793	19,856	20,127	20,673	4.2%	0.3%	1.4%	2.7%	1.5%
	Shopping	14,416	14,769	14,744	15,259	14,923	14,996	15,021	15,306	-2.2%	0.5%	0.2%	1.9%	0.9%
	Commuting	34,517	34,963	34,913	36,754	37,153	36,461	36,747	37,912	1.1%	-1.9%	0.8%	3.2%	1.3%
	Work related business	20,008	21,383	21,527	21,541	20,788	21,115	21,611	21,515	-3.5%	1.6%	2.3%	-0.4%	1.0%
	Personal business	9,546	9,143	9,525	8,982	9,553	9,678	9,594	9,299	6.4%	1.3%	-0.9%	-3.1%	-0.4%
	Education/childcare	10,884	11,033	10,705	10,581	10,945	11,532	11,603	12,309	3.4%	5.4%	0.6%	6.1%	1.8%
Other	2,331	1,911	1,957	2,019	2,187	2,103	2,025	2,032	8.3%	-3.9%	-3.7%	0.3%	-1.9%	
kilometres '000														
MODE OF TRAVEL (distance)	Vehicle driver	79,497	81,238	81,365	83,867	84,245	84,535	82,729	84,080	0.4%	0.3%	-2.1%	1.6%	0.8%
	Vehicle passenger	30,825	31,371	31,328	31,026	30,539	31,388	31,107	31,598	-1.6%	2.8%	-0.9%	1.6%	0.4%
	Train	14,414	14,319	14,316	14,201	14,573	14,050	15,565	16,124	2.6%	-3.6%	10.8%	3.6%	1.6%
	Bus	6,656	6,732	6,570	6,516	6,206	6,215	6,567	6,641	-4.8%	0.1%	5.7%	1.1%	0.0%
	Walk only	4,294	4,255	4,242	4,517	4,613	4,687	4,643	4,562	2.1%	1.6%	-0.9%	-1.7%	0.9%
	Other modes	1,749	1,866	2,173	2,432	2,594	2,653	2,488	2,689	6.7%	2.3%	-6.2%	8.1%	6.3%

¹ Data are for average weekday. Figures in the table are rounded, but percentages are calculated from original unrounded data.

² Estimates of trip purpose are based on linked trips. Trips to return home have been reallocated to the previous 'priority' purpose (See Glossary).

³ Estimates of trip mode are based on unlinked trips except for walk trips (See Glossary).

⁴ AAGR – Annual average growth rate

Table 2.3: Key transport indicators¹ for residents of the Sydney Statistical Division– Distribution of trips and distance travelled by purpose² and mode³

Indicator		1999	2000	2001	2002	2003	2004	2005	2006
% of total trips									
REASON FOR TRAVEL (trips %)	Social/ recreation	21.5%	21.7%	22.1%	23.2%	23.2%	23.4%	22.9%	23.0%
	Serve passenger	17.7%	17.6%	17.4%	16.9%	17.4%	17.6%	18.2%	18.5%
	Shopping	16.4%	16.3%	16.1%	16.1%	15.7%	15.8%	15.8%	15.5%
	Commuting	14.9%	15.2%	14.9%	15.2%	15.0%	15.1%	15.1%	15.5%
	Work related business	9.7%	9.9%	10.3%	9.8%	9.5%	9.0%	8.9%	8.5%
	Personal business	7.9%	7.7%	7.9%	7.7%	7.8%	7.9%	7.8%	7.5%
	Education/ childcare	8.8%	8.7%	8.4%	8.3%	8.2%	8.3%	8.4%	8.6%
	Other	3.0%	2.8%	2.9%	2.9%	3.0%	2.9%	3.0%	2.9%
% of total trips									
MODE OF TRAVEL (trips %)	Vehicle driver	48.0%	48.1%	48.4%	48.9%	49.0%	49.0%	48.3%	48.1%
	Vehicle passenger	21.8%	21.9%	21.8%	21.3%	21.1%	21.5%	21.1%	21.4%
	Train	4.9%	4.9%	4.9%	4.8%	4.7%	4.6%	4.8%	4.9%
	Bus	6.2%	5.9%	5.6%	5.5%	5.4%	5.3%	5.6%	5.6%
	Walk only	17.4%	17.4%	17.2%	17.3%	17.4%	17.2%	17.9%	17.7%
	Other modes	1.8%	1.9%	2.1%	2.3%	2.4%	2.3%	2.3%	2.3%
distance %									
REASON FOR TRAVEL (distance %)	Social/ recreation	21.6%	21.8%	21.5%	21.9%	21.3%	21.4%	20.5%	20.4%
	Serve passenger	13.3%	13.1%	13.4%	13.0%	13.5%	13.5%	13.7%	13.8%
	Shopping	10.2%	10.3%	10.3%	10.4%	10.2%	10.2%	10.2%	10.2%
	Commuting	24.5%	24.4%	24.3%	25.1%	25.3%	24.8%	25.0%	25.3%
	Work related business	14.2%	15.0%	15.0%	14.7%	14.2%	14.3%	14.7%	14.4%
	Personal business	6.8%	6.4%	6.6%	6.1%	6.5%	6.6%	6.5%	6.2%
	Education/ childcare	7.7%	7.7%	7.5%	7.2%	7.5%	7.8%	7.9%	8.2%
	Other	1.7%	1.3%	1.4%	1.4%	1.5%	1.4%	1.4%	1.4%
distance %									
MODE OF TRAVEL (distance %)	Vehicle driver	57.8%	58.1%	58.1%	58.8%	59.0%	58.9%	57.8%	57.7%
	Vehicle passenger	22.4%	22.4%	22.4%	21.8%	21.4%	21.9%	21.7%	21.7%
	Train	10.5%	10.2%	10.2%	10.0%	10.2%	9.8%	10.9%	11.1%
	Bus	4.8%	4.8%	4.7%	4.6%	4.3%	4.3%	4.6%	4.6%
	Walk only	3.1%	3.0%	3.0%	3.2%	3.2%	3.3%	3.2%	3.1%
	Other modes	1.3%	1.3%	1.6%	1.7%	1.8%	1.8%	1.7%	1.8%

¹ Data are for average weekday. Figures in the table are rounded, but percentages are calculated from original unrounded data.² Estimates of trip purpose are based on linked trips. Trips to return home have been reallocated to the previous 'priority' purpose (See Glossary).³ Estimates of trip mode are based on unlinked trips except for walk trips (See Glossary).

3 Travel in Sydney - Characteristics

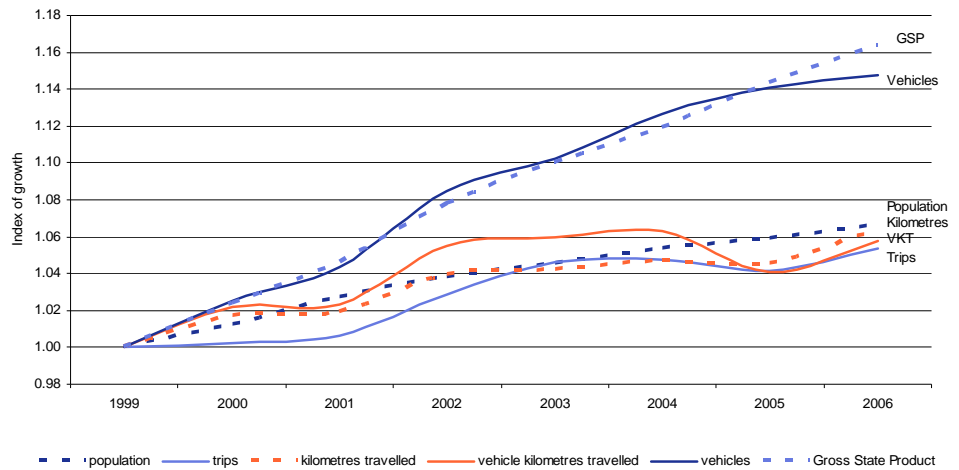
3.1 Travel trends

Total trips and VKT (vehicle kilometres travelled) have exhibited similar trends since 2002 (Figure 3.1). In 2005, both fell (VKT falling faster) for the first time since 1999. In 2006, VKT and total trips rose again in line with the continued strong Gross State Product¹ (GSP) growth. Despite the increase in VKT and trips in 2006, the growth remained below that of population. The result was a slight per capita decline in these two measures since 2004. This parallel movement of total trips and VKT is primarily driven by the fact that the majority of trips are by private vehicle.

On average, between 1999 and 2006, total trips, VKT and total distance travelled on weekdays grew annually by 0.7%, 0.8% and 0.9% respectively. This is consistent with the average annual growth in the population (0.9%).

Private vehicle ownership rose in conjunction with the rising GSP since 1999; however, between 2005 and 2006, growth in private vehicle ownership eased.

Figure 3.1: Travel by Sydney residents on an average weekday



¹ Gross State Product (GSP) was sourced from the Australian Bureau of Statistics, Cat 5220.0 - Australian National Accounts: State Accounts, 2006-07

3.2 Purpose of travel¹

Since 1999, social and recreational travel accounted for the highest proportion of trips on weekdays (Figure 3.2). These trips were also the fastest growing, increasing at an annual average rate of 1.7% between 1999 and 2006. Serve passenger,² commuting and shopping trips were the next most common on weekdays.

In terms of distance travelled, however, commuting trips comprised the highest share with 25% followed by social and recreation trips (20%) (Figure 3.3).

Figure 3.2: Proportion of trips by purpose on an average weekday

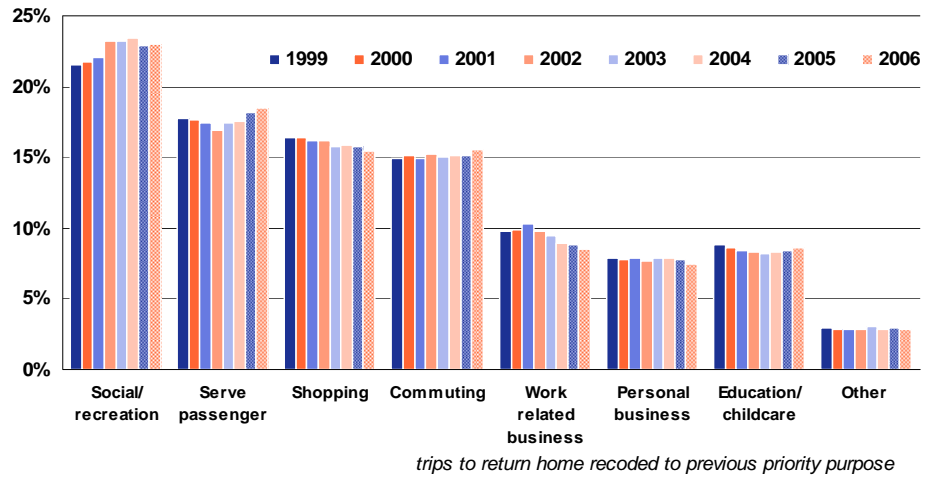
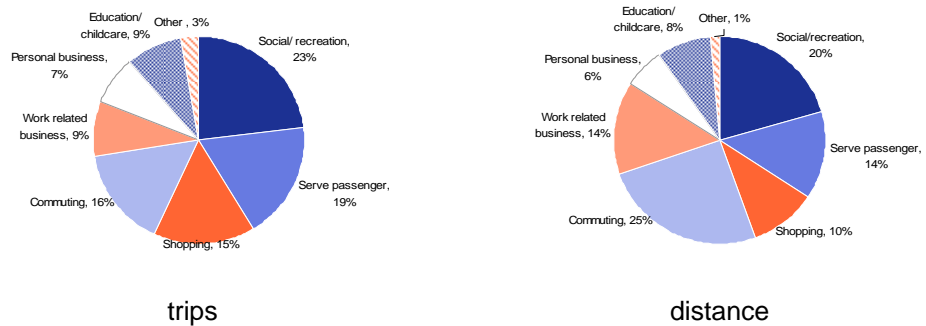


Figure 3.3: Proportion of (a) trips and (b) distance travelled by purpose on an average weekday, 2006



¹ Trip purposes are based on *linked* trips. Please refer to the definition of a 'linked trip' in the Glossary. With respect to trip purposes, trips to 'return home' are allocated to the previous priority purpose. For the rationale and explanation of this approach, refer to the Glossary under 'priority purpose'.

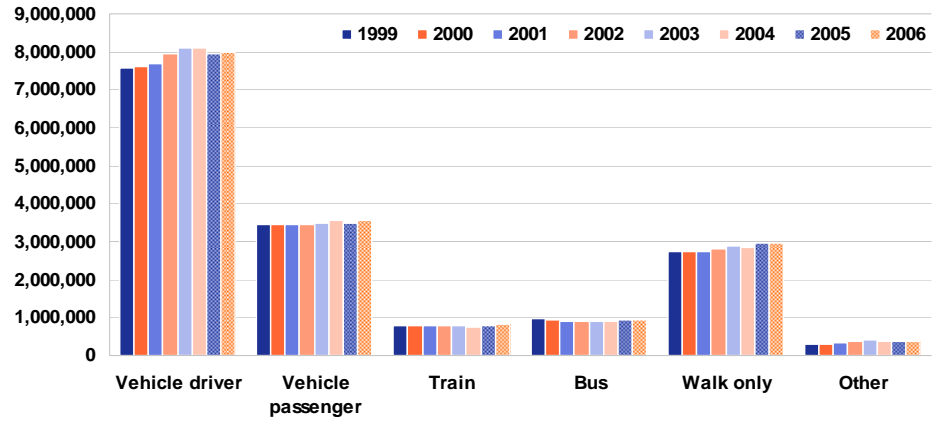
² Trips to drop off, pick-up or accompany someone (see Glossary).

3.3 Mode of travel¹

In recent years, weekday train trips grew at a faster rate (3.4% in 2005 and 2.7% in 2006) than the 7-year annual average growth rate (0.8%). Train trips had the largest growth compared to all modes in 2006.

In contrast to this, car driver trips grew only slightly in 2006 (0.5%); however, car passenger trips compensated with a 2.3% growth. In 2005, both driver and passenger car trips were down for the first time since 1999.

Figure 3.4: Number of trips by mode on an average weekday

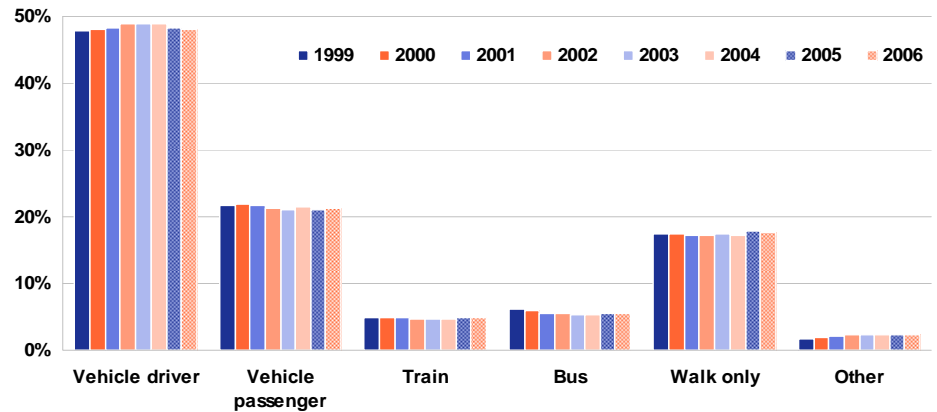


Unlinked trip legs

other includes taxi, bicycle and ferry

The mode split of weekday trips remained relatively constant. As shown in Figure 3.5, the proportion of train and bus trips have been on the rise since 2004, while the proportion of vehicle driver trips have fallen since then.

Figure 3.5: Proportion of trips by mode on an average weekday



Unlinked trip legs

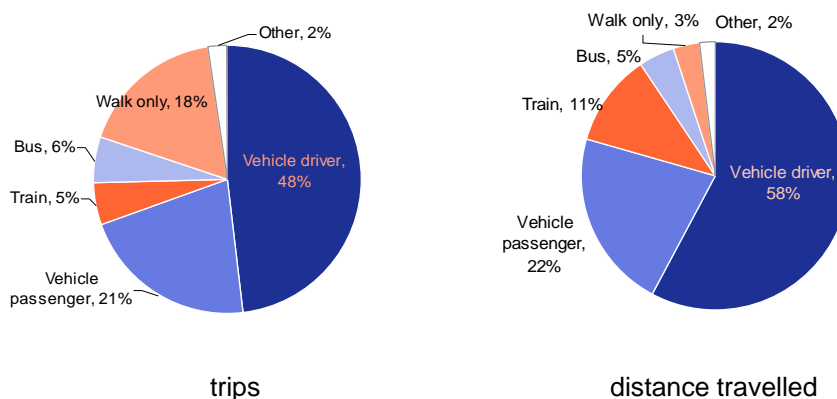
other includes taxi, ferry, bicycle etc.

¹ Mode is generally based on unlinked trips which are defined as each separate leg of linked trips (See Glossary). The exceptions are 'walk only' trips. These are trips where the *main* mode of travel is walking and exclude walking trips to and from other forms of transport.

The proportion of vehicle trips remained substantial: 48% for driver trips and 21% for passenger trips. In terms of distance travelled, their shares were greater at 58% and 22% respectively (Figure 3.6).

Train trips also accounted for a bigger percentage of total distance (11%) than of total trips (5%). Walk trips, on the other hand, comprised a much smaller proportion of distance travelled (3%) compared to its 18% share of total trips. The distance travelled by bus trips (5%) is on par with the proportion of bus trips (6%).

Figure 3.6: Proportion of (a) trips and (b) distance travelled by mode on an average weekday, 2006



3.4 Purpose by mode

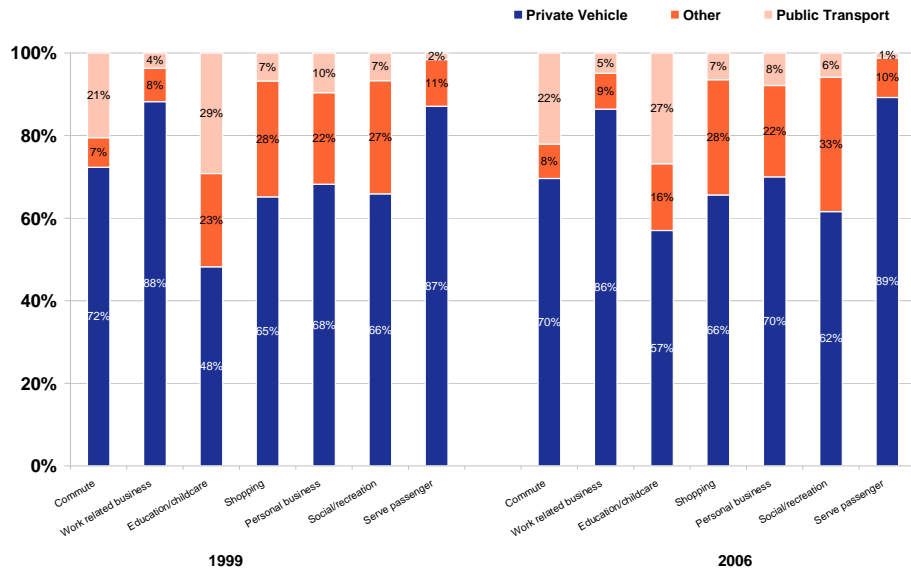
In 2006, as in previous years, private vehicles continued to be the most used mode for all trip purposes. Car use was highest for serve passenger trips (89%) and for work-related trips (86%). For commutes to work, car use was also sizeable at 70%, but public transport usage was also relatively high (22%). Private vehicle use was lowest (57%) and public transport use highest (27%) for educational trips because of the availability of free school travel to qualified students. The share of 'other modes' (mainly walking) is largest for social/recreational (33%) and shopping trips (28%).

As shown in Figure 3.7, there have been some changes in mode choice for different purposes in 2006 as compared to 1999. Some commuters have switched to public transport. Car use for social/recreational purposes is down; this may be related to the rise in petrol prices.

Figure 3.7: Proportion of trips by purpose and mode¹ on an average weekday, 1999 and 2006

Progress towards State Plan Target PT Mode Share for Commute Trips

1999	21%
2000	21%
2001	21%
2002	21%
2003	21%
2004	20%
2005	22%
2006	22%
2016 Target	25%



Compared to 1999, car usage in 2006 rose most for educational and childcare trips (9 percentage points) and declined the most for social and recreational trips (minus 4 percentage points). During this time, public transport usage grew the most for commute and work-related trips. (See Table 4.3.3 on page 30).

3.5 Reasons for mode choice

Reason for using public transport

As shown in the previous graph (Figure 3.7), 22% of trips to work (commute) were made by public transport in 2006. These respondents were asked why they travelled in this way. Their responses are summarised in Figure 3.8.

Nearly half (49%) of the public transport commuters indicated that they were avoiding parking problems, a quarter did not have a car, and a tenth said that the car was being used by someone else. These reasons for using public transport pertain to problems with private vehicle use/availability, rather than with a preference for public transport *per se*.

Another group of respondents explicitly expressed preference for public transport. Over a quarter (28%) said it was cheaper while 16% said it was faster. A fifth of respondents (21%) considered travel by public transport to be less stressful and 14% enjoyed the trip as a time to read or relax. Environmental reasons were raised by 12% of public transport commuters. A further 2% mentioned that their employer assisted with the costs of using public transport.

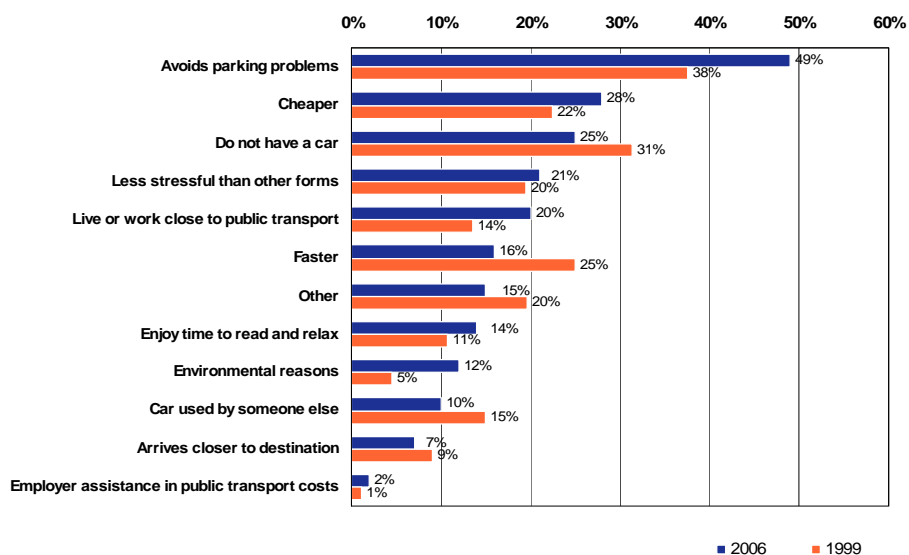
Accessibility was also important with 20% indicating they lived or worked close to public transport and 7% saying they arrived closer to their destination.

¹ 'Private vehicle' includes driver and passenger trips. 'Public transport' includes train, bus and ferry trips. 'Other' is mainly walking.

Compared to 1999, there have been differences in the prevalence of reasons cited for the use of public transport amongst commuters. Parking problems continued to be the most frequently stated; notably, the proportion has risen from 38% in 1999 to 49% in 2006.

Those citing environmental reasons in 2006 (12%) has more than doubled that in 1999 (5%), suggesting that growing awareness in this area may be influencing mode choice. Noticeably fewer respondents in 2006 said that they did not have a car or that the car was being used by someone else. Such responses are consistent with the increase in the number of vehicles per capita and the increase in the number of vehicles per household (1.40 in 1999 as compared to 1.49 in 2006).

Figure 3.8: Reasons for using public transport to travel to work¹, 1999 and 2006



¹ Percentages do not add to 100% because respondents can provide more than one reason.

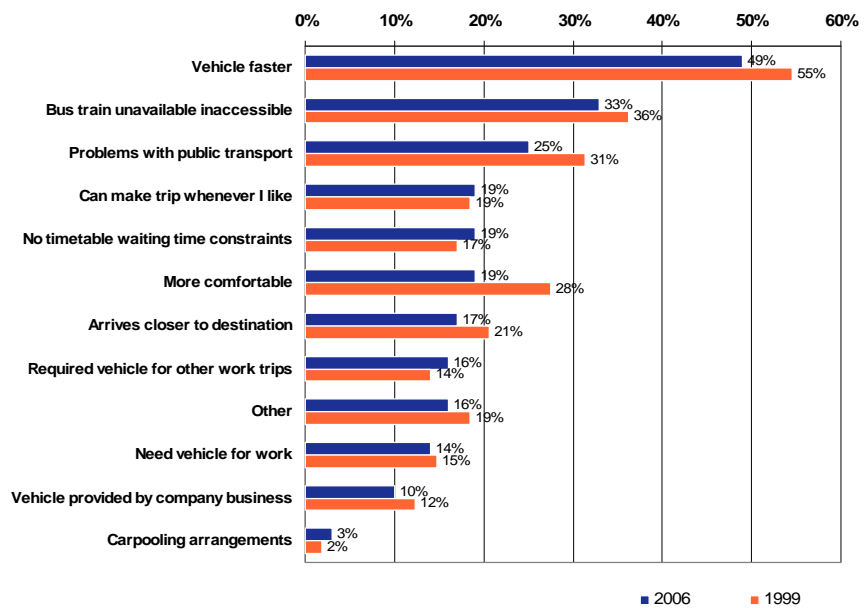
Reason for using the car

In 2006, most trips to work (70%) were made by private vehicle, as either the car driver or a car passenger (Figure 3.7). Nearly half of private vehicle commuters cited shorter travel time (49%) for using a car. Reasons relating to convenience were also commonly reported ('can make trip whenever' – 19%, 'no waiting' – 19%, 'more comfortable' – 19%, and 'arrives closer to destination' – 17%). For one in ten, the vehicle was provided by the company, while others required the vehicle for work (14%) or other work trips (16%) (Figure 3.9).

A sizeable proportion cited issues with public transport. A third said that the bus or train was unavailable or inaccessible and a quarter mentioned problems with public transport.

A small percentage (3%) used the car because of carpooling arrangements.

Figure 3.9: Reasons for using car to travel to work¹, 1999 and 2006



Customer satisfaction with public transport

Beginning in 2003, respondents who travelled by public transport in the seven days prior to their interview were asked to rate the timeliness², safety³, comfort⁴ and frequency⁵ of the various modes they had used. The majority of train and government bus users expressed satisfaction with these aspects of service. Users were particularly satisfied with the 'safety' afforded by these modes (Figure 3.10). (See Table 4.3.5 on page 31 for figures for private bus and ferry.)

Over the three most recent years, the proportion of train users satisfied with 'on time' performance sharply increased. During this same time period, the percentage of government bus customers satisfied with 'on time' performance declined slightly.

¹ Percentages do not add to 100% because respondents can provide more than one reason.

² The question asked was, "In the last seven days, did you find the <insert mode used> to be acceptably on time."

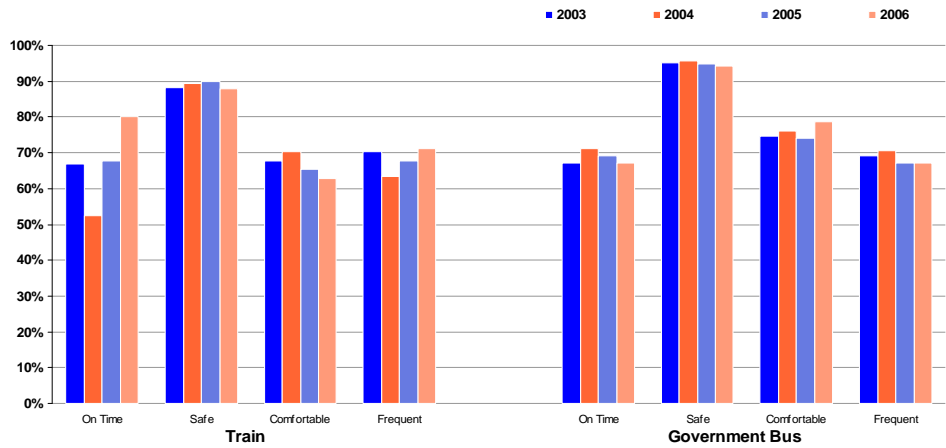
³ The question asked was, "In the last seven days, did you feel safe travelling on the <insert mode used>".

⁴ The question asked was, "In the last seven days, did you find the <insert mode used> to be comfortable".

⁵ The question asked was, "In the last seven days, did the <insert mode used> run frequently enough for your needs".

Between 2004 and 2006, the share of train riders always or mostly satisfied with 'comfort' on the trains declined. This may be related to the increase in the number of train trips undertaken by Sydney GMA residents during this period (Figure 3.4) which may impact on seat availability and crowding. However, the proportion satisfied with the frequency of trains has also gradually increased during this same 3-year period.

Figure 3.10: Proportion of respondents who said “always” or “mostly”, by year¹ and mode



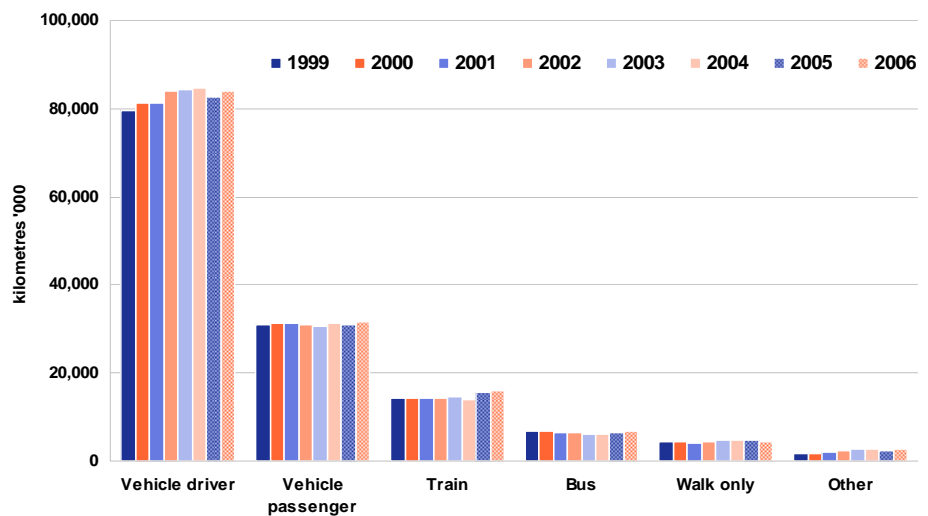
¹ Unlike data in the rest of the report, these data are not pooled; rather, they represent a single year of data. Also, these data account for residents of the GMA, rather than Sydney SD

3.6 Trip distance¹ Sydney residents travelled a total of 150.3 million kilometres on an average weekday in 2006, a substantial increase from 2005 (1.8%) compared to recent years of slow growth.

Between 2005 and 2006, distance travelled on public transport increased, particularly for trains (3.6%).

Consistent with previous years, vehicle *driver* trips accounted for the majority of total kilometres travelled – 84.1 million in 2006. The growth in VKT (vehicle kilometres travelled) between 2005 and 2006 (1.6%) was relatively high, but this was after a period of modest growth and even negative growth during the preceding three years. Total distance travelled between 2005 and 2006 for vehicle *passenger* also rose by the same magnitude (1.6%) (Figure 3.11).

Figure 3.11: Proportion of total distance travelled by mode on an average weekday



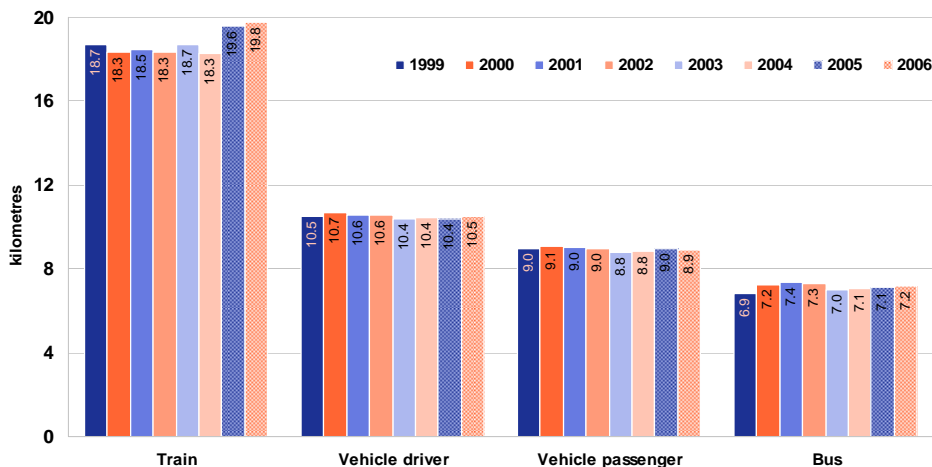
Unlinked trip legs

other includes taxi, ferry, bicycle etc.

¹ Estimates of trip distance or kilometres travelled are based on the shortest road distance between the centroids of the origin and destination zones of the trip. Road distance is used for all modes, and so should be understood as 'equivalent road distance' for non-road modes such as train. For intra-zonal trips (i.e. trips that start and end within the same travel zone) distance travelled is estimated according to the size of the zone. This methodology has limited accuracy in the estimation of very short trips, especially walk trips. TDC has derived improved distance measures based on X,Y coordinates; these data are currently being validated prior to publication.

The average trip lengths for each mode (Figure 3.12) have been fairly stable since 1999, except for train which grew much more in 2005 and 2006. Train trips were the longest with the latest average close to 20 kilometres per trip, marking an increase of 1.2 kms since 1999. This is followed by vehicle driver (11 kms) and passenger trips (9 kms). The average bus trip is about 7 kilometres long and 'walk only' trips are the shortest at about one and a half kilometres per trip.

Figure 3.12: Average trip distance by mode¹ on an average weekday

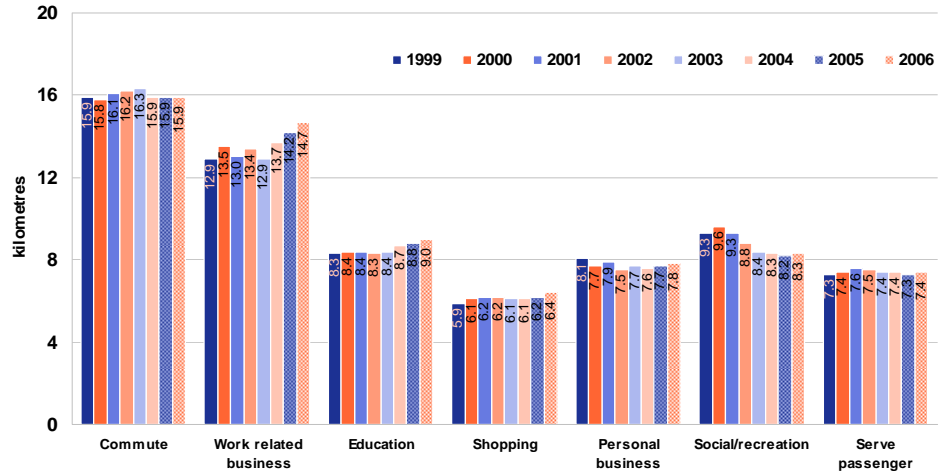


Unlinked trip legs

¹ Average distances for walk trips are not shown because the current methodology of estimating distance tends to overestimate short trips, which particularly impacts walk trips. Please refer to an example in the Glossary under 'trip distance'. Based on trip duration, walk trips are most likely to be about 700 metres on average. TDC has derived improved distance measures based on X,Y coordinates; these data are currently being validated prior to publication.

Work trips were on average much longer than trips for non-work purposes. In 2006, the average commute trip was the longest, with an average of 16 kilometres, followed by other work related trips, with 15 kilometres. Non-work trips were shorter and ranged from 6 kilometres (shopping trips) to 9 kilometres (education and childcare trips) (Figure 3.13). This is consistent with the fact that non-work trips are largely by walking and such trips would therefore bring down the average trip distance.

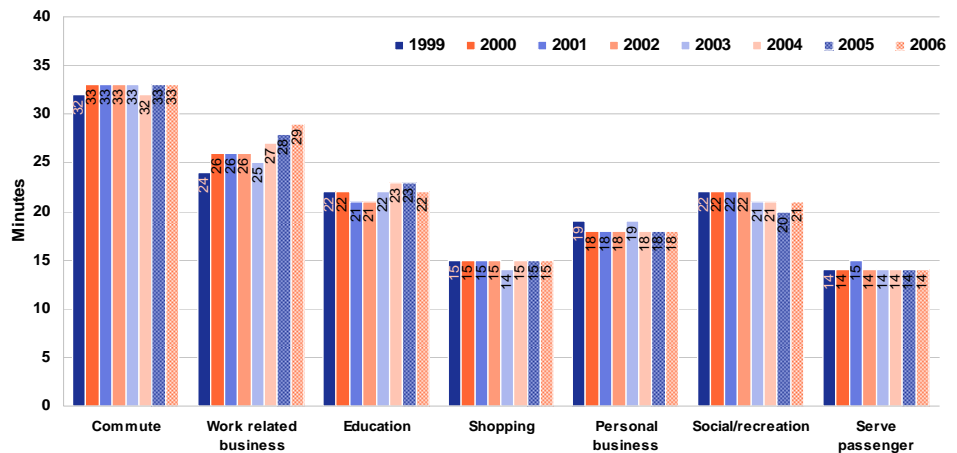
Figure 3.13: Average trip distance by purpose on an average weekday



3.7 Trip duration¹

The average trip duration by purpose is in line with the preceding findings for average trip lengths. Trips for work purposes such as commute and work-related travel took longer on average than non-work trips (Figure 3.14). However, the difference is not as pronounced compared to the disparity in average trip lengths. The average durations of non-work trips were relatively close to that of work trips despite being shorter in distance. Again, this is largely due to the prevalence of slower non-motorised modes, such as walking, in trips for non-work purposes.

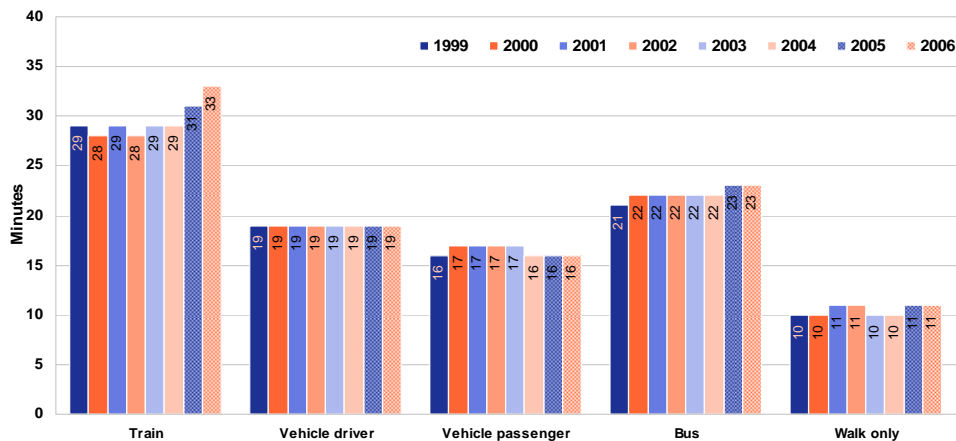
Figure 3.14: Average trip duration by purpose on an average weekday



¹ The trip duration by purpose is based on the travel time for the *whole journey*, which may be a trip or a series of trips undertaken from an origin to the next purpose. This includes the travel time for each leg of the journey which may include one or more different modes. The trip duration by mode is based on each individual leg of the journey.

Some differences emerge between the average trip duration (Figure 3.15) and average trip distances (Figure 3.12) by *mode*. Train trips were the longest in duration, as they were in distance, and both have increased in recent years. Bus trips, on the other hand, were next longest in travel time – exceeding that of the private vehicle – despite having a shorter average trip distance¹.

Figure 3.15: Average trip duration by mode on an average weekday



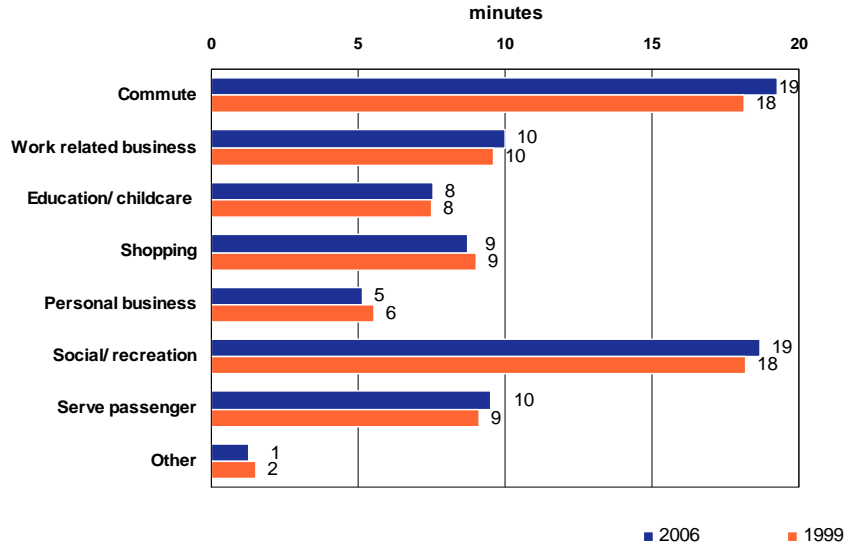
An average Sydney resident spent 80 minutes travelling on a typical weekday. Commuting and social/recreational trips together accounted for roughly half of this travel time budget with 19 minutes allocated to each activity respectively (Figure 3.16)². Commuting trips took a sizeable proportion of a person’s travel time because of their relatively long trip duration compared to other trip purposes (Figure 3.14). Social and recreational trips, on the other hand, account for a large proportion of all trips.

¹ This time-distance disparity for bus trips may be partly artificial since the method of estimating trip distance is likely to understate bus trip length. Road distances in the HTS are estimated based on the *shortest* route between the origin travel zone centroid and the destination travel zone centroid, whereas actual bus routes usually do not follow the most direct route. However, some disparity would be expected as bus stopping patterns add to the duration of bus trips relative to distance. Walk trips are also apparently too fast because of the overestimation of walk trip length.

² Figure 3.16 shows how the travel time budget is spent on the various purposes *on average* per person. This concept is very different from that of the average trip duration by purpose. Since not all persons undertake all the different types of trips, eg. not all are workers who commute or students who make trips for education, the average time per person for each purpose tends to be lower than the average *trip* duration by purpose shown in Figure 3.14.

From 1999 to 2006, not only has the total travel time per person remained fairly constant (roughly 80 minutes), so has the break-down of travel time by purpose (Figure 3.16).

Figure 3.16: Breakdown of a person’s average travel time by purpose on an average weekday, 1999 and 2006

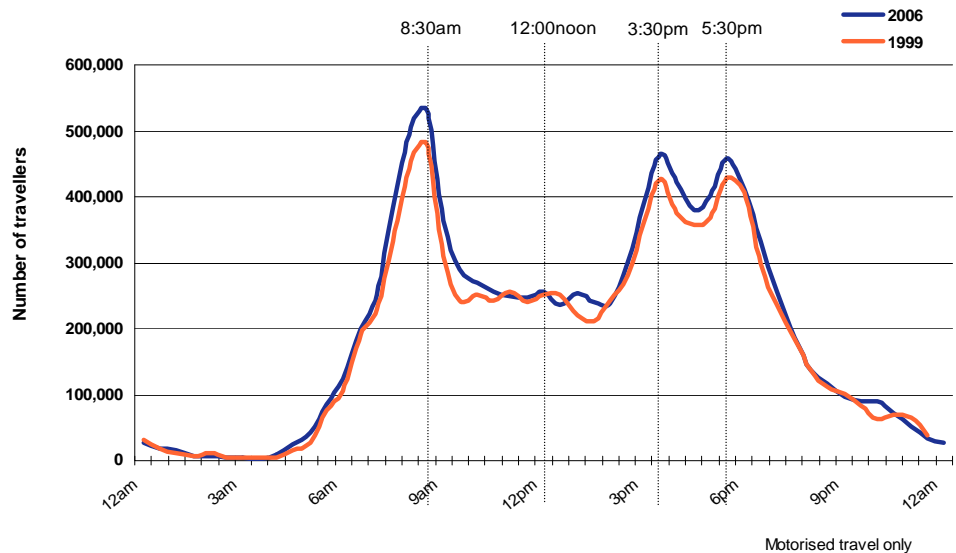


3.8 Time of day of travel

Figure 3.17 shows the number of Sydney residents who travelled by *motorised* modes by time of day during weekdays in 1999 and 2006. This analysis identifies three apparent peak periods on weekdays: the morning peak around 8:30 am, the first afternoon peak at 3:30 pm and the evening peak at 5:30 pm. It was also around these periods when the *growth* in demand was concentrated.

Progress towards State Plan Target	
PT Mode Share for Peak Hour Commute Trips to/from CBD ¹	
1999	73%
2000	73%
2001	73%
2002	74%
2003	71%
2004	71%
2005	72%
2006	75%
2016 Target 75%	

Figure 3.17: Number of people travelling by time of day on an average weekday (motorised modes only), 1999 and 2006

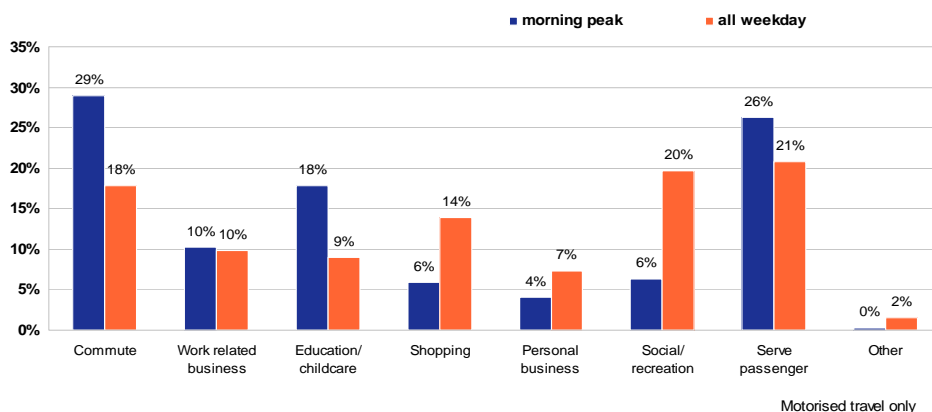


¹ This is the share of public transport (train, bus and ferry) for commute trips to the CBD during the morning peak and commute trips from the CBD during the afternoon peak.

Figure 3.18 shows the distribution of *motorised* trips by purpose during the morning peak (6:30 am to 9:30am) in comparison to the entire weekday. Commuting trips had the largest proportion in the morning peak period with 29%. The percentage of serve passenger trips followed closely behind, accounting for 26% of morning peak trips. These trips were generally drop-offs to or part of the commute to work or school. Trips for education/childcare during the morning peak were also noteworthy, with a share of 18%. This is double its share of total weekday travel.

Over half (57%) of all trips in the morning peak were for purposes which may be considered non-discretionary (e.g., commuting to work, work-related purposes, education and child care). A smaller, but still noteworthy, proportion of trips (16%) was for what are generally considered to be 'discretionary purposes' (e.g., shopping, social recreation, personal business)¹. The remainder of the trips were primarily to 'serve passenger'.

Figure 3.18: Proportion of *motorised* trips by purpose, morning peak² vs all weekday, 2006



¹ 'Discretionary' and 'non-discretionary' are used with respect to time of day travelled. 'Discretionary' travel is generally associated with fixed times, like starting school at 9am; 'non-discretionary' travel is usually more flexible as to the time of day travelled.

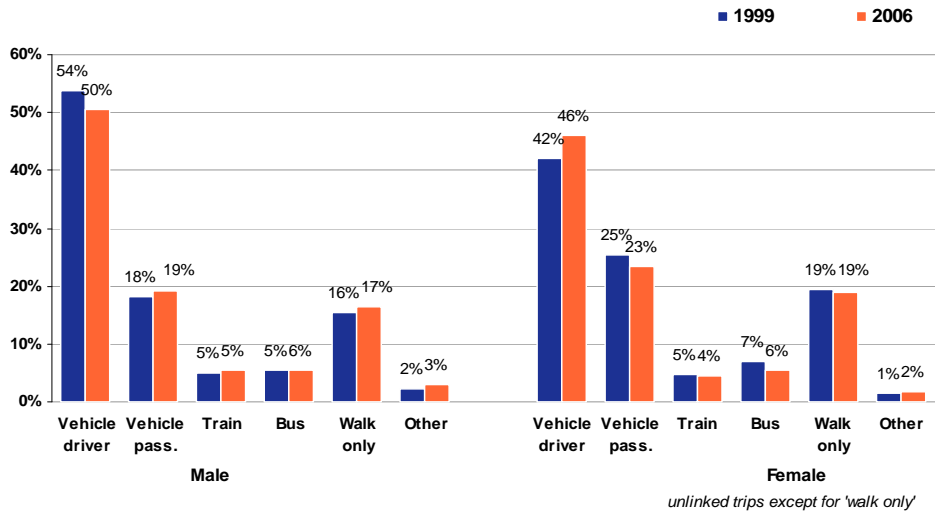
² Between 6:31 am and 9:30 am

3.9 Profile of travellers

By Gender

The overall pattern of mode usage by males and females was largely maintained since 1999 (Figure 3.19). Males still drove proportionally more, walked and took public transport (especially bus) less frequently than females; however, the gap between the genders has started to narrow. There has been a decline in the share of driver trips and a rise in the percentage of walking and passenger trips among men. Conversely, there has been an increase in the share of vehicle driver trips among women matched by a decline in vehicle passenger and public transport trips.

Figure 3.19: Proportion of trips by mode used and gender, 1999 and 2006



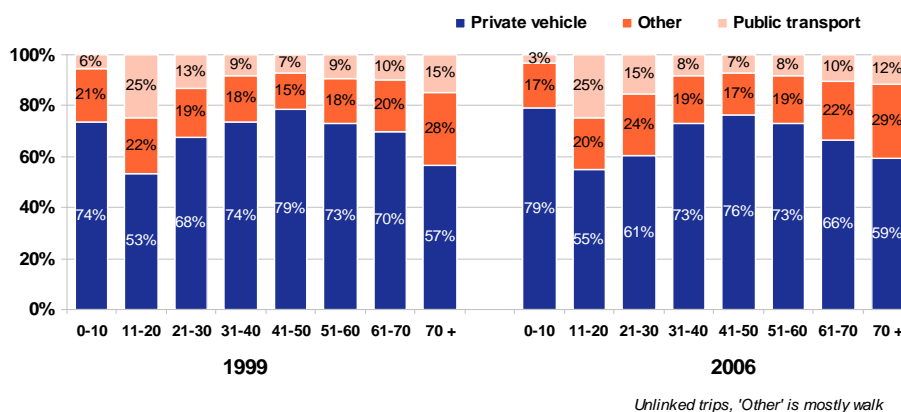
By Age

As in previous years, private vehicles were used the most in all age groups. In 2006, private vehicle use was lowest for those aged 11 to 30 and those over 60 (Figure 3.20). Car use was the highest for the middle age groups (31 to 60 years).

Among those aged 11 to 20, the shares of public transport and other modes were comparatively greater than for other age groups mainly because of their usage for educational purposes. For those aged 21 to 30, the percentages of public transport and other modes were also higher than other groups due to relatively limited access to the private vehicle.

The use of other modes (mostly walking) amongst those in their 20s was reasonably high in 2006, especially when compared to 1999. Walking and other modes were highest amongst the oldest age group (70 years and over).

Figure 3.20: Proportion of trips by mode and age group on an average weekday, 1999 and 2006



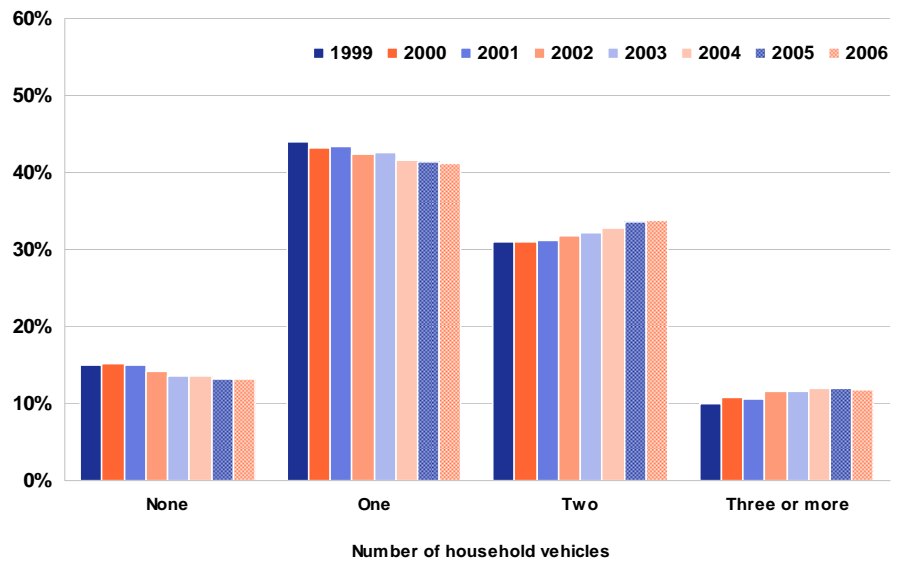
Between 1999 and 2006, mode usage in the different age groups has been largely unchanged. The most significant change was in those aged 21 to 30 which showed a contraction in the proportion of private vehicle trips accompanied by an increase in walking and public transport use. A similar change occurred in those aged 61 to 70 but the magnitude was not as great. Among children under 10-years old, there appeared to be an expansion in the share of car trips corresponding with decreases in the use of public transport and other modes. This is explained by an increased tendency for children to be driven to school.

3.10 Vehicles

Since 1999, the number of private motor vehicles registered to households in the Sydney SD has risen each year by an average annual growth of 2% to 2.33 million vehicles in 2006. Between 2005 and 2006, there was an apparent slowdown in growth of just 0.6%.

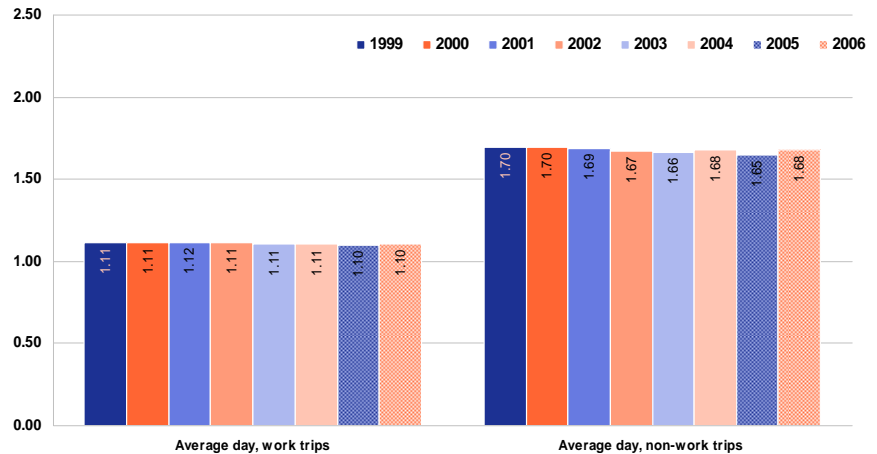
In terms of the distribution of households by number of vehicles, Figure 3.21 shows that the proportion of households with two or more vehicles continued to expand, while the proportion of households with one or none continued to fall. In recent years, the distribution has stabilised; the result is that the average number of vehicles per household has remained relatively constant at 1.5. Incidentally, household size has also remained constant (2.7 people per household) during this time period.

Figure 3.21: Proportion of households by number of household vehicles



Vehicle occupancy rates have been stable overall since 1999; however, vehicle sharing varied by trip purpose (Figure 3.22). Non-work trips have a higher vehicle occupancy rate (1.68) than work trips (1.10). Non-work trips, such as social, recreational and shopping trips, are often shared by several members of a household.

Figure 3.22: Average vehicle occupancy per trip



Detailed Tables



4.1 Total travel

Table 4.1.1: Total population, households and number of travellers

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
					'000					
Population ¹	3,569	3,958	4,007	4,067	4,109	4,139	4,169	4,191	4,219	1.1%
ERP ²	3,673	4,020	4,069	4,128	4,171	4,202	4,232	4,255	4,284	1.0%
Travellers	2,901	3,309	3,328	3,377	3,447	3,489	3,553	3,559	3,598	1.4%
Households	1,293	1,452	1,473	1,499	1,515	1,526	1,538	1,545	1,559	1.3%
Av. household size	2.76	2.73	2.72	2.71	2.71	2.71	2.71	2.71	2.71	-0.1%

Table 4.1.2: Number of trips³

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
					'000					
Average weekday	13,148	15,112	15,152	15,207	15,550	15,807	15,829	15,737	15,922	1.3%
Av. weekday AM peak	2,692	3,143	3,124	3,087	3,181	3,233	3,245	3,265	3,368	1.5%
Total weekday (M – F)	65,740	75,561	75,760	76,034	77,750	79,033	79,145	78,686	79,610	1.3%

Table 4.1.3: Trip rates⁴ for persons and households (average weekday)

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
Per person	3.68	3.82	3.78	3.74	3.78	3.82	3.80	3.75	3.77	0.2%
Per household	10.17	10.41	10.28	10.14	10.27	10.36	10.30	10.18	10.21	0.0%

Note: Figures in the tables are rounded, but percentages are calculated from original unrounded data.

¹ Population reported is derived from the HTS and is for residents of private dwellings only.

² ERP (ABS Estimated Resident Population) is higher than HTS population as it includes people in non-private dwellings.

³ Number of trips is based on *linked* trips. Please refer to the definition of a linked trip in the Glossary.

⁴ Person trip rates are estimated for the total population including those who did not make a trip.

4.2 Purpose of travel

Table 4.2.1: Number of trips by purpose¹ (average weekday)

Purpose	1991	1999	2000	2001	2002 '000	2003	2004	2005	2006	Annual growth % 91-06
Social/ recreation	2,710	3,249	3,295	3,359	3,607	3,667	3,706	3,605	3,656	2.0%
Serve passenger	2,082	2,681	2,671	2,653	2,623	2,757	2,783	2,859	2,946	2.3%
Shopping	2,329	2,475	2,477	2,453	2,509	2,487	2,506	2,483	2,466	0.4%
Commuting	1,980	2,258	2,299	2,262	2,370	2,379	2,386	2,382	2,469	1.5%
Work related business	1,392	1,470	1,500	1,567	1,518	1,498	1,420	1,395	1,360	-0.2%
Personal business	1,083	1,196	1,173	1,198	1,194	1,237	1,252	1,220	1,193	0.7%
Education/ childcare	1,128	1,332	1,313	1,279	1,284	1,303	1,319	1,324	1,375	1.3%
Other	445	451	423	436	444	478	456	469	457	0.2%
Total	13,148	15,112	15,152	15,207	15,550	15,807	15,829	15,737	15,922	1.3%

Table 4.2.2: Proportion of trips by purpose (average weekday)

Purpose	1991	1999	2000	2001	2002	2003	2004	2005	2006
Social/ recreation	20.6%	21.5%	21.7%	22.1%	23.2%	23.2%	23.4%	22.9%	23.0%
Serve passenger	15.8%	17.7%	17.6%	17.4%	16.9%	17.4%	17.6%	18.2%	18.5%
Shopping	17.7%	16.4%	16.3%	16.1%	16.1%	15.7%	15.8%	15.8%	15.5%
Commuting	15.1%	14.9%	15.2%	14.9%	15.2%	15.0%	15.1%	15.1%	15.5%
Work related business	10.6%	9.7%	9.9%	10.3%	9.8%	9.5%	9.0%	8.9%	8.5%
Personal business	8.2%	7.9%	7.7%	7.9%	7.7%	7.8%	7.9%	7.8%	7.5%
Education/ childcare	8.6%	8.8%	8.7%	8.4%	8.3%	8.2%	8.3%	8.4%	8.6%
Other	3.4%	3.0%	2.8%	2.9%	2.9%	3.0%	2.9%	3.0%	2.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Trip purposes are based on *linked* trips. Please refer to the definition of a linked trip in the Glossary. When analysing trip purposes, trips to return home are allocated to the previous 'priority purpose'. For an explanation of this approach, refer to the Glossary under 'priority purpose'.

4.3 Mode of travel

Table 4.3.1: Number of trips by mode¹ (average weekday)

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
Vehicle driver	6,366	7,572	7,610	7,686	7,939	8,106	8,114	7,952	7,992	1.5%
Vehicle passenger	2,850	3,443	3,460	3,462	3,465	3,483	3,559	3,470	3,550	1.5%
Total vehicle	9,216	11,015	11,070	11,148	11,405	11,589	11,674	11,422	11,542	1.5%
Train	691	771	781	775	775	779	768	794	815	1.1%
Public Bus	510	555	552	558	559	554	561	579	580	0.9%
Private Bus	407	416	377	335	332	332	321	344	342	-1.1%
Ferry	33	38	34	37	44	47	47	38	37	0.8%
Total public transport	1,641	1,780	1,743	1,706	1,710	1,713	1,696	1,756	1,775	0.5%
Walk only	2,700	2,748	2,750	2,741	2,807	2,886	2,851	2,954	2,945	0.6%
Bicycle	98	90	85	101	113	124	114	116	114	1.0%
Taxi	103	109	118	115	117	119	123	115	121	1.1%
Other	20	48	62	83	98	113	98	109	111	12.3%
Total	13,777	15,789	15,828	15,895	16,251	16,542	16,556	16,472	16,608	1.3%

Table 4.3.2: Proportion of trips by mode (average weekday)

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006
Vehicle driver	46.2%	48.0%	48.1%	48.4%	48.9%	49.0%	49.0%	48.3%	48.1%
Vehicle passenger	20.7%	21.8%	21.9%	21.8%	21.3%	21.1%	21.5%	21.1%	21.4%
Total vehicle	66.9%	69.8%	69.9%	70.1%	70.2%	70.1%	70.5%	69.3%	69.5%
Train	5.0%	4.9%	4.9%	4.9%	4.8%	4.7%	4.6%	4.8%	4.9%
Public Bus	3.7%	3.5%	3.5%	3.5%	3.4%	3.3%	3.4%	3.5%	3.5%
Private Bus	3.0%	2.6%	2.4%	2.1%	2.0%	2.0%	1.9%	2.1%	2.1%
Ferry	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%
Total public transport	11.9%	11.3%	11.0%	10.7%	10.5%	10.4%	10.2%	10.7%	10.7%
Walk only	19.6%	17.4%	17.4%	17.2%	17.3%	17.4%	17.2%	17.9%	17.7%
Bicycle	0.7%	0.6%	0.5%	0.6%	0.7%	0.7%	0.7%	0.7%	0.7%
Taxi	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Other	0.1%	0.3%	0.4%	0.5%	0.6%	0.7%	0.6%	0.7%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Mode figures are based on unlinked trip legs. Ferry, bicycle, taxi and other mode estimates are subject to high standard errors due to the small sample sizes in the HTS.

Table 4.3.3: Proportion of trips by mode and purpose¹ (average weekday)

	Purpose	Private Vehicle ²	Public Transport ³	Other ⁴	Total
1991	Commute	70.4%	21.2%	8.4%	100.0%
	Work related business	84.9%	5.5%	9.5%	100.0%
	Education/childcare	41.1%	29.5%	29.5%	100.0%
	Shopping	60.4%	7.3%	32.3%	100.0%
	Personal business	64.0%	9.2%	26.8%	100.0%
	Social/recreation	66.4%	6.3%	27.3%	100.0%
	Serve passenger	85.1%	1.9%	13.0%	100.0%
1999	Commute	72.3%	20.5%	7.2%	100.0%
	Work related business	88.2%	3.7%	8.1%	100.0%
	Education/childcare	48.2%	29.2%	22.6%	100.0%
	Shopping	65.2%	6.8%	28.1%	100.0%
	Personal business	68.2%	9.6%	22.2%	100.0%
	Social/recreation	65.9%	6.7%	27.4%	100.0%
	Serve passenger	87.1%	1.6%	11.3%	100.0%
2000	Commute	71.5%	20.8%	7.7%	100.0%
	Work related business	88.2%	4.1%	7.7%	100.0%
	Education/childcare	49.6%	27.0%	23.4%	100.0%
	Shopping	66.3%	6.8%	27.0%	100.0%
	Personal business	68.0%	9.3%	22.6%	100.0%
	Social/recreation	65.7%	6.4%	27.9%	100.0%
	Serve passenger	87.1%	1.8%	11.2%	100.0%
2001	Commute	70.5%	21.2%	8.3%	100.0%
	Work related business	87.5%	4.0%	8.6%	100.0%
	Education/childcare	51.9%	25.2%	22.9%	100.0%
	Shopping	65.5%	7.1%	27.4%	100.0%
	Personal business	70.4%	8.8%	20.9%	100.0%
	Social/recreation	65.5%	5.9%	28.6%	100.0%
	Serve passenger	88.4%	1.8%	9.8%	100.0%
2002	Commute	71.0%	21.1%	8.0%	100.0%
	Work related business	88.9%	3.7%	7.4%	100.0%
	Education/childcare	52.9%	25.1%	22.0%	100.0%
	Shopping	65.9%	6.9%	27.3%	100.0%
	Personal business	70.0%	8.5%	21.4%	100.0%
	Social/recreation	65.2%	5.8%	28.9%	100.0%
	Serve passenger	88.3%	1.7%	10.0%	100.0%
2003	Commute	71.3%	20.7%	7.9%	100.0%
	Work related business	88.6%	3.2%	8.2%	100.0%
	Education/childcare	53.0%	25.9%	21.1%	100.0%
	Shopping	65.2%	6.5%	28.3%	100.0%
	Personal business	70.6%	8.5%	20.9%	100.0%
	Social/recreation	64.5%	5.9%	29.5%	100.0%
	Serve passenger	88.2%	1.6%	10.3%	100.0%
2004	Commute	72.5%	20.1%	7.4%	100.0%
	Work related business	88.7%	3.5%	7.8%	100.0%
	Education/childcare	54.4%	26.5%	19.1%	100.0%
	Shopping	66.3%	6.4%	27.2%	100.0%
	Personal business	71.8%	7.6%	20.6%	100.0%
	Social/recreation	64.2%	5.9%	29.9%	100.0%
	Serve passenger	88.2%	1.3%	10.5%	100.0%
2005	Commute	70.3%	21.8%	7.9%	100.0%
	Work related business	86.7%	4.4%	8.9%	100.0%
	Education/childcare	53.9%	27.3%	18.9%	100.0%
	Shopping	65.3%	6.7%	28.0%	100.0%
	Personal business	71.2%	7.3%	21.5%	100.0%
	Social/recreation	62.1%	5.9%	31.9%	100.0%
	Serve passenger	88.4%	1.2%	10.4%	100.0%
2006	Commute	69.7%	22.1%	8.3%	100.0%
	Work related business	86.4%	4.9%	8.7%	100.0%
	Education/childcare	57.0%	26.8%	16.2%	100.0%
	Shopping	65.6%	6.5%	27.9%	100.0%
	Personal business	70.0%	7.9%	22.1%	100.0%
	Social/recreation	61.6%	5.9%	32.5%	100.0%
	Serve passenger	89.2%	1.2%	9.6%	100.0%

¹ The data used in this table is based on *linked* trips. In the analysis of trip purposes, trips to return home are allocated to the previous priority purpose. Mode is based on the 'priority mode' of the linked trip. For further details, please refer to the Glossary.

² Includes private vehicle driver and passenger trips.

³ Includes train, bus and ferry.

⁴ 'Other' is predominantly walking.

Table 4.3.4: Reasons for travelling to work by public transport on weekdays, 2006

Reason	Percent ¹
Avoids parking problems	49%
Cheaper	28%
Do not have a car	25%
Less stressful than other forms	21%
Live or work close to public transport	20%
Faster	16%
Other	15%
Enjoy time to read and relax	14%
Environmental reasons	12%
Car used by someone else	10%
Arrives closer to destination	7%
Employer assistance in public transport costs	2%

Table 4.3.5: Satisfaction with modes – Proportion of respondents² saying “always” or “mostly”

Year	Mode	On Time	Safe	Comfortable	Frequent
2003	Train	67%	88%	68%	70%
	Government Bus	67%	95%	75%	69%
	Private Bus	76%	93%	82%	66%
	Ferry	95%	99%	95%	80%
2004	Train	52%	89%	70%	63%
	Government Bus	71%	96%	76%	71%
	Private Bus	78%	94%	85%	72%
	Ferry	93%	96%	95%	76%
2005	Train	68%	90%	65%	68%
	Government Bus	69%	95%	74%	67%
	Private Bus	76%	94%	83%	69%
	Ferry	90%	99%	97%	76%
2006	Train	80%	88%	63%	71%
	Government Bus	67%	94%	79%	67%
	Private Bus	74%	97%	85%	68%
	Ferry	90%	100%	93%	82%

¹ Respondents could give more than one response, therefore percentages add to more than 100%.

² In Sydney GMA

Table 4.3.6: Reasons for travelling to work by car on weekdays, 2006

Reason	Percent
Faster	49%
Bus train unavailable inaccessible	33%
Problems with public transport	25%
Can make trip whenever I like	19%
More comfortable	19%
No timetable waiting time constraints	19%
Arrives closer to destination	17%
Other	16%
Required vehicle for other work trips	16%
Need vehicle for work	14%
Vehicle provided by company business	10%
Carpooling arrangements	3%

4.4 Trip distance¹

Table 4.4.1: Distance travelled

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
Average Weekday	<i>Average distance (km)</i>									
Av. trip length	9.1	9.3	9.5	9.5	9.4	9.3	9.3	9.4	9.4	0.2%
Av. km per person	33.6	35.7	35.8	35.4	35.7	35.6	35.5	35.2	35.6	0.4%
Av. VKT per person	17.9	20.1	20.3	20.0	20.4	20.4	20.3	19.7	19.9	0.7%
Average Weekday	<i>Total distance ('000 km)</i>									
Total km	119,947	141,211	143,633	143,961	146,764	147,176	147,849	147,636	150,263	1.5%
Total VKT	64,038	79,497	81,238	81,365	83,867	84,245	84,535	82,729	84,080	1.8%
Average Day										
Total km	117,782	138,469	140,228	140,409	143,697	144,268	144,885	144,345	148,769	1.6%
Total VKT	60,162	75,033	76,132	76,077	78,504	79,044	79,333	79,099	80,947	2.0%

¹ The accuracy of distance estimates will be significantly enhanced in future summary reports when TDC implements their new methodology for measuring distance based on XY coordinates. These data are currently being validated prior to publication.

Table 4.4.2: Distance travelled by mode (average weekday)

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
<i>Total distance ('000 km)</i>										
Vehicle driver	64,038	79,497	81,238	81,365	83,867	84,245	84,535	82,729	84,080	1.8%
Vehicle passenger	25,983	30,825	31,371	31,328	31,026	30,539	31,388	31,107	31,598	1.3%
Train	13,492	14,414	14,319	14,316	14,201	14,573	14,050	15,565	16,124	1.2%
Bus	5,963	6,656	6,732	6,570	6,516	6,206	6,215	6,567	6,641	0.7%
Walk only ¹	5,381	4,294	4,255	4,242	4,517	4,613	4,687	4,643	4,562	-1.1%
Walk linked ²	3,634	3,777	3,851	3,967	4,205	4,407	4,320	4,538	4,568	1.5%
Other	1,456	1,749	1,866	2,173	2,432	2,594	2,653	2,488	2,689	4.2%
Total	119,947	141,211	143,633	143,961	146,764	147,176	147,849	147,636	150,263	1.5%
<i>Average distance (km)</i>										
Train	19.5	18.7	18.3	18.5	18.3	18.7	18.3	19.6	19.8	0.1%
Vehicle driver	10.1	10.5	10.7	10.6	10.6	10.4	10.4	10.4	10.5	0.3%
Vehicle passenger	9.1	9.0	9.1	9.0	9.0	8.8	8.8	9.0	8.9	-0.2%
Bus	6.5	6.9	7.2	7.4	7.3	7.0	7.1	7.1	7.2	0.7%
Walk only ³	2.0	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.5	-1.7%

¹ 'Walk-only' trips are those where the main mode is walking and excludes walking trips to access other forms of transport.

² 'Walk-linked' trips are walking trips to access other forms of transport eg. walk trip to the station to ride the train.

³ The current methodology of estimating distance tends to overestimate short trips, especially walk trips. Please refer to an example in the Glossary under 'trip distance'. Based on trip duration, walk trips are most likely to be 700 metres on average. TDC is currently enhancing this process to improve the quality of distance estimates for short trips.

Table 4.4.3: Distance travelled by purpose (average weekday)

Purpose	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
<i>Total distance ('000 km)</i>										
Commuter	30,890	34,517	34,963	34,913	36,754	37,153	36,461	36,747	37,912	1.4%
Work related business	17,607	20,008	21,383	21,527	21,541	20,788	21,115	21,611	21,515	1.3%
Education/childcare	8,950	10,884	11,033	10,705	10,581	10,945	11,532	11,603	12,309	2.1%
Shopping	13,190	14,416	14,769	14,744	15,259	14,923	14,996	15,021	15,306	1.0%
Personal business	7,732	9,546	9,143	9,525	8,982	9,553	9,678	9,594	9,299	1.2%
Social/recreation	24,264	30,402	31,139	30,801	32,057	31,294	31,428	30,162	30,551	1.5%
Serve passenger	14,598	18,652	18,678	19,219	19,004	19,793	19,856	20,127	20,673	2.3%
Other	2,279	2,331	1,911	1,957	2,019	2,187	2,103	2,025	2,032	-0.8%
<i>Average distance (km)</i>										
Commuter	16.1	15.9	15.8	16.1	16.2	16.3	15.9	15.9	15.9	-0.1%
Work related business	12.0	12.9	13.5	13.0	13.4	12.9	13.7	14.2	14.7	1.4%
Education	8.1	8.3	8.4	8.4	8.3	8.4	8.7	8.8	9.0	0.7%
Shopping	5.8	5.9	6.1	6.2	6.2	6.1	6.1	6.2	6.4	0.7%
Personal business	7.0	8.1	7.7	7.9	7.5	7.7	7.6	7.7	7.8	0.7%
Social/recreation	8.9	9.3	9.6	9.3	8.8	8.4	8.3	8.2	8.3	-0.5%
Serve passenger	7.4	7.3	7.4	7.6	7.5	7.4	7.4	7.3	7.4	0.0%

4.5 Trip duration

Table 4.5.1: Time spent travelling (average weekday)

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
	<i>Average time (mins)</i>									
Average trip duration	20	21	21	21	21	21	21	21	21	0.3%
Time spent traveling a day per person	73	79	79	79	79	79	79	79	80	0.6%

Table 4.5.2: Average trip duration by purpose¹ (average weekday)

Purpose	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
	<i>Average time (mins)</i>									
Non-work trips	17	18	18	18	18	18	18	18	18	0.4%
Education/childcare	21	22	22	21	21	22	23	23	22	0.3%
Social/recreation	20	22	22	22	22	21	21	20	21	0.3%
Shopping	14	15	15	15	15	14	15	15	15	0.5%
Personal business	17	19	18	18	18	19	18	18	18	0.4%
Serve passenger	14	14	14	15	14	14	14	14	14	0.0%
Work trips	29	31	32	31	32	31	32	33	34	1.1%
Commute	31	32	33	33	33	33	32	33	33	0.4%
Work related business	23	24	26	26	26	25	27	28	29	1.6%

Table 4.5.3: Average trip duration by mode² (average weekday)

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
	<i>Average time (mins)</i>									
Vehicle driver	18	19	19	19	19	19	19	19	19	0.4%
Vehicle passenger	16	16	17	17	17	17	16	16	16	0.0%
Train	29	29	28	29	28	29	29	31	33	0.9%
Bus	20	21	22	22	22	22	22	23	23	0.9%
Walk only	11	10	10	11	11	10	10	11	11	0.0%

¹ This is based on linked trips.

² Mode estimates are based on unlinked trips.

4.6 Time of day of travel

Table 4.6.1: Persons travelling on motorised modes¹ by time of day (average weekday)

Time of day	1991	1999	2000	2001	2002 '000	2003	2004	2005	2006	Annual growth % 91-06
6:30 am	153	192	194	192	189	184	182	189	199	1.8%
8:00 am	365	453	461	455	455	469	479	483	506	2.2%
10:00 am	232	253	251	270	279	276	266	254	269	1.0%
12:00 noon	196	252	249	247	250	249	259	251	256	1.8%
3:30 pm	359	426	438	419	426	443	482	479	465	1.7%
5:30 pm	335	430	424	420	431	456	467	461	458	2.1%
7:30 pm	143	183	189	193	201	197	197	186	186	1.8%
10:30 pm	54	70	69	73	72	72	67	67	72	1.9%

Table 4.6.2: Morning peak trips² (average weekday)

	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
Morning peak trips ('000)	2,692	3,143	3,124	3,087	3,181	3,233	3,245	3,265	3,368	1.5%
Total trips ('000)	13,148	15,112	15,152	15,207	15,550	15,807	15,829	15,737	15,922	1.3%
% of total day in AM peak	20.5%	20.8%	20.6%	20.3%	20.5%	20.5%	20.5%	20.7%	21.2%	0.2%

¹ The estimates are based on unlinked trips. Estimates published in previous editions were based on linked trips.

² Estimates of morning peak trips are based on linked trips and refer to those arriving at their destination between 6.31am and 9.30am.

Table 4.6.3: Morning peak trips¹ by purpose² (average weekday)

Purpose	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth %
										91-06
					'000					
Commuter	767	840	845	826	878	882	879	872	907	1.1%
Work related business	313	345	349	345	329	314	304	301	312	0.0%
Education/childcare	487	584	578	558	563	567	578	584	605	1.4%
Shopping	232	231	216	218	230	242	243	248	235	0.1%
Personal business	135	142	147	144	146	157	155	152	140	0.2%
Social/recreation	194	237	238	275	311	327	321	311	317	3.3%
Serve passenger	538	747	738	711	712	731	749	777	834	3.0%
Other	25	16	14	10	12	12	15	19	18	-2.4%
Total	2,692	3,143	3,124	3,087	3,181	3,233	3,245	3,265	3,368	1.5%

Table 4.6.4: Proportion of morning peak trips¹ by purpose² (average weekday)

Purpose	1991	1999	2000	2001	2002	2003	2004	2005	2006
Commuter	28.5%	26.7%	27.1%	26.8%	27.6%	27.3%	27.1%	26.7%	26.9%
Work related business	11.6%	11.0%	11.2%	11.2%	10.3%	9.7%	9.4%	9.2%	9.3%
Education/childcare	18.1%	18.6%	18.5%	18.1%	17.7%	17.5%	17.8%	17.9%	18.0%
Shopping	8.6%	7.4%	6.9%	7.1%	7.2%	7.5%	7.5%	7.6%	7.0%
Personal business	5.0%	4.5%	4.7%	4.7%	4.6%	4.9%	4.8%	4.7%	4.2%
Social/recreation	7.2%	7.6%	7.6%	8.9%	9.8%	10.1%	9.9%	9.5%	9.4%
Serve passenger	20.0%	23.8%	23.6%	23.0%	22.4%	22.6%	23.1%	23.8%	24.8%
Other	0.9%	0.5%	0.5%	0.3%	0.4%	0.4%	0.5%	0.6%	0.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Estimates of morning peak trips are based on linked trips and refer to those arriving at their destination between 6.31 am and 9.30 am.

² The purpose analysis uses linked trips. The trip purpose definition allocates return home trips to the previous priority purpose. Please refer to Glossary for details.

Table 4.6.5: Morning peak¹ trips by mode²

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
					'000					
Vehicle driver	1,350	1,649	1,650	1,626	1,684	1,725	1,741	1,729	1,765	1.8%
Vehicle passenger	550	689	685	678	683	696	710	727	769	2.3%
Total private vehicle	1,900	2,338	2,335	2,303	2,366	2,420	2,451	2,455	2,534	1.9%
Train	221	257	248	245	250	260	255	266	270	1.3%
Bus	273	301	281	262	273	273	278	285	287	0.3%
Ferry ³	9	10	10	11	14	14	13	10	11	1.3%
Total public transport	504	568	538	519	536	547	547	561	568	0.8%
Walk only	470	446	446	452	466	461	448	448	441	-0.4%
Other	36	33	38	50	59	68	62	61	62	3.7%
Total	2,911	3,385	3,357	3,323	3,428	3,497	3,508	3,525	3,605	1.4%

Table 4.6.6: Proportion of morning peak¹ trips by mode²

Mode	1991	1999	2000	2001	2002	2003	2004	2005	2006
Vehicle driver	46.4%	48.7%	49.1%	48.9%	49.1%	49.3%	49.6%	49.0%	48.9%
Vehicle passenger	18.9%	20.4%	20.4%	20.4%	19.9%	19.9%	20.2%	20.6%	21.3%
Total private vehicle	65.3%	69.1%	69.6%	69.3%	69.0%	69.2%	69.9%	69.6%	70.3%
Train	7.6%	7.6%	7.4%	7.4%	7.3%	7.4%	7.3%	7.6%	7.5%
Bus	9.4%	8.9%	8.4%	7.9%	8.0%	7.8%	7.9%	8.1%	8.0%
Ferry	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.3%	0.3%
Total public transport	17.3%	16.8%	16.0%	15.6%	15.6%	15.7%	15.6%	15.9%	15.8%
Walk only	16.1%	13.2%	13.3%	13.6%	13.6%	13.2%	12.8%	12.7%	12.2%
Other	1.2%	1.0%	1.1%	1.5%	1.7%	1.9%	1.8%	1.7%	1.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Morning peak trips are those that conclude between 6.31 am and 9.30 am.

² Mode uses *unlinked* trip legs.

³ Ferry trip estimates have high standard errors.

4.7 Profile of travellers

Table 4.7.1: Travellers by sex and mode¹ for an average weekday

Mode	1991		1999		2000		2001		2002		2003		2004		2005		2006	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
	<i>'000</i>																	
Vehicle driver	3,745	2,621	4,309	3,263	4,241	3,369	4,303	3,383	4,295	3,645	4,419	3,687	4,335	3,780	4,194	3,758	4,066	3,925
Vehicle pass.	1,139	1,712	1,465	1,978	1,483	1,977	1,502	1,960	1,475	1,990	1,489	1,994	1,518	2,042	1,503	1,967	1,546	2,005
Train	360	331	398	373	400	380	407	368	403	372	396	383	400	368	418	376	433	382
Bus	421	496	437	534	416	513	392	501	401	491	394	492	410	472	443	480	449	474
Walk only	1,269	1,431	1,248	1,501	1,242	1,509	1,231	1,510	1,239	1,568	1,274	1,611	1,281	1,570	1,357	1,597	1,335	1,610
Other	159	94	174	110	180	118	216	121	242	131	263	139	239	143	246	132	237	147
Total	7,093	6,684	8,031	7,758	7,962	7,866	8,053	7,842	8,054	8,196	8,236	8,307	8,182	8,374	8,162	8,310	8,065	8,543
	<i>Share of trips (%)</i>																	
Vehicle driver	52.8%	39.2%	53.7%	42.1%	53.3%	42.8%	53.4%	43.1%	53.3%	44.5%	53.7%	44.4%	53.0%	45.1%	51.4%	45.2%	50.4%	45.9%
Vehicle pass.	16.1%	25.6%	18.2%	25.5%	18.6%	25.1%	18.7%	25.0%	18.3%	24.3%	18.1%	24.0%	18.5%	24.4%	18.4%	23.7%	19.2%	23.5%
Train	5.1%	5.0%	5.0%	4.8%	5.0%	4.8%	5.1%	4.7%	5.0%	4.5%	4.8%	4.6%	4.9%	4.4%	5.1%	4.5%	5.4%	4.5%
Bus	5.9%	7.4%	5.4%	6.9%	5.2%	6.5%	4.9%	6.4%	5.0%	6.0%	4.8%	5.9%	5.0%	5.6%	5.4%	5.8%	5.6%	5.6%
Walk only	17.9%	21.4%	15.5%	19.3%	15.6%	19.2%	15.3%	19.3%	15.4%	19.1%	15.5%	19.4%	15.7%	18.7%	16.6%	19.2%	16.5%	18.8%
Other	2.2%	1.4%	2.2%	1.4%	2.3%	1.5%	2.7%	1.5%	3.0%	1.6%	3.2%	1.7%	2.9%	1.7%	3.0%	1.6%	2.9%	1.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Mode data uses unlinked trip legs except for walk trips.

Table 4.7.2: Mode¹ share by age of travellers on an average weekday

Year	Age Group	Private Vehicle ²	Public Transport ³	Walk Only	Other	Total
1991	0-10	68.4%	5.8%	24.4%	1.4%	100.0%
	11-20	48.2%	24.2%	24.7%	2.9%	100.0%
	21-30	64.9%	14.1%	19.0%	2.0%	100.0%
	31-40	73.6%	8.8%	16.2%	1.3%	100.0%
	41-50	77.7%	7.5%	13.5%	1.3%	100.0%
	51-60	72.2%	9.7%	17.2%	0.9%	100.0%
	61-70	62.9%	12.7%	23.5%	0.9%	100.0%
	70 +	50.5%	16.6%	31.4%	1.5%	100.0%
1999	0-10	73.8%	5.6%	19.7%	0.9%	100.0%
	11-20	53.3%	24.8%	19.3%	2.6%	100.0%
	21-30	67.6%	13.0%	17.1%	2.3%	100.0%
	31-40	73.8%	8.5%	16.0%	1.8%	100.0%
	41-50	78.5%	6.9%	13.6%	1.1%	100.0%
	51-60	72.9%	9.2%	16.7%	1.1%	100.0%
	61-70	70.0%	9.7%	19.7%	0.6%	100.0%
	70 +	56.7%	15.1%	27.0%	1.2%	100.0%
2000	0-10	74.0%	5.3%	19.8%	0.9%	100.0%
	11-20	55.7%	23.6%	18.3%	2.5%	100.0%
	21-30	66.7%	13.4%	17.3%	2.5%	100.0%
	31-40	73.9%	8.3%	15.9%	2.0%	100.0%
	41-50	79.1%	6.4%	13.2%	1.3%	100.0%
	51-60	73.0%	9.0%	17.0%	1.0%	100.0%
	61-70	69.6%	9.5%	20.2%	0.8%	100.0%
	70 +	54.3%	16.0%	28.3%	1.3%	100.0%
2001	0-10	76.1%	4.4%	18.3%	1.2%	100.0%
	11-20	55.6%	22.8%	18.6%	3.0%	100.0%
	21-30	65.0%	14.2%	18.2%	2.6%	100.0%
	31-40	73.1%	8.7%	15.9%	2.3%	100.0%
	41-50	79.6%	6.1%	12.8%	1.5%	100.0%
	51-60	72.5%	9.0%	17.4%	1.2%	100.0%
	61-70	70.3%	8.8%	20.4%	0.5%	100.0%
	70 +	57.2%	15.0%	26.0%	1.8%	100.0%
2002	0-10	75.2%	4.7%	18.7%	1.4%	100.0%
	11-20	56.6%	21.7%	18.6%	3.1%	100.0%
	21-30	63.6%	14.8%	18.8%	2.8%	100.0%
	31-40	73.6%	8.5%	15.5%	2.4%	100.0%
	41-50	78.7%	6.6%	13.3%	1.5%	100.0%
	51-60	74.4%	7.9%	16.5%	1.2%	100.0%
	61-70	68.9%	9.8%	20.1%	1.2%	100.0%
	70 +	58.6%	13.0%	26.3%	2.0%	100.0%
2003	0-10	75.3%	4.6%	18.5%	1.6%	100.0%
	11-20	55.7%	22.6%	18.5%	3.3%	100.0%
	21-30	62.9%	14.7%	19.3%	3.1%	100.0%
	31-40	73.4%	8.3%	16.1%	2.2%	100.0%
	41-50	77.7%	6.7%	14.0%	1.6%	100.0%
	51-60	74.8%	7.9%	15.7%	1.6%	100.0%
	61-70	71.2%	8.2%	19.1%	1.5%	100.0%
	70 +	58.5%	12.2%	27.1%	2.3%	100.0%

¹ Mode data uses unlinked trip legs except for walk trips.² Includes private vehicle driver and passenger trips.³ Includes train, bus and ferry.

Year	Age Group	Private Vehicle ¹	Public Transport ²	Walk Only	Other	Total
2004	0-10	76.8%	4.1%	17.6%	1.4%	100.0%
	11-20	56.2%	23.4%	17.1%	3.3%	100.0%
	21-30	62.6%	14.1%	19.8%	3.5%	100.0%
	31-40	75.4%	7.6%	15.3%	1.7%	100.0%
	41-50	77.4%	6.8%	14.3%	1.5%	100.0%
	51-60	75.0%	8.2%	15.5%	1.3%	100.0%
	61-70	69.8%	9.0%	19.7%	1.5%	100.0%
	70 +	58.3%	11.9%	27.7%	2.2%	100.0%
2005	0-10	77.1%	3.9%	17.5%	1.4%	100.0%
	11-20	54.1%	24.6%	17.7%	3.6%	100.0%
	21-30	60.6%	14.8%	21.0%	3.5%	100.0%
	31-40	74.8%	7.8%	15.8%	1.6%	100.0%
	41-50	76.1%	7.4%	14.8%	1.7%	100.0%
	51-60	73.3%	8.6%	17.0%	1.2%	100.0%
	61-70	67.6%	9.8%	21.2%	1.3%	100.0%
	70 +	56.8%	12.2%	28.8%	2.3%	100.0%
2006	0-10	79.3%	3.4%	16.1%	1.20%	100.0%
	11-20	55.0%	24.9%	16.5%	3.60%	100.0%
	21-30	60.7%	15.4%	20.8%	3.10%	100.0%
	31-40	73.2%	8.2%	16.7%	1.90%	100.0%
	41-50	76.3%	6.9%	14.9%	1.80%	100.0%
	51-60	73.1%	8.3%	17.2%	1.30%	100.0%
	61-70	66.4%	10.4%	21.7%	1.50%	100.0%
	70 +	59.2%	11.5%	27.0%	2.30%	100.0%

¹ Includes private vehicle driver and passenger trips.

² Includes train, bus and ferry.

4.8 Vehicles

Table 4.8.1: Number of households in Sydney by number of vehicles

Household vehicles	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
None	228	219	224	225	216	209	209	203	207	-0.6%
One	586	637	635	650	641	649	640	639	642	0.6%
Two	368	450	456	467	483	493	505	519	527	2.4%
Three or more	111	145	158	158	175	176	183	184	182	3.4%
Total households	1,293	1,452	1,473	1,499	1,515	1,526	1,538	1,545	1,559	1.3%

Table 4.8.2: Proportion of households in Sydney by number of vehicles

Household vehicles	1991	1999	2000	2001	2002	2003	2004	2005	2006
None	17.6%	15.1%	15.2%	15.0%	14.3%	13.7%	13.6%	13.1%	13.3%
One	45.3%	43.9%	43.1%	43.3%	42.3%	42.5%	41.6%	41.4%	41.2%
Two	28.5%	31.0%	31.0%	31.1%	31.9%	32.3%	32.8%	33.6%	33.8%
Three or more	8.6%	10.0%	10.7%	10.6%	11.5%	11.5%	11.9%	11.9%	11.7%
Total households	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.8.3: Average vehicle occupancy per trip

Trip type	1991	1999	2000	2001	2002	2003	2004	2005	2006	Annual growth % 91-06
Average weekday										
All day	1.45	1.45	1.45	1.45	1.44	1.43	1.44	1.44	1.44	0.0%
AM peak	1.41	1.42	1.42	1.42	1.41	1.40	1.41	1.42	1.44	0.1%
Average day										
Trips to work ¹	1.13	1.11	1.11	1.12	1.11	1.11	1.11	1.10	1.10	-0.1%
Non-work trips	1.72	1.70	1.70	1.69	1.67	1.66	1.68	1.65	1.68	-0.2%

¹ The estimate of vehicle occupancy for work trips may include trips of passengers travelling for non-work purposes.

Appendix



The Household Travel Survey

About the HTS

The Household Travel Survey (HTS) is the largest and most comprehensive source of personal travel data for the Sydney Greater Metropolitan Area. This area includes the Sydney and Illawarra Statistical Divisions and the Newcastle Statistical Subdivision. It extends from Port Stephens in the north to Shoalhaven in the south and the Blue Mountains in the west.

This survey is a benchmark for best practice in travel surveys in Australia and around the world, as well as being the longest running continuous household travel survey in the country. The HTS was first conducted in 1997/98 and has been running continuously since then.

Prior to the HTS, three major one-off household travel surveys were conducted in Sydney in 1971, 1981 and 1991/92. These had large samples (over 12,000 households) and used a face-to-face interview method. In 1996, the HTS was established to meet the needs of transport data users for more timely information. This is conducted by collecting personal travel data on a continuous basis. The HTS uses a similar method to the 1991/92 Home Interview Survey (HIS), allowing for comparison over time.

Survey methodology

The HTS consists of a face-to-face interview survey carried out every day from June to June of each financial year. This collection method ensures high data quality and maximises response rates.

A travel diary is used by each householder to record the details of all travel undertaken for their nominated 24-hour period. An interviewer then interviews each householder to collect the details of each trip. The interviewer records the mode of travel, trip purpose, start and end location, and time of departure and arrival. Vehicle occupancy, toll roads used and parking is recorded for car trips and fare type and cost for public transport trips.

Detailed socio-demographic information is also collected on the household. This includes dwelling type, household structure and vehicle details, as well as age, gender, employment status, occupation and income of individual household members. The following section lists the major data items collected in the HTS.

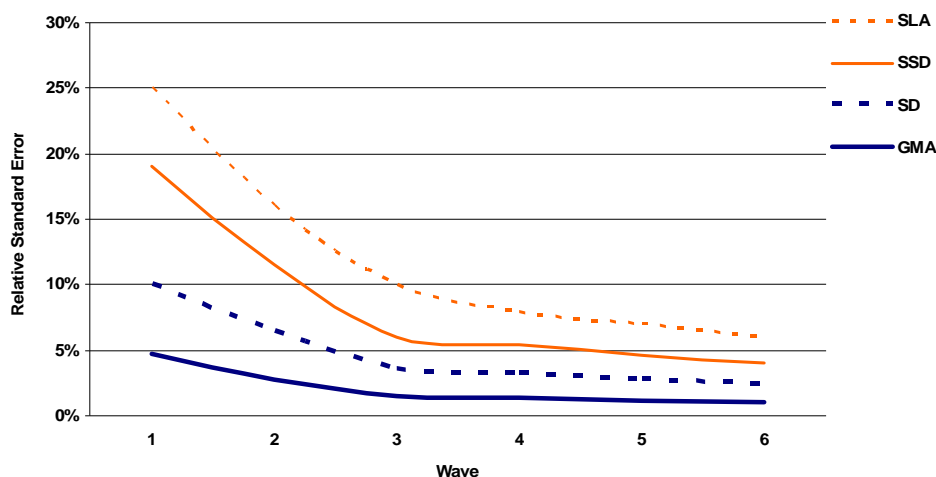
Sample design and statistical validity

The sample of the continuous HTS is designed on a three-yearly cycle so that the pooling of three years of data gives a sample size similar to that achieved in the 1991/92 HIS. About 5,000 randomly selected households are approached each year to participate in the survey.

The 2006 estimates in this report are based on three years of pooled data collected from June 2004 to June 2007. A sample of 14,437 households in the Sydney Greater Metropolitan Area were approached during this period, of which 9,315 (65%) responded. From these responding households, 23,966 people were interviewed giving a total of 103,654 trip records as the basis for the 2006 pooled estimates.

The HTS sampling method was designed for TDC by the Statistical Consultancy section of the ABS. In this sample design, the relative standard error (RSE) decreases and the statistical reliability increases as more waves of data are pooled (Figure A.1).

Figure A.1: Estimates of Relative Standard Error of HTS Estimates



Data expansion

The data collected in the HTS is expanded (weighted) to estimate the travel patterns of the total population in the survey area for a given year, using the corresponding ABS annual estimates of the resident population (ERP). (Please refer to the table below.) This ERP is adjusted for those who live in occupied private dwellings using ABS data on households and individuals from the latest Census of Population and Housing. The expansion process ensures that the HTS estimates of population match the ABS population estimates of residents of private dwellings for the survey area in any given year.

Year of Pooled Estimates	Waves of the HTS in the Pooled Dataset	ABS Estimated Resident Population (ERP) Data Used
2006	2004/2005, 2005/2006 and 2006/2007	June 2006
2005	2003/2004, 2004/2005 and 2005/2006	June 2005
2004	2002/2003, 2003/2004 and 2004/2005	June 2004
2003	2001/2002, 2002/2003 and 2003/2004	June 2003
2002	2000/2001, 2001/2002 and 2002/2003	June 2002
2001	1999/2000, 2000/2001 and 2001/2002	June 2001
2000	1998/1999, 1999/2000 and 2000/2001	June 2000
1999	1997/1998, 1998/1999 and 1999/2000	June 1999

Comparison over time

The 1991 estimates produced from the 1991 HIS data used in this publication have been adjusted to ensure a high degree of comparability with the HTS. Nevertheless, care should be taken when interpreting changes over time between the two surveys, as improved collection and processing techniques have been used in HTS. Furthermore, the HIS and HTS surveys were carried out at very different points in the economic cycle. It is therefore important to consider possible influences on the data when making assumptions about the meaning of changes in the data.

Also RSEs associated with estimating change between years are greater than the RSEs for each individual year. Small changes may not be significant.

Data Collected in the HTS

PEOPLE AND HOUSEHOLDS	
<p>Household characteristics Dwelling type Ownership status of dwelling Number of household vehicles Number of bicycles (adult & child) Structure of household Language spoken at home</p> <p>Personal characteristics Age Gender Personal income Employment status Country of birth</p>	<p>Work characteristics Main occupation Work schedule Working hours & their flexibility Industry of employment Employer assistance with transport Teleworking and car pooling</p> <p>Licence Holding and Mobility Types of driver's licences Reason for no driver's licence Physical disabilities preventing or restricting use of transport</p>
PUBLIC TRANSPORT USE	
<p>Mode Train Bus (private, public, school) Ferry (private, public) Other modes: monorail, light rail, taxi and aircraft</p> <p>Trip characteristics Trip origin Trip destination Purpose of trip Time of day of trip</p>	<p>Tickets and Fares Amount paid Fare type Ticket type Multi-modal tickets</p> <p>Reasons for using public transport Use of public transport rather than car for travel to work Use of car rather than public transport for travel to work</p>
VEHICLES AND THEIR USE	
<p>Trip Characteristics Trip origin Trip destination Time of day of trip Purpose of trip Number of vehicle occupants</p> <p>Tolls and Toll roads used</p>	<p>Vehicle Characteristics Vehicle make and model Vehicle age Engine characteristics Type of registration Type of fuel used</p> <p>Parking Cost of parking and who pays Type of parking used</p>
NON-MOTORISED MODES AND THEIR USE	
<p>Walking Trip origin Time of day of trip</p>	<p>Number of working bicycles (adult/child) in household Trip destination Purpose of trip</p>

Acronyms

ACRONYM	DESCRIPTION
ABS	Australian Bureau of Statistics
ERP	Estimated Resident Population
GMA	Greater Metropolitan Area
HIS	Home Interview Survey
HTS	Household Travel Survey
JTW	Journey to Work
RSE	Relative Standard Error
SD	Statistical Division
SSD	Statistical Sub-division
TDC	Transport Data Centre
VKT	Vehicle Kilometres Travelled

Glossary of Terms

AM peak or Morning peak	Unless otherwise stated, this refer to trips arriving at their destination between 6.31 am and 9.30 am on a weekday.
Average day	Monday to Sunday. To calculate total annual estimates, multiply figures for an average day by 365.
Average weekday	Average of travel over Monday to Friday. Includes public and school holidays.
Distance	Kilometres between travel zone centroids. See <i>Trip Length</i> .
Greater Metropolitan Area (GMA)	TDC defined geographical area for core TDC datasets. Comprises Sydney SD, Newcastle SSD and Illawarra SD (Figure 1.1).
Greater Metropolitan Region (GMR)	Area generally referred to as the greater Sydney conurbation, which covers Sydney SD, Newcastle SSD & Wollongong SSD. It is the equivalent of the TDC GMA <i>without</i> Shoalhaven and Wingecarribee LGAs.
Household vehicles	Number of registered vehicles usually garaged at the household overnight, whether privately or company owned.
Illawarra SD	Covers the Local Government Areas of Wollongong, Shellharbour, Kiama, Shoalhaven and Wingecarribee.
Linked trip	A linked trip is a journey from one activity to another, excluding change of mode. A linked trip comprises one or more unlinked trip legs. For example, a person who lives in Parramatta may travel to work in the Sydney CBD by train with a walk trip at either end of the train trip. This would be counted as one linked trip from home to work. See also <i>Unlinked Trips</i> and <i>Priority Mode</i> .
Mode	Unlinked trips have only one mode and one purpose. As linked trips can comprise more than one mode, a priority mode is allocated to each trip based on a pre-determined priority list of modes. See <i>Priority Mode</i> .
Motorised travel	Trips by private vehicle, train, bus, ferry, monorail, light rail and aircraft. Excludes walking and bicycle trips.
Newcastle SSD	Covers the Local Government Areas of Newcastle, Cessnock, Lake Macquarie, Maitland and Port Stephens.
Population	Counts of the population of Sydney from the HIS and HTS are based on residents of private dwellings. These counts are slightly lower than the Estimated Resident Population (ERP) from the Australian Bureau of Statistics (ABS), which include residents of non-private dwellings (gaols, hospitals, hotels, etc.).
Priority mode	Where a linked trip is comprised of unlinked trips that uses more than one mode, a <i>priority</i> mode is allocated to the linked trip according to the following hierarchy, which is generally the mode with the largest likely (but not necessarily actual) duration of the trip:

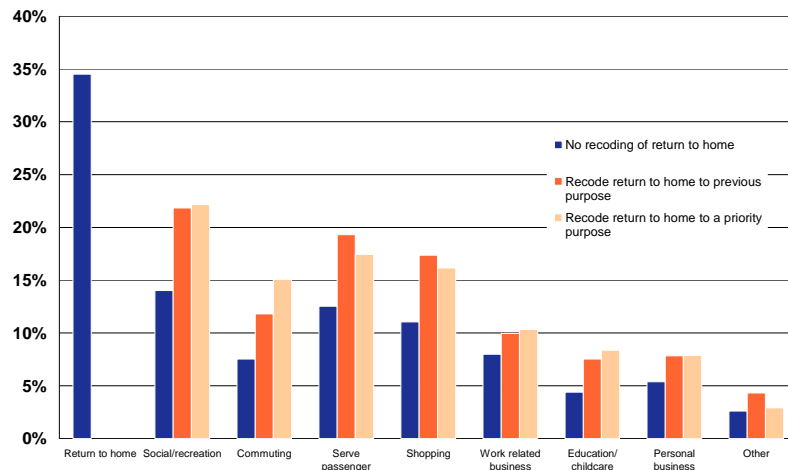
- Ferry
 - Train
 - Light rail/monorail
 - Bus
 - Vehicle driver
 - Vehicle passenger
 - Taxi
 - Bicycle
 - Walk
 - Other
- Highest
↑
Lowest

Priority purpose

TDC collects data on a detailed list of trip purposes, including the purpose 'return to home'. This category makes up about 34% of unlinked trips on an average weekday (Figure A.2). To give a better picture of trip generation and because the category of return home is so large, TDC recodes return to home trips according to the main previous purpose, based on a priority hierarchy. For example if a person is returning home from work and stopped off at the shops quickly on the way, this incidental trip to the shop is not considered as the main purpose of that return trip home, rather, the main previous purpose before returning home is work. Trips to return home with multiple previous purposes as in this example are allocated a priority purpose, based on the following hierarchy:

- Work
 - Work related business
 - Education
 - Purpose with the longest activity time
 - Serve passenger
- Highest
↑
Lowest

Figure A.2: Purpose of trips on an average weekday, 2001



Private vehicle

Includes all motorised vehicles such as cars, 4WDs, vans, motorbikes, motor scooters, utes and trucks.

Public transport

Includes train, bus (government and private) and ferry (government and private).

Sydney

Refers to Sydney Statistical Division, illustrated in Figure 1.1.

Travel zone

TDC has developed travel zones as a level of geography which sits between the ABS geographic classifications of Census Collector Districts (CDs) and Statistical Local Areas (SLAs). These zones completely cover the study area without omission or overlap and provide the basis for the TDC’s transport modelling and analysis.

Trip duration

Travel time in minutes calculated as door-to-door travel time, including trips to change mode and any wait time. Where trip duration is referred to in relation to mode, it means in-vehicle time only.

Trip length (distance)

Each trip origin and destination is coded to a travel zone. Trip length is calculated based on the road network distance between the trip origin and destination zone centroids (depicted by the orange arrow in Figure A.3). For intra-zonal trips, that is both the origin and destination are in the same zone, the distance is estimated using a formula based on the area of the zone. This methodology produces a degree of measurement error which tends to affect short distances, eg. short walk trips are likely to be over-estimated. Trip duration may, therefore, be a better indicator of the trip length for short distance trips.

For example, a person’s trip may actually be from two nearby points shown by the magenta arrow in Figure A.3. The trip distance that will be derived based on current methodology will be based on the centroid-to-centroid distance of the two relevant zones shown by the orange arrow. This distance clearly overestimates the actual distance. In this instance, trip duration in minutes provides a better measure of trip length.

Figure A.3: Measurement of trip distances



The accuracy of distance estimates will be significantly enhanced in future summary reports as TDC implements a new methodology for measuring distance based on XY coordinates. These data are currently being validated prior to publication.

Where overall trip length is reported, it is based on door-to-door distance, including changes of mode. Door-to-door refers here to the linked trip from origin to destination, not a completed return journey as in a home to work

and work to home. Where trip length is reported by mode, it refers to in-vehicle distance only.

Trip purpose	Child care	Trips by children to child care.
	Commuting	The first trip to work of the day, usually from home, excluding trips to return to work. This also includes the first trip to a second job if any.
	Work related business	Work related trips away from respondent's usual work address. Also for respondents without a fixed work address eg. a plumber, household interviewers, etc. who work at various locations.
	Education	Trips by students to educational institutions, including kindergarten, primary and secondary schools, technical colleges and universities.
	Home *	Trips to return home
	Personal Business	Purpose is to transact personal business where no "goods" are involved eg. bank, library, doctor.
	Serve Passenger	Trips where the purpose is to drop-off, pick-up or accompany another person eg. man drops his children to school on the way to work, a young child "comes along for the ride" on a parent's trip to the bank, a woman takes an elderly parent to a medical appointment.
	Shopping	Trips to/from a shop, defined as premises that sell "goods".
	Social/Recreation	Purposes include social visits, entertainment, sporting activities, hobbies, holidays etc.
	Other	Trips for purposes not identified elsewhere.

* This publication reports trips to return home according to the previous priority purpose. See *Priority Purpose* above.

Unlinked trip An unlinked trip is each component of a linked trip, including each mode used. For example: A person living in Parramatta and working in the Sydney CBD travels by train with a walk trip at either end of the train trip. This would be three unlinked trips as shown below:

Trip	Origin	Destination	Mode	Purpose
1	Home	Parramatta Station	Walk	Change mode
2	Parramatta Station	Central Station	Train	Change mode
3	Central Station	Workplace	Walk	Work

Vehicle kilometres travelled Road network distance for vehicle driver trips. See *Trip Length*.

Walk only Trips where the main mode of travel is walking, excluding walking trips to and from other forms of transport.

Other TDC Publications

TDC has produced a number of other Travel Publications. Most are free to download from:

<http://www.transport.nsw.gov.au/tdc/publications.html>

2006 Employment and Commuting
Social and Recreational trips by Sydneysiders (2007 Release)
Train Access and Egress modes (2006 Release)
Statistics for Subregional Planning Process (2006 Release)
Trip Flows into Sydney and Other Regional Cities (2006 Release)
Commercial Transport Study Summary Results (2005 Release)
Car Travel in Sydney: Changes in the last Decade (2005 Release)
Travel in Sydney, Newcastle and Illawarra, 2007
Ferry Users in Sydney, 2003
Bus Users in Sydney, 2002
Cycling in Sydney, 2003
Travel in Newcastle and Wollongong (2002 Release)
Train Users in Sydney, 2001
Trends in Sydney's Travel Patterns 1981-1991
2001 Journey to Work Summary Tables: Workplace SLA
2001 Journey to Work Summary Tables: Home SLA
2001 Journey to Work User Guide
Commuting from Sydney's Fringe: Analysis of 1996 JTW data
Sydney Travels Brochure: 2005 Travel Characteristics of
Sydney's Residents

For customised data, maps and standard products, contact:

TDC Client Services Team
Telephone: (02) 9268 2211
Facsimile: (02) 9268 2839
E-mail: tdcinfo@transport.nsw.gov.au
Web: <http://www.transport.nsw.gov.au/tdc/>