



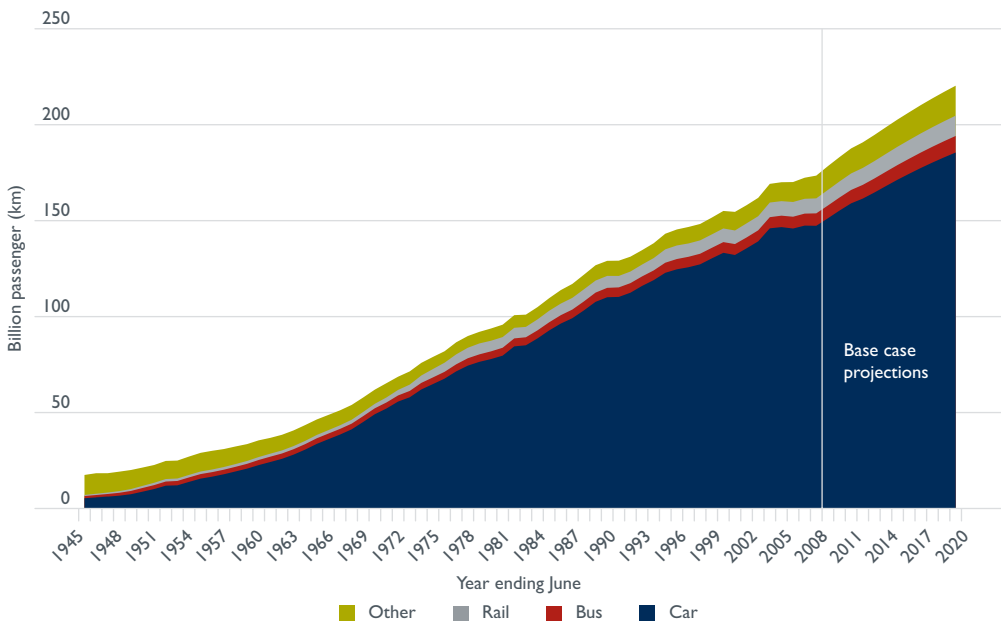
Urban passenger transport: how people move about in Australian cities

In the sixty years since the end of the Second World War, Australian cities have been transformed from fairly tightly knit core-and-spoke configurations, to sprawling suburban low-density configurations.

This transformation of urban land use has been accompanied and made possible by a rapid improvement and spread of the road system, and an even more rapid expansion in per person car ownership.

As shown in Figure 1, total motorised travel in the urban areas of Australia has grown remarkably—almost tenfold over 60 years. Most of that growth came from cars and other road vehicles (mostly motor cycles, and light commercial vehicles used for private purposes).

Figure 1 Eight capitals motorised passenger task



As of 2008, private road vehicles (roughly ‘cars’ plus other ‘road’ in the graph) represent about 90 per cent of city motorised passenger transport and urban public transport about 10 per cent.

Of course, this 10 per cent mode share for urban public transport (UPT) is in terms of all-day travel. When commuting travel is considered, the share of UPT is considerably higher—about 16 per cent nationally. This makes UPT a more important player in the area of congestion alleviation, as congestion is largely a journey to and from work phenomenon. Table 1 shows the comparisons for the eight capital cities between commute and all-day motorised mode shares.

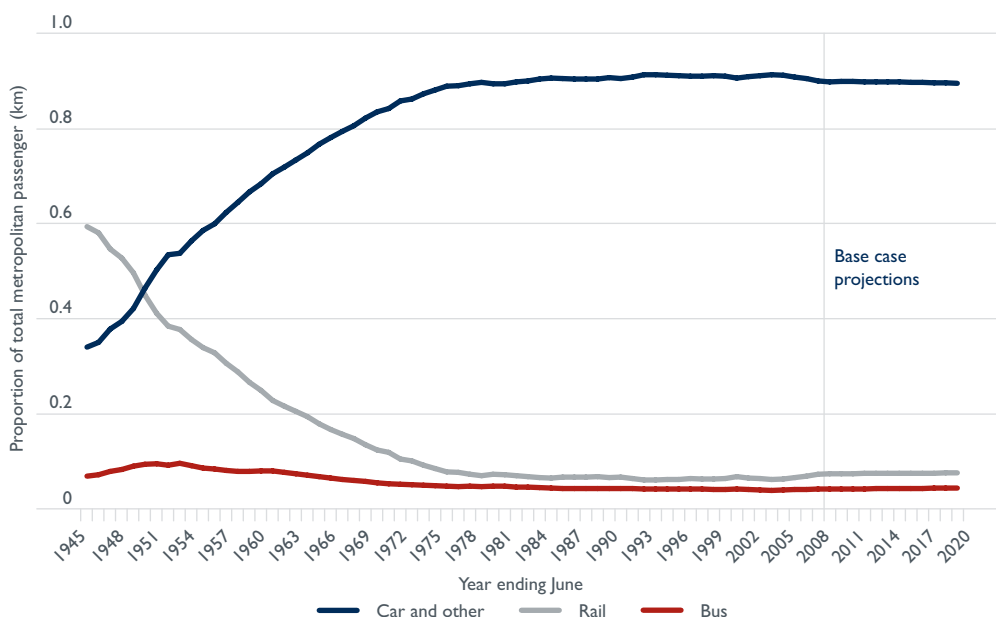
Table 1 Commute and all-day mode share of urban public transport, 2006

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Canberra	Darwin	Eight capitals
UPT commute share (per cent of all motorised trips)	22.7	14.8	14.7	10.6	11.0	7.1	8.6	5.1	16.1
UPT all-day share (per cent of all passenger kilometres travelled)	13.3	8.4	9.0	5.7	6.5	4.3	5.7	7.2	9.5

Source: ABS (2007), Table 3 below

Historically, urban public transport declined in absolute terms from after the war until 1980. After 1980 growth returned, but it was only at the same growth rate as light vehicle travel. This resulted in the share of urban public transport since 1980 being stable until 2004—a quarter of a century of equilibrium in mode share. (see Figure 2).

Figure 2 Eight capitals motorised mode share



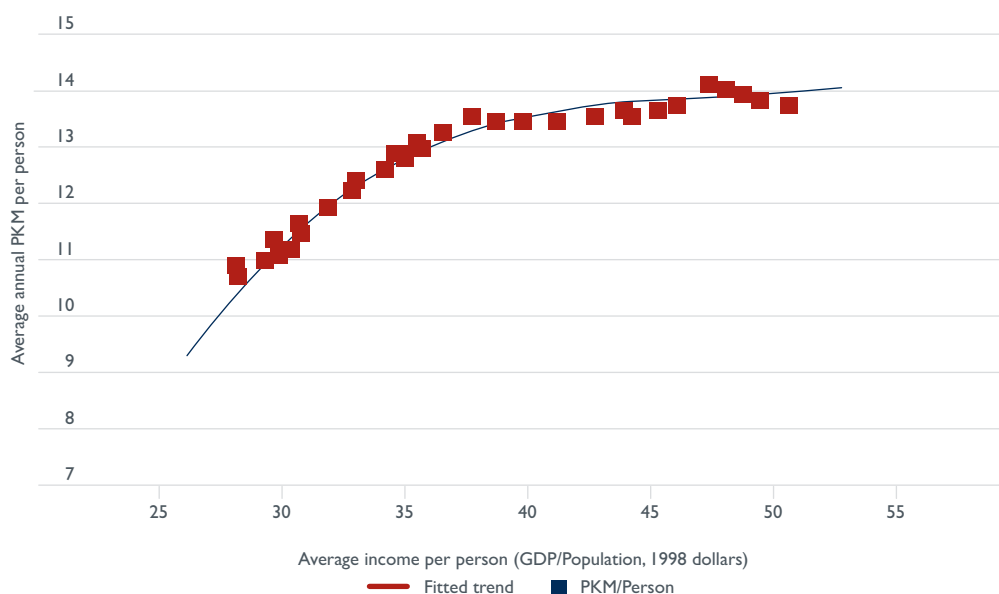
So, if car travel and urban public transport (UPT) have historically grown at the same rate since 1980, what determines what that growth rate is?

Up until recently there were two components to the growth rate (in both car and UPT travel):

- *Growth in population* (and implicitly employment) in our cities.
- Growth in income per person, which generated *travel growth per head of population*.

Figure 3 shows that the second of the above factors—travel growth per head of population—had almost saturated by 2008, suggesting that further increases in income per person are unlikely to generate substantially more per person travel in our cities.

Figure 3 Increasing saturation of per person motorised travel in our cities,



1977–2008

In other words, the second of the two growth factors has largely dropped out, leaving only population (and associated employment) growth as the sole remaining ‘driver’ of urban passenger travel growth.

That being the case, and with the mode share unchanged, the simplifying picture would be that both car and UPT travel in our cities should grow by the rate of population growth in the foreseeable future.

But is this correct?

- We are assuming an unchanged relationship between employment growth and population growth, which perhaps can change with changed economic circumstances.
- It could well be that changes in relative prices (especially of petrol), as well as changes in economic circumstances, could dislodge the 25 year mode share equilibrium.
- Investment in UPT supply capability (often in lagged response to demand changes) can affect the ability of 'latent' demand for UPT to be expressed.

All of these factors appear to have been in play since 2004 with regard to urban passenger transport in Australia.

Table 2 shows some of the changes taking place.

Table 2 Changes in urban passenger transport 2003–04 to 2007–08

	Units	2003–04	2004–05	2005–06	2006–07	2007–08	Change 2004–08 (per cent)
Real petrol price	2008c/l	104.5	113.5	131.8	128.4	137.1	31.0
UPT passengers	B PKM	15.7	16.0	16.7	17.4	18.4	17.6
MV passengers	B PKM	153.6	154.2	153.6	155.2	155.2	1.0
Total passengers	B PKM	169.3	170.2	170.2	172.5	173.6	2.5
UPT mode share	per cent	9.3	9.4	9.8	10.1	10.6	14.7
8 capitals population	thousands	12 797	12 958	13 144	13 363	13 568	6.0

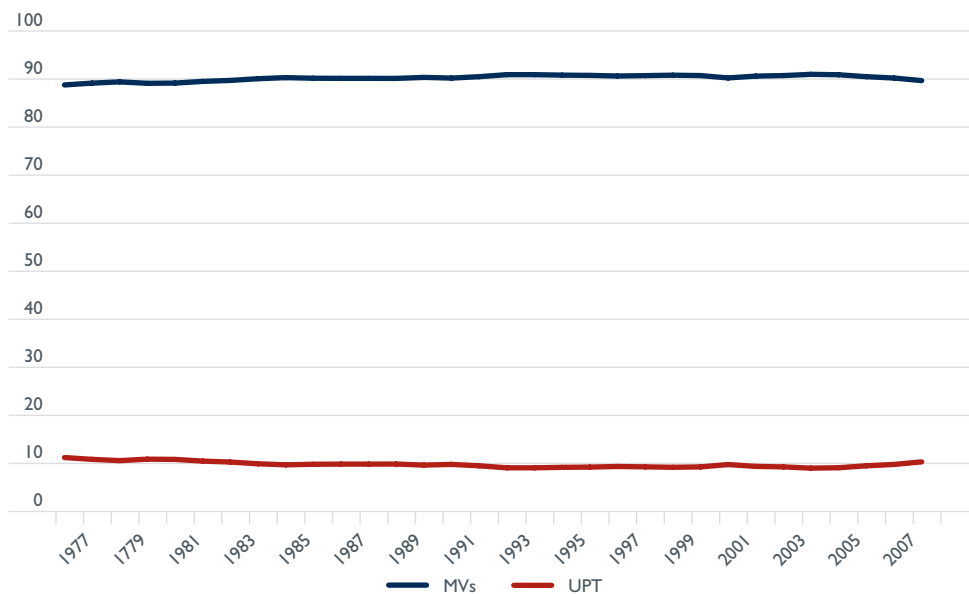
Source: BITRE estimates.

Several trends are evident:

- *Total Passenger* travel has grown less than the rate of population growth.
- *Motor Vehicle Passengers* (Car and 'other') have grown at less than the rate of growth in total travel.
- *Urban Public Transport Passengers* have grown at greater than the rate of growth in total travel, leading to
- An increase in UPT mode share.

UPT passenger numbers rose about 18 per cent, 18 times the percentage increase in motor vehicle travel in the period. But as total travel tends to increase by about 1.5 per cent per year in times of normal fuel prices (i.e. at the rate of population growth) and UPT holds mode share, UPT could have been expected to increase by 6 per cent anyway. Thus the 18 per cent increase only represented at maximum a 12 per cent additional increase as a result of the higher petrol prices, higher interest rates, higher CBD employment growth, etc. Moreover, UPT mode share is so small that a 14.4 per cent increase in share is equivalent to moving from a 9 per cent share of total city travel to just over a 10 per cent share of city travel (as shown in figure 4).

Figure 4 Share of city passenger travel by motor vehicles and UPT



A study of the recent large increases in UPT patronage in Melbourne (Victorian Department of Transport 2008) has highlighted many factors contributing to the growth. Prominent were high CBD employment growth (especially for rail patronage) and high petrol prices. With the advent of the global economic slowdown, both of these may abate for a time. Thus there is reason to suppose that a new mode share and traffic growth equilibrium will re-establish itself over the next few years in our cities. However, in the longer run, higher energy prices, renewed economic growth and the demands of climate change policies may again disturb the equilibrium.

There are large differences between cities in passenger transport. Sydney and Melbourne have similar private vehicle travel levels, but Sydney has higher urban public transport passenger-kilometres travelled, due in part to the longer rail distances per passenger on the Sydney rail system. Next in size, Perth and Brisbane have similar overall motorised passenger travel, with Brisbane having more rail travel and less light vehicle travel. Adelaide has less travel than Perth and Brisbane, but still has three times that of the next city, Canberra. Hobart and Darwin have the smallest travel levels, with only bus systems for urban public transport.

Capital City Passenger Tasks – Australia

Total (motorised) metropolitan passenger task

Sydney (billions of passenger kilometres)

Financial year	Private motor vehicles				Urban Public Transport					PKM Total	Population (thousands)	
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Light rail	Bus	Ferry	Sub-total			
1977	23.92	1.37	0.23	25.52	3.14		1.54	0.110	4.787	30.30	3174	
1978	24.80	1.46	0.24	26.51	3.06		1.57	0.114	4.751	31.26	3212	
1979	25.32	1.53	0.26	27.11	3.09		1.60	0.115	4.806	31.92	3250	
1980	25.60	1.46	0.28	27.34	3.52		1.64	0.126	5.287	32.63	3288	
1981	26.01	1.44	0.30	27.75	3.64		1.70	0.125	5.465	33.22	3326	
1982	27.54	1.42	0.32	29.28	3.76		1.72	0.139	5.619	34.90	3359	
1983	27.66	1.38	0.33	29.37	3.55		1.75	0.135	5.436	34.81	3393	
1984	28.89	1.47	0.34	30.70	3.47		1.79	0.131	5.384	36.08	3426	
1985	30.32	1.57	0.35	32.24	3.45		1.82	0.127	5.394	37.63	3459	
1986	31.35	1.58	0.34	33.27	3.72		1.85	0.123	5.696	38.97	3492	
1987	32.10	1.60	0.33	34.03	3.81		1.90	0.119	5.829	39.86	3528	
1988	33.30	1.69	0.32	35.31	4.13		1.95	0.115	6.199	41.51	3565	
1989	34.64	1.67	0.31	36.62	4.18	0.013	1.96	0.110	6.267	42.88	3601	
1990	35.22	1.65	0.31	37.18	4.29	0.012	1.97	0.106	6.376	43.56	3609	
1991	35.33	1.58	0.28	37.18	4.37	0.012	2.03	0.102	6.513	43.70	3650	
1992	35.76	1.61	0.28	37.64	4.27	0.012	2.04	0.100	6.429	44.07	3689	
1993	36.88	1.65	0.28	38.81	4.12	0.012	2.04	0.100	6.263	45.07	3724	
1994	37.84	1.73	0.27	39.84	4.22	0.012	2.07	0.106	6.416	46.26	3759	
1995	39.05	1.90	0.27	41.22	4.51	0.012	2.12	0.114	6.755	47.98	3802	
1996	39.62	1.94	0.26	41.82	4.62	0.013	2.17	0.116	6.917	48.74	3881	
1997	40.03	1.91	0.26	42.19	4.76	0.013	2.22	0.120	7.118	49.31	3928	
1998	40.17	1.92	0.25	42.34	4.80	0.013	2.26	0.114	7.191	49.54	3970	
1999	40.97	1.94	0.24	43.15	4.88	0.015	2.30	0.113	7.310	50.46	4020	
2000	42.24	1.97	0.24	44.45	5.05	0.018	2.32	0.112	7.498	51.95	4069	
2001	41.89	1.95	0.25	44.09	5.44	0.021	2.36	0.126	7.940	52.03	4117	
2002	43.00	2.01	0.26	45.27	5.06	0.020	2.26	0.119	7.458	52.73	4168	
2003	44.17	2.01	0.26	46.44	5.07	0.019	2.26	0.118	7.465	53.90	4201	
2004	46.34	2.07	0.28	48.69	5.12	0.016	2.25	0.122	7.516	56.20	4229	
2005	46.56	2.03	0.29	48.88	5.16	0.021	2.29	0.122	7.596	56.48	4265	
2006	46.34	2.05	0.32	48.71	5.28	0.020	2.30	0.121	7.721	56.43	4310	
2007	46.85	2.07	0.33	49.25	5.46	0.026	2.32	0.122	7.925	57.18	4372	
2008	46.84	2.11	0.34	49.29	5.75	0.027	2.37	0.120	8.261	57.55	4430	
					<i>Growth (per cent)</i>							
1977–2004	93.7	50.9	24.5	90.8	63.5	24.1	46.2	10.7	57.0	85.5	33.3	
2004–2008	1.08	2.00	20.79	1.23	12.15	72.30	5.02	-1.77	9.91	2.39	4.74	
1977–2008	95.8	53.9	50.4	93.1	83.3	113.9	53.5	8.8	72.6	89.9	39.6	
					<i>Growth per annum (per cent)</i>							
1977–2004	2.48	1.53	0.81	2.42	1.84	1.45	1.42	0.38	1.68	2.31	1.07	
2004–2008	0.27	0.50	4.83	0.31	2.91	14.57	1.23	-0.45	2.39	0.59	1.16	
1977–2008	2.19	1.40	1.32	2.15	1.97	4.08	1.39	0.27	1.78	2.09	1.08	

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Melbourne (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport				PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Light rail	Bus	Sub-total		
1977	21.84	1.24	0.17	23.26	1.96	0.53	0.58	3.07	26.33	2749
1978	22.72	1.31	0.16	24.18	1.88	0.52	0.58	2.98	27.16	2780
1979	23.25	1.35	0.15	24.76	1.79	0.53	0.58	2.90	27.65	2810
1980	23.57	1.29	0.17	25.03	1.66	0.52	0.59	2.78	27.81	2841
1981	24.02	1.29	0.18	25.49	1.58	0.53	0.60	2.72	28.20	2872
1982	25.51	1.26	0.20	26.97	1.52	0.54	0.62	2.68	29.65	2896
1983	25.69	1.22	0.20	27.11	1.55	0.53	0.63	2.71	29.82	2920
1984	26.91	1.29	0.20	28.40	1.57	0.54	0.65	2.76	31.16	2945
1985	28.32	1.34	0.20	29.86	1.67	0.60	0.67	2.94	32.80	2969
1986	29.45	1.37	0.20	31.02	1.75	0.62	0.70	3.07	34.09	2994
1987	30.32	1.38	0.20	31.90	1.83	0.63	0.73	3.20	35.09	3026
1988	31.63	1.42	0.20	33.26	1.83	0.65	0.77	3.25	36.51	3059
1989	33.09	1.43	0.20	34.72	2.00	0.66	0.81	3.47	38.18	3091
1990	33.83	1.42	0.20	35.46	1.95	0.55	0.82	3.32	38.78	3107
1991	33.78	1.39	0.18	35.35	1.94	0.60	0.81	3.36	38.71	3134
1992	34.28	1.41	0.18	35.87	1.90	0.56	0.81	3.27	39.14	3160
1993	35.39	1.44	0.18	37.01	1.81	0.51	0.82	3.14	40.14	3180
1994	36.34	1.50	0.17	38.01	1.81	0.51	0.85	3.17	41.19	3195
1995	37.53	1.63	0.17	39.33	1.94	0.51	0.88	3.33	42.67	3221
1996	38.12	1.65	0.17	39.94	1.98	0.52	0.91	3.42	43.35	3283
1997	38.45	1.62	0.17	40.24	1.97	0.52	0.92	3.41	43.65	3309
1998	39.26	1.63	0.16	41.05	1.90	0.51	0.94	3.35	44.40	3342
1999	40.30	1.66	0.15	42.11	1.99	0.53	0.94	3.46	45.57	3380
2000	41.02	1.69	0.15	42.86	2.11	0.56	0.94	3.61	46.47	3423
2001	40.70	1.69	0.16	42.54	2.19	0.58	0.95	3.72	46.26	3462
2002	41.79	1.75	0.17	43.71	2.30	0.59	0.95	3.84	47.56	3514
2003	42.86	1.76	0.17	44.79	2.35	0.60	0.96	3.91	48.70	3558
2004	44.90	1.82	0.18	46.89	2.42	0.60	0.97	3.99	50.88	3597
2005	45.04	1.80	0.19	47.03	2.50	0.61	0.96	4.06	51.09	3644
2006	44.77	1.81	0.20	46.78	2.78	0.62	0.99	4.39	51.16	3699
2007	45.18	1.80	0.21	47.20	3.07	0.63	1.02	4.72	51.92	3757
2008	45.11	1.82	0.22	47.14	3.46	0.65	1.09	5.20	52.34	3811
<i>Growth (per cent)</i>										
1977–2004	105.5	45.8	6.1	101.6	23.6	12.7	67.8	30.0	93.3	30.8
2004–2008	0.5	0.0	20.9	0.5	43.0	8.0	12.3	30.3	2.9	6.0
1977–2008	106.5	45.9	28.3	102.7	76.7	21.7	88.5	69.4	98.8	38.6
<i>Growth per annum (per cent)</i>										
1977–2004	2.70	1.41	0.22	2.63	0.79	0.44	1.94	0.98	2.47	1.00
2004–2008	0.12	0.01	4.87	0.13	9.35	1.95	2.94	6.84	0.71	1.46
1977–2008	2.37	1.23	0.81	2.31	1.85	0.64	2.07	1.72	2.24	1.06

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

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Brisbane (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport				PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Bus	Ferry	Sub-total		
1977	7.16	0.54	0.15	7.85	0.38	0.44	0.00	0.82	8.66	993
1978	7.70	0.58	0.15	8.43	0.37	0.47	0.00	0.84	9.27	1012
1979	8.24	0.62	0.15	9.01	0.35	0.47	0.00	0.82	9.83	1030
1980	8.85	0.60	0.16	9.61	0.38	0.47	0.00	0.86	10.46	1049
1981	9.45	0.60	0.17	10.22	0.42	0.43	0.00	0.85	11.07	1067
1982	10.05	0.60	0.18	10.83	0.46	0.45	0.00	0.91	11.74	1094
1983	10.22	0.59	0.17	10.98	0.47	0.47	0.00	0.95	11.93	1120
1984	10.40	0.64	0.15	11.19	0.52	0.45	0.00	0.97	12.16	1147
1985	10.57	0.69	0.14	11.40	0.55	0.46	0.00	1.01	12.41	1175
1986	11.17	0.70	0.15	12.02	0.62	0.46	0.00	1.08	13.10	1200
1987	11.78	0.72	0.15	12.65	0.68	0.48	0.00	1.17	13.82	1232
1988	12.38	0.76	0.16	13.30	0.74	0.52	0.00	1.27	14.57	1263
1989	12.97	0.77	0.17	13.91	0.85	0.60	0.00	1.46	15.36	1295
1990	13.55	0.77	0.17	14.49	0.78	0.58	0.00	1.36	15.85	1304
1991	13.61	0.74	0.16	14.51	0.79	0.60	0.00	1.39	15.90	1332
1992	14.05	0.76	0.16	14.96	0.75	0.62	0.00	1.38	16.34	1361
1993	14.45	0.79	0.16	15.40	0.74	0.61	0.00	1.35	16.75	1397
1994	14.81	0.83	0.16	15.80	0.72	0.63	0.01	1.36	17.16	1427
1995	15.27	0.92	0.16	16.35	0.70	0.70	0.01	1.40	17.75	1459
1996	15.48	0.95	0.16	16.59	0.74	0.68	0.01	1.43	18.02	1501
1997	15.59	0.94	0.16	16.69	0.79	0.68	0.01	1.48	18.17	1524
1998	15.75	0.95	0.15	16.85	0.80	0.68	0.01	1.49	18.34	1549
1999	16.38	0.96	0.15	17.49	0.81	0.64	0.01	1.47	18.96	1571
2000	16.49	0.98	0.15	17.61	0.87	0.69	0.01	1.56	19.18	1599
2001	16.39	0.98	0.15	17.51	0.94	0.69	0.01	1.64	19.16	1625
2002	16.87	1.01	0.16	18.05	0.97	0.71	0.01	1.69	19.74	1669
2003	17.41	1.02	0.16	18.59	0.97	0.74	0.01	1.72	20.31	1713
2004	18.33	1.05	0.18	19.56	1.01	0.77	0.01	1.79	21.35	1755
2005	18.49	1.04	0.18	19.72	1.00	0.83	0.01	1.84	21.56	1795
2006	18.48	1.04	0.20	19.72	1.08	0.91	0.02	2.01	21.73	1828
2007	18.75	1.04	0.21	20.01	1.18	0.96	0.02	2.15	22.15	1874
2008	18.82	1.05	0.22	20.09	1.25	1.00	0.02	2.27	22.36	1919
<i>Growth (per cent)</i>										
1977–2004	156.2	94.4	17.3	149.3	166.3	76.1	600.5	119.0	146.5	76.7
2004–2008	2.6	0.2	23.1	2.7	23.9	29.8	60.9	26.7	4.7	9.4
1977–2008	163.0	94.8	44.4	156.0	229.9	128.5	1027.4	177.4	158.1	93.2
<i>Growth per annum (per cent)</i>										
1977–2004	3.55	2.49	0.59	3.44	3.69	2.12	7.48	2.95	3.40	2.13
2004–2008	0.65	0.05	5.34	0.67	5.50	6.73	12.63	6.09	1.16	2.26
1977–2008	3.17	2.17	1.19	3.08	3.93	2.70	8.13	3.35	3.11	2.15

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

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Adelaide (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport				PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Light rail	Bus	Sub-total		
1977	7.54	0.42	0.11	8.07	0.16	0.02	0.43	0.61	8.68	936
1978	7.75	0.44	0.11	8.30	0.16	0.02	0.43	0.61	8.91	943
1979	7.83	0.46	0.11	8.40	0.16	0.02	0.46	0.63	9.04	949
1980	7.84	0.44	0.11	8.38	0.18	0.02	0.46	0.67	9.05	955
1981	7.89	0.43	0.10	8.42	0.19	0.02	0.53	0.74	9.16	962
1982	8.27	0.41	0.10	8.78	0.20	0.02	0.56	0.78	9.56	971
1983	8.22	0.40	0.10	8.72	0.18	0.02	0.48	0.68	9.39	981
1984	8.50	0.42	0.09	9.01	0.18	0.02	0.50	0.70	9.71	991
1985	8.82	0.45	0.09	9.36	0.18	0.02	0.48	0.67	10.04	1000
1986	9.03	0.45	0.09	9.57	0.18	0.02	0.50	0.70	10.26	1010
1987	9.16	0.45	0.08	9.69	0.18	0.02	0.49	0.68	10.37	1019
1988	9.40	0.47	0.08	9.95	0.13	0.02	0.51	0.66	10.61	1029
1989	9.68	0.46	0.07	10.21	0.14	0.02	0.48	0.64	10.85	1038
1990	9.74	0.44	0.07	10.25	0.14	0.02	0.51	0.67	10.92	1041
1991	9.88	0.43	0.06	10.37	0.12	0.02	0.54	0.68	11.05	1051
1992	10.02	0.43	0.06	10.51	0.12	0.01	0.54	0.67	11.19	1057
1993	10.33	0.44	0.06	10.83	0.13	0.01	0.52	0.66	11.49	1063
1994	10.59	0.46	0.06	11.11	0.15	0.01	0.53	0.70	11.81	1065
1995	10.92	0.50	0.06	11.48	0.16	0.01	0.55	0.72	12.21	1066
1996	11.08	0.50	0.06	11.64	0.15	0.01	0.55	0.72	12.36	1078
1997	11.15	0.49	0.06	11.70	0.15	0.01	0.55	0.72	12.41	1084
1998	11.61	0.49	0.05	12.16	0.14	0.01	0.56	0.72	12.87	1091
1999	11.69	0.49	0.05	12.23	0.14	0.01	0.54	0.69	12.92	1097
2000	11.99	0.50	0.05	12.54	0.13	0.01	0.54	0.68	13.22	1102
2001	11.81	0.49	0.05	12.36	0.13	0.01	0.55	0.70	13.06	1105
2002	12.06	0.51	0.06	12.63	0.15	0.02	0.57	0.73	13.35	1114
2003	12.32	0.50	0.05	12.88	0.16	0.02	0.58	0.76	13.64	1120
2004	12.86	0.52	0.06	13.43	0.18	0.02	0.58	0.78	14.21	1124
2005	12.85	0.51	0.06	13.42	0.18	0.02	0.59	0.79	14.21	1132
2006	12.73	0.50	0.07	13.30	0.19	0.02	0.62	0.83	14.12	1143
2007	12.80	0.49	0.07	13.36	0.19	0.02	0.63	0.83	14.20	1154
2008	12.73	0.49	0.07	13.29	0.19	0.02	0.64	0.85	14.14	1163
<i>Growth (per cent)</i>										
1977–2004	70.4	23.7	-46.1	66.4	13.9	-27.9	36.3	28.1	63.7	20.1
2004–2008	-1.0	-5.4	18.9	-1.1	4.1	19.1	10.5	9.2	-0.5	3.5
1977–2008	68.8	17.0	-36.0	64.7	18.6	-14.1	50.6	39.9	62.9	24.2
<i>Growth per annum (per cent)</i>										
1977–2004	1.99	0.79	-2.27	1.90	0.48	-1.20	1.15	0.92	1.84	0.68
2004–2008	-0.24	-1.39	4.41	-0.26	1.02	4.46	2.53	2.22	-0.12	0.85
1977–2008	1.70	0.51	-1.43	1.62	0.55	-0.49	1.33	1.09	1.59	0.70

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Perth (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport				PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Bus	Ferry	Sub-total		
1977	7.66	0.57	0.11	8.34	0.09	0.44	0.0006	0.54	8.88	842
1978	7.98	0.61	0.11	8.70	0.10	0.53	0.0006	0.63	9.34	864
1979	8.19	0.65	0.11	8.94	0.10	0.52	0.0006	0.63	9.57	876
1980	8.32	0.62	0.12	9.05	0.09	0.56	0.0006	0.65	9.70	891
1981	8.49	0.62	0.12	9.23	0.08	0.58	0.0006	0.66	9.89	911
1982	9.03	0.61	0.13	9.77	0.07	0.56	0.0006	0.63	10.40	937
1983	9.11	0.60	0.13	9.84	0.08	0.57	0.0006	0.65	10.49	965
1984	9.56	0.64	0.14	10.34	0.11	0.50	0.0006	0.60	10.94	986
1985	10.08	0.69	0.14	10.91	0.11	0.49	0.0005	0.59	11.50	1007
1986	10.47	0.70	0.13	11.30	0.12	0.53	0.0006	0.65	11.94	1034
1987	10.77	0.71	0.11	11.60	0.12	0.55	0.0007	0.67	12.27	1067
1988	11.23	0.75	0.10	12.08	0.12	0.55	0.0007	0.67	12.74	1101
1989	11.73	0.75	0.08	12.57	0.11	0.59	0.0007	0.70	13.27	1134
1990	11.99	0.76	0.07	12.82	0.11	0.63	0.0007	0.74	13.55	1164
1991	11.95	0.73	0.06	12.75	0.10	0.61	0.0007	0.71	13.46	1180
1992	12.34	0.74	0.06	13.15	0.12	0.60	0.0006	0.72	13.87	1197
1993	12.74	0.77	0.06	13.57	0.17	0.59	0.0006	0.77	14.34	1216
1994	13.08	0.81	0.06	13.96	0.30	0.59	0.0006	0.89	14.85	1236
1995	13.52	0.89	0.06	14.47	0.30	0.62	0.0005	0.92	15.40	1260
1996	13.73	0.92	0.06	14.71	0.30	0.61	0.0006	0.92	15.62	1295
1997	13.83	0.91	0.06	14.80	0.38	0.62	0.0007	1.00	15.80	1316
1998	13.85	0.91	0.06	14.83	0.36	0.64	0.0008	1.00	15.83	1335
1999	14.14	0.93	0.06	15.13	0.36	0.64	0.0006	1.00	16.13	1355
2000	14.56	0.95	0.06	15.56	0.37	0.67	0.0006	1.04	16.60	1373
2001	14.48	0.94	0.06	15.48	0.38	0.71	0.0007	1.09	16.58	1389
2002	14.88	0.97	0.06	15.92	0.38	0.73	0.0006	1.11	17.03	1412
2003	15.33	0.98	0.06	16.38	0.37	0.76	0.0006	1.13	17.51	1432
2004	16.12	1.01	0.07	17.20	0.37	0.79	0.0006	1.15	18.36	1456
2005	16.24	1.00	0.07	17.31	0.38	0.82	0.0006	1.20	18.51	1481
2006	16.20	1.02	0.08	17.30	0.40	0.84	0.0006	1.24	18.54	1514
2007	16.41	1.02	0.08	17.51	0.42	0.85	0.0007	1.26	18.77	1546
2008	16.44	1.02	0.09	17.55	0.52	0.88	0.0006	1.40	18.95	1576
<i>Growth (per cent)</i>										
1977–2004	110.4	77.0	–36.6	106.2	299.4	77.6	–7.0	115.4	106.7	72.9
2004–2008	2.0	1.0	22.4	2.0	41.8	11.5	–0.2	21.1	3.2	8.2
1977–2008	114.6	78.7	–22.4	110.3	466.5	98.1	–7.2	161.0	113.4	87.1
<i>Growth per annum (per cent)</i>										
1977–2004	2.79	2.14	–1.68	2.72	5.26	2.15	–0.27	2.88	2.73	2.05
2004–2008	0.49	0.25	5.19	0.50	9.13	2.77	–0.05	4.91	0.79	2.00
1977–2008	2.49	1.89	–0.82	2.43	5.75	2.23	–0.24	3.14	2.47	2.04

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Hobart (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport			PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Bus	Sub-total		
1977	1.10	0.07	0.01	1.18	0.0001	0.12	0.12	1.31	171
1978	1.15	0.08	0.01	1.23		0.13	0.13	1.36	173
1979	1.17	0.08	0.01	1.26		0.12	0.12	1.38	174
1980	1.19	0.08	0.01	1.27		0.12	0.12	1.39	175
1981	1.21	0.08	0.01	1.30		0.12	0.12	1.41	177
1982	1.29	0.07	0.01	1.37		0.10	0.10	1.47	178
1983	1.30	0.07	0.01	1.38		0.10	0.10	1.48	179
1984	1.36	0.08	0.01	1.45		0.10	0.10	1.55	181
1985	1.43	0.08	0.01	1.53		0.11	0.11	1.63	182
1986	1.49	0.08	0.01	1.58		0.11	0.11	1.69	184
1987	1.53	0.08	0.01	1.62		0.11	0.11	1.73	185
1988	1.59	0.09	0.01	1.69		0.11	0.11	1.79	186
1989	1.66	0.08	0.01	1.76		0.10	0.10	1.86	188
1990	1.69	0.09	0.01	1.79		0.11	0.11	1.90	188
1991	1.65	0.08	0.01	1.75		0.10	0.10	1.85	190
1992	1.72	0.08	0.01	1.81		0.10	0.10	1.92	191
1993	1.77	0.09	0.01	1.87		0.10	0.10	1.97	193
1994	1.82	0.09	0.01	1.92		0.11	0.11	2.03	193
1995	1.88	0.10	0.01	1.99		0.11	0.11	2.10	194
1996	1.91	0.10	0.01	2.02		0.11	0.11	2.13	196
1997	1.93	0.10	0.01	2.03		0.10	0.10	2.14	196
1998	1.88	0.09	0.01	1.98		0.10	0.10	2.08	196
1999	1.97	0.09	0.01	2.07		0.10	0.10	2.17	196
2000	2.03	0.09	0.01	2.13		0.10	0.10	2.23	196
2001	1.98	0.09	0.01	2.08		0.10	0.10	2.18	197
2002	2.01	0.09	0.01	2.11		0.10	0.10	2.21	198
2003	2.03	0.09	0.01	2.14		0.10	0.10	2.24	200
2004	2.11	0.09	0.01	2.21		0.10	0.10	2.32	202
2005	2.10	0.10	0.01	2.20		0.10	0.10	2.31	204
2006	2.06	0.09	0.01	2.17		0.10	0.10	2.27	206
2007	2.06	0.09	0.01	2.17		0.10	0.10	2.27	209
2008	2.04	0.09	0.01	2.14		0.10	0.10	2.24	211
				<i>Growth (per cent)</i>					
1977–2004	91.8	31.0	–12.5	87.2		–15.9	–16.0	77.4	18.1
2004–2008	–3.4	–0.6	14.7	–3.3		–1.3	–1.3	–3.2	4.0
1977–2008	85.1	30.2	0.4	81.1		–17.0	–17.1	71.8	22.9
				<i>Growth per annum (per cent)</i>					
1977–2004	2.44	1.01	–0.49	2.35		–0.64	–0.64	2.15	0.62
2004–2008	–0.87	–0.16	3.49	–0.82		–0.33	–0.33	–0.80	0.99
1977–2008	2.01	0.85	0.01	1.93		–0.60	–0.60	1.76	0.67

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Darwin (billions of passenger kilometres)

Financial Year	Private motor vehicles				UPT	PKM Total	Population (thousands)	
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Bus			
1977	0.33	0.05	0.01	0.39	0.02	0.41	55	
1978	0.34	0.06	0.01	0.41	0.02	0.43	57	
1979	0.36	0.06	0.01	0.43	0.02	0.45	59	
1980	0.37	0.06	0.01	0.44	0.02	0.46	62	
1981	0.38	0.06	0.01	0.45	0.03	0.48	64	
1982	0.41	0.06	0.01	0.48	0.03	0.51	67	
1983	0.42	0.06	0.01	0.48	0.03	0.52	71	
1984	0.44	0.06	0.01	0.51	0.03	0.55	74	
1985	0.47	0.07	0.01	0.55	0.04	0.59	78	
1986	0.50	0.07	0.01	0.57	0.04	0.61	82	
1987	0.52	0.07	0.01	0.60	0.04	0.64	83	
1988	0.54	0.07	0.01	0.63	0.05	0.67	84	
1989	0.57	0.07	0.01	0.66	0.05	0.71	86	
1990	0.59	0.07	0.01	0.68	0.06	0.73	87	
1991	0.62	0.07	0.01	0.70	0.06	0.76	88	
1992	0.67	0.07	0.01	0.75	0.06	0.81	89	
1993	0.68	0.07	0.01	0.77	0.06	0.83	90	
1994	0.70	0.08	0.01	0.79	0.06	0.84	91	
1995	0.72	0.09	0.01	0.81	0.06	0.87	93	
1996	0.72	0.09	0.01	0.82	0.07	0.89	96	
1997	0.73	0.09	0.01	0.83	0.07	0.89	99	
1998	0.76	0.09	0.01	0.85	0.07	0.92	101	
1999	0.77	0.09	0.01	0.86	0.07	0.93	103	
2000	0.80	0.09	0.01	0.89	0.07	0.96	105	
2001	0.79	0.09	0.01	0.89	0.07	0.96	107	
2002	0.82	0.09	0.01	0.91	0.07	0.99	108	
2003	0.85	0.09	0.01	0.94	0.08	1.02	108	
2004	0.89	0.09	0.01	0.99	0.08	1.06	110	
2005	0.90	0.09	0.01	0.99	0.08	1.07	111	
2006	0.89	0.09	0.01	0.99	0.08	1.07	114	
2007	0.91	0.09	0.01	1.01	0.08	1.09	117	
2008	0.91	0.09	0.01	1.01	0.08	1.09	120	
			<i>Growth (per cent)</i>					
1977–2004	172.0	69.9	60.5	156.4	273.1	162.3	99.9	
2004–2008	2.2	3.3	20.6	2.4	4.0	2.6	9.4	
1977–2008	178.0	75.4	93.6	162.7	288.1	169.0	118.7	
			<i>Growth per annum (per cent)</i>					
1977–2004	3.78	1.98	1.77	3.55	5.00	3.64	2.60	
2004–2008	0.54	0.80	4.80	0.61	0.99	0.63	2.28	
1977–2008	3.35	1.83	2.15	3.16	4.47	3.24	2.56	

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Canberra (billions of passenger kilometres)

Financial Year	Private motor vehicles			Sub-total	UPT	PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles		Bus		
1977	1.89	0.12	0.02	2.02	0.11	2.13	212
1978	2.00	0.12	0.02	2.14	0.12	2.26	217
1979	2.07	0.13	0.02	2.23	0.12	2.35	220
1980	2.13	0.13	0.02	2.29	0.14	2.43	224
1981	2.21	0.13	0.03	2.36	0.12	2.49	227
1982	2.38	0.13	0.03	2.53	0.13	2.66	231
1983	2.43	0.12	0.03	2.58	0.16	2.75	237
1984	2.58	0.13	0.03	2.75	0.18	2.93	244
1985	2.75	0.14	0.03	2.93	0.19	3.13	249
1986	2.90	0.15	0.03	3.08	0.19	3.26	257
1987	3.01	0.15	0.03	3.20	0.20	3.40	265
1988	3.18	0.16	0.03	3.37	0.21	3.58	272
1989	3.36	0.16	0.03	3.55	0.21	3.76	277
1990	3.47	0.16	0.04	3.66	0.21	3.88	281
1991	3.44	0.15	0.03	3.62	0.22	3.83	288
1992	3.61	0.15	0.03	3.79	0.21	4.01	293
1993	3.72	0.15	0.03	3.91	0.21	4.12	297
1994	3.82	0.15	0.03	4.00	0.21	4.21	300
1995	3.94	0.17	0.03	4.13	0.22	4.35	303
1996	3.99	0.17	0.03	4.19	0.26	4.44	308
1997	4.02	0.16	0.03	4.21	0.27	4.48	309
1998	3.95	0.16	0.03	4.14	0.27	4.41	310
1999	4.10	0.16	0.03	4.29	0.26	4.54	312
2000	4.12	0.16	0.03	4.31	0.26	4.57	315
2001	4.06	0.16	0.03	4.25	0.25	4.50	318
2002	4.14	0.16	0.03	4.33	0.26	4.59	321
2003	4.24	0.16	0.03	4.43	0.27	4.70	323
2004	4.45	0.17	0.03	4.65	0.28	4.93	324
2005	4.46	0.16	0.03	4.65	0.29	4.94	326
2006	4.42	0.16	0.04	4.62	0.29	4.91	330
2007	4.45	0.16	0.04	4.65	0.29	4.93	334
2008	4.43	0.16	0.04	4.63	0.29	4.92	338
<i>Growth (per cent)</i>							
1977–2004	135.7	43.0	64.5	129.7	158.8	131.1	52.6
2004–2008	–0.5	–3.5	17.3	–0.4	4.0	–0.2	4.3
1977–2008	134.6	38.0	93.0	128.7	169.1	130.7	59.1
<i>Growth per annum (per cent)</i>							
1977–2004	3.23	1.33	1.86	3.13	3.58	3.15	1.58
2004–2008	–0.11	–0.88	4.08	–0.11	0.98	–0.05	1.05
1977–2008	2.79	1.04	2.14	2.70	3.24	2.73	1.51

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

Total Metropolitan (billions of passenger kilometres)

Financial Year	Private motor vehicles				Urban public transport					PKM Total	Population (thousands)
	Cars	Commercial vehicles	Motor-cycles	Sub-total	Heavy rail	Light rail	Bus	Ferry	Sub-total		
1977	71.45	4.39	0.80	76.63	5.72	0.55	3.68	0.11	10.07	86.70	9133
1978	74.44	4.66	0.81	79.91	5.57	0.54	3.85	0.12	10.08	89.99	9258
1979	76.43	4.89	0.81	82.13	5.49	0.55	3.90	0.12	10.05	92.19	9369
1980	77.87	4.67	0.87	83.41	5.84	0.54	4.02	0.13	10.53	93.94	9485
1981	79.65	4.64	0.92	85.21	5.91	0.55	4.12	0.13	10.70	95.92	9605
1982	84.48	4.56	0.98	90.01	6.01	0.56	4.16	0.14	10.88	100.89	9734
1983	85.05	4.45	0.97	90.48	5.83	0.55	4.18	0.14	10.70	101.18	9866
1984	88.63	4.74	0.97	94.35	5.84	0.56	4.20	0.13	10.73	105.08	9993
1985	92.76	5.04	0.97	98.77	5.95	0.62	4.25	0.13	10.95	109.72	10118
1986	96.35	5.10	0.95	102.40	6.39	0.64	4.37	0.13	11.53	113.93	10253
1987	99.17	5.17	0.93	105.27	6.62	0.65	4.50	0.12	11.90	117.17	10404
1988	103.26	5.41	0.91	109.57	6.95	0.67	4.67	0.12	12.41	121.98	10560
1989	107.70	5.39	0.89	113.98	7.28	0.70	4.81	0.11	12.90	126.88	10710
1990	110.09	5.36	0.88	116.33	7.27	0.58	4.89	0.11	12.84	129.17	10782
1991	110.26	5.17	0.79	116.23	7.32	0.63	4.97	0.11	13.03	129.26	10912
1992	112.45	5.25	0.79	118.49	7.17	0.58	4.99	0.10	12.85	131.34	11038
1993	115.98	5.40	0.79	122.17	6.96	0.54	4.95	0.10	12.56	134.72	11159
1994	119.00	5.66	0.78	125.44	7.20	0.54	5.05	0.11	12.90	138.34	11265
1995	122.82	6.20	0.77	129.80	7.60	0.54	5.26	0.12	13.52	143.32	11398
1996	124.65	6.32	0.75	131.72	7.80	0.55	5.36	0.12	13.83	145.55	11637
1997	125.73	6.21	0.75	132.69	8.05	0.54	5.44	0.13	14.16	146.85	11765
1998	127.24	6.25	0.72	134.20	8.00	0.54	5.52	0.12	14.19	148.39	11892
1999	130.32	6.32	0.69	137.33	8.19	0.56	5.49	0.12	14.36	151.69	12035
2000	133.24	6.43	0.70	140.37	8.52	0.60	5.58	0.12	14.83	155.19	12182
2001	132.11	6.38	0.72	139.20	9.08	0.62	5.69	0.14	15.52	154.73	12319
2002	135.58	6.60	0.76	142.94	8.85	0.62	5.66	0.13	15.27	158.21	12504
2003	139.21	6.62	0.75	146.57	8.94	0.63	5.75	0.13	15.44	162.02	12655
2004	146.00	6.81	0.81	153.63	9.10	0.63	5.82	0.13	15.69	169.32	12797
2005	146.64	6.72	0.85	154.21	9.22	0.64	5.96	0.14	15.95	170.16	12958
2006	145.90	6.77	0.92	153.59	9.73	0.66	6.14	0.14	16.66	170.24	13144
2007	147.42	6.77	0.96	155.15	10.31	0.68	6.24	0.14	17.36	172.51	13363
2008	147.32	6.84	0.99	155.14	11.17	0.69	6.45	0.14	18.44	173.59	13568
<i>Growth (per cent)</i>											
1977–2004	104.4	55.3	1.9	100.5	59.0	13.9	58.2	19.1	55.8	95.3	40.1
2004–2008	0.9	0.3	21.1	1.0	22.7	9.9	10.8	3.5	17.6	2.5	6.0
1977–2008	106.2	55.8	23.4	102.5	95.1	25.2	75.3	23.3	83.2	100.2	48.5
<i>Growth per annum (per cent)</i>											
1977–2004	2.68	1.64	0.07	2.61	1.73	0.48	1.71	0.65	1.66	2.51	1.26
2004–2008	0.22	0.08	4.91	0.25	5.24	2.39	2.59	0.87	4.13	0.62	1.47
1977–2008	2.36	1.44	0.68	2.30	2.18	0.73	1.83	0.68	1.97	2.26	1.28

Note: All bus task estimates are scaled up from purely 'transit bus' levels (typically by at least 10 per cent in aggregate terms) to allow for the contribution due to other commercial, non-transit buses (typically smaller vehicles – e.g. charter/hire buses and minibuses).

BITRE Estimates based on ABS Survey of Motor Vehicle Use and Census of Motor Vehicles, and fuel sales data (from RET and ABARE), with UPT sources given in BTRE Report 107, BTRE Working Paper 71, BITRE Working Paper 75.

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ISSN 1440-9593

March2009/Infrastructure08437

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