2003 Fact Sheet: Passenger Transport Activity in Australia

Version: 27 January 2004

Public Transport in Australia plays a pivotal role in our society. It impacts directly and indirectly on our economy, our environment and on society as a whole. This report updates the 1999 FACT SHEET prepared by the Institute of Transport Studies (ITS). Unlike previous fact sheets that concentrated on the private bus and coach industry, the 2003 fact sheet has a broader focus, showing the contribution of the Australian bus and coach industry to the total Australian passenger transport task. Australia is a very car-reliant country and there is a need for Public Transport as a whole to increase its share of the passenger task. The bus and coach industry has the potential to play a very important part in diverting car drivers and passengers from their vehicles. The bus and coach industry is more than bus and coach operators and includes, in the supply chain, chassis and body importers and manufacturers, and associated service providers. The data presented have been obtained from studies conducted by ITS-Sydney, the Bus Industry Confederation (BIC) and from publications produced by key government agencies such as ABS and BTRE and industry sources.

The Bus Industry Confederation (BIC)

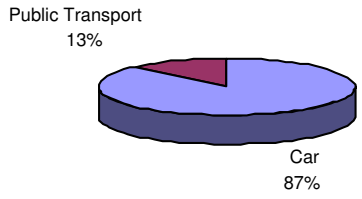
In 2000, the Australian Bus and Coach Association (ABCA) was restructured to enable suppliers to the operators to become members. ABCA was renamed the Bus Operators Group within the Confederation with BIC now recognized as the peak national body, representing the whole of the industry. BIC represents in excess of 3,000 businesses employing over 30,000 people.

The private bus industry plays a major role in the delivery of public passenger transport throughout Australia. These services are delivered through a variety of commercial and non-commercial contracts by accredited route service, dedicated school service, and charter/tour operators.

Contribution of the Bus and Coach Industry to Passenger Service Delivery in Australia

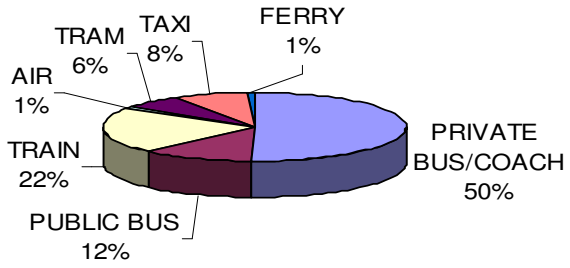
Car continues to dominate the Australian land passenger transport task with 87% of the total share of passenger trips, leaving public transport (PT) responsible for only 13% of Australia's passenger trips[1].

Figure 1. Public Transport and Car Trip Shares

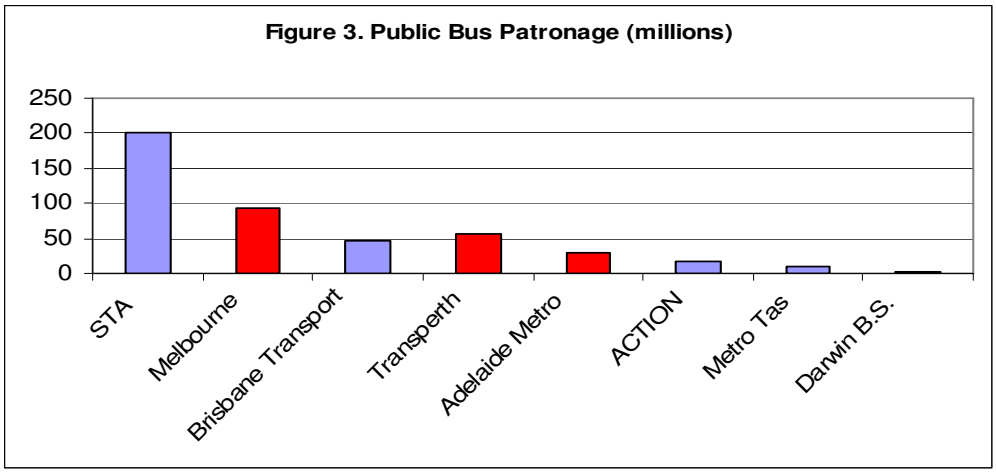


The total number of passenger trips per year for both public and private buses and coaches is approximately 1.4 billion[2]. The private bus sector transports about 1.16 billion passengers a year representing 50% of all public transport trips in Australia, (see Figure 2).

Figure 2. Public Passenger Transport Trip Share

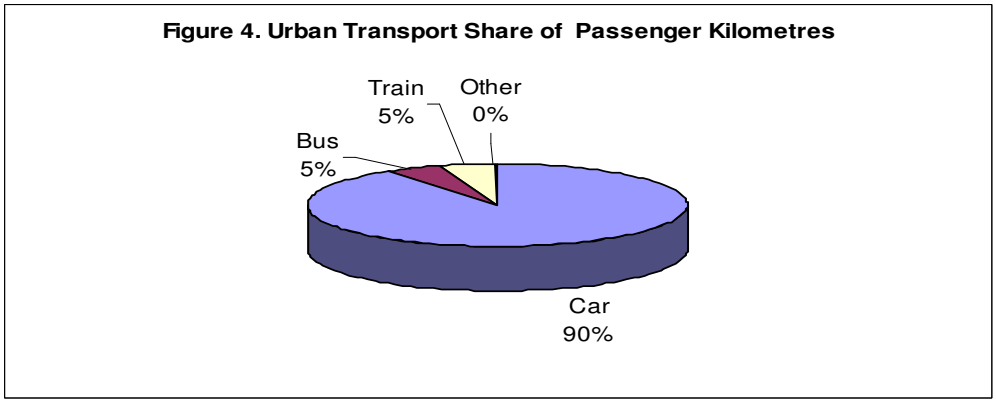


The total number of passengers per annum carried by public (urban) buses is approximately 277 milllion[3]. Previous urban public operators in Melbourne, Adelaide and Perth have been replaced by competitively tendered private operations. The majority of bus passenger trips in Melbourne prior to this were already taken up by the private sector. The total numbers of passengers for these three cities are respectively 92m, 30m and 56m passengers per annum. Figure 3 illustrates the patronage of public bus operators plus Melbourne buses, Transperth and Adelaide Metro.



Note: Melbourne, Transperth and Adelaide Metro are not government services. They are operated by the private sector.

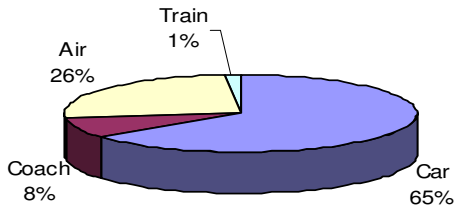
Roads continue to be the main infrastructure for servicing the movement of PT with bus and coach outweighing rail by a ratio of 2:1 in terms of passenger kilometres (PKM)[4]. The PT share varies between metropolitan and non-metropolitan areas with less than 10% of Sydney trips being by PT (despite 80% of commuters to the CBD where 15% of jobs are located, using public transport). Bus and train represent a similar share (5% each) of PKM within urban areas (see Figure 4).



Source: BTRE Report 107 and BTRE WP 51.

However, in non-urban areas, this share is shifted considerably towards the coach industry. Air transport is responsible for a quarter of non-urban PKM (see Figure 5).

Figure 5. Non-urban Transport Share of Passenger Kilometres



Source: BTRE Report 107 and BTRE WP 51.

The total PKM for buses and coaches is approximately 19.3 billion[5] compared to 9.67 billion for rail[6]. Non-urban bus patronage totalled 11.7 billion PKM, (unchanged since 1987-88), compared to non-urban rail patronage of 2 billion PKM (down from 2.9 billion in 1987-88) [7].

Tables 1 and 2 illustrate travel from non-metropolitan to metropolitan areas, and travel between non-metropolitan areas. The car is the over-riding mode of choice for all states and territories. Air transport has a significant share in the Northern Territory of non-metropolitan to metropolitan travel, (33%). The car accounts for over 94% of trips between non-metropolitan areas in each state, with the exception of the Northern Territory, (Air 9.1%). The Coach industry takes up most of the remainder.

Table 1. Non-Metropolitan to Metropolitan Travel by Mode and State (trips)

%	NSW	VIC	QLD	SA	WA	NT	TAS
Car	83.7	84.4	84.3	90.1	86.8	61.8	78.1
Rail	6.2	7.4	3.2	0.4	1.1	0.2	0
Coach	4.5	3.9	5.6	3.2	5.1	4	4.3
Air	5.2	3.7	5.6	5.7	6	33.3	15.9
Other	0.4	0.6	1.3	0.6	0.9	0.6	1.6

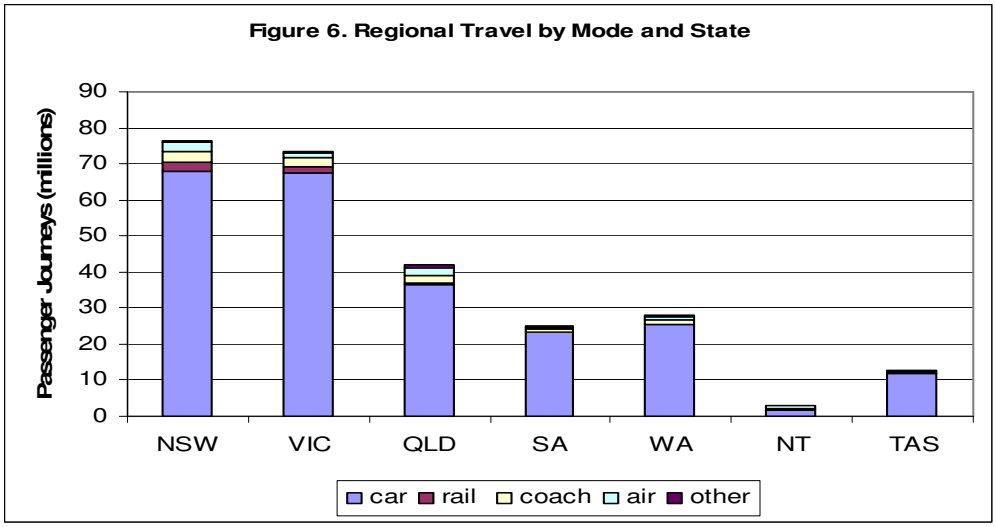
Source: BTRE WP 51. Note: Does not include inter-capital or inter-metropolitan travel.

Table 2. Non-metropolitan to Non-Metropolitan Travel by Mode and State (trips)

%	NSW	VIC	QLD	SA	WA	NT	TAS
Car	96.4	95.1	94.1	96.9	94.9	80.5	96.5
Rail	0.4	0.7	0.2	0.0	0.1	0.2	0.0
Coach	2.6	3.3	3.3	1.6	2.7	5.9	2.3
Air	0.5	0.7	0.6	0.9	1.1	9.1	0.8
Other	0.1	0.2	1.8	0.6	1.1	4.3	0.3

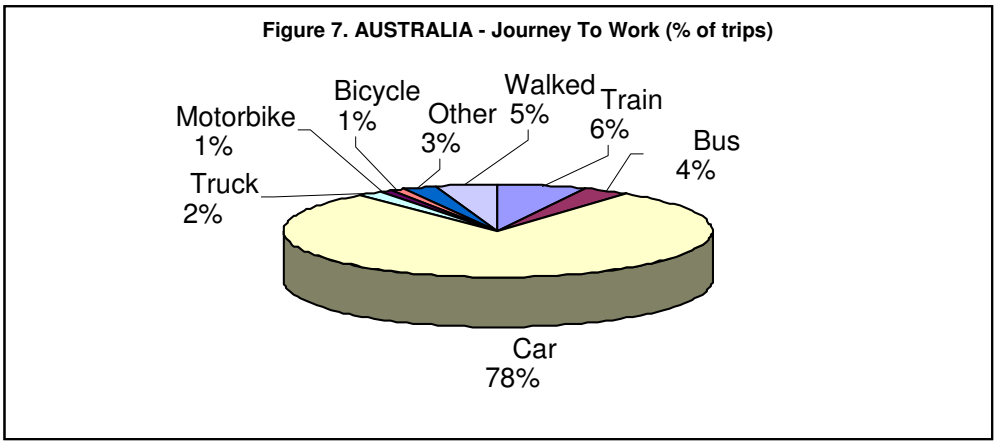
Source: BTRE WP 51. Note: Does not include inter-capital or inter-metropolitan travel.

Figure 6 shows the dominance of the private car in regional travel in all states, with a 90% share. The coach has the next largest share with 4.2%, followed by air with 3.6%.



Source: BTRE WP 51. Note: Inter-capital or inter-metropolitan travel is excluded.

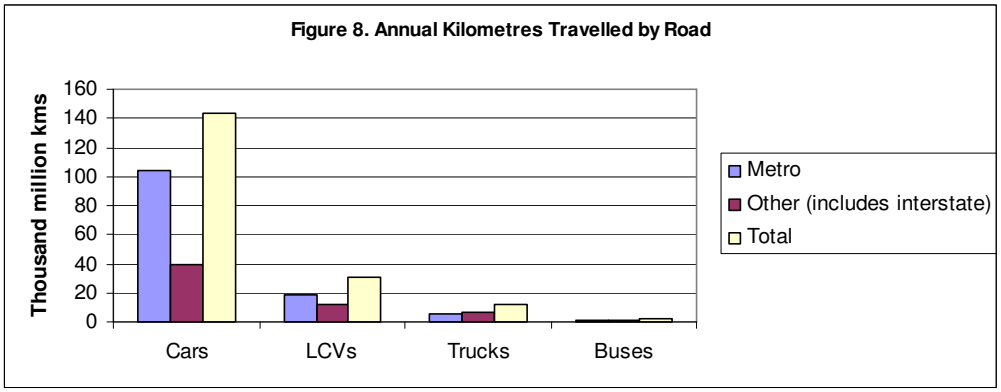
The main non-discretionary trip purpose, the journey to work, is dominated Australia-wide by the car (78%) for all passenger trips, as is shown in Figure 7.



Source: ABS Census 2001.

Road Use by the Bus and Coach Industry

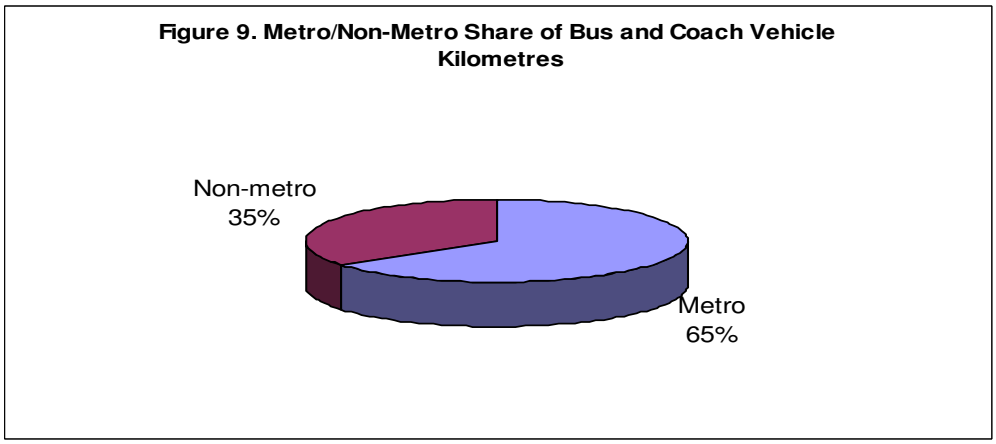
All buses and coaches, private and public, make up an extremely small but important proportion of all road users, both passenger and commercial vehicle movements. The car represents 80% of metro, 68% of non-metro and 76% of total road vehicle kilometres (VKM). 72% of car VKM is in metropolitan areas, as opposed to 65% for bus VKM (1.2 bkm). Light Commercial Vehicles (LCVs) and Trucks represent 16% and 6% of total road VKM.



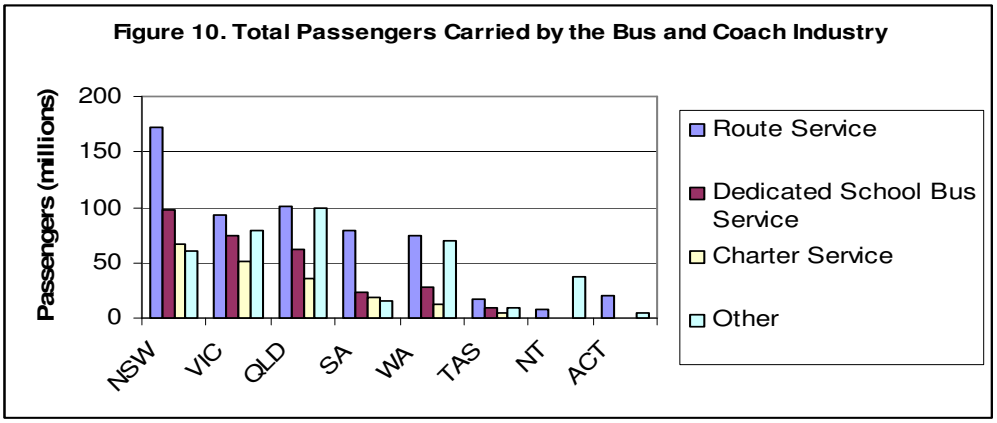
Source: ABS Survey of Motor Vehicle Use, 9208, 2003.

The Service Provided by the Bus and Coach Industry

Over 1.8 billion annual (VKM) of bus and coach activity occurs throughout Australia (2.7 times that of rail), with 65% in metropolitan areas[8]. Given a total of 19.3 billion (PKM) per annum this is equivalent on average to 10.72 PKM per bus and coach km. This average varies from a high of 18.4 for non-metro areas (0.637bn VKM delivering 11.7bn PKMs) to a low of 6.3 for metro areas (1.20bn VKM delivering 7.6bn PKMs). The average bus or coach travels 36,200 km per annum (2001).

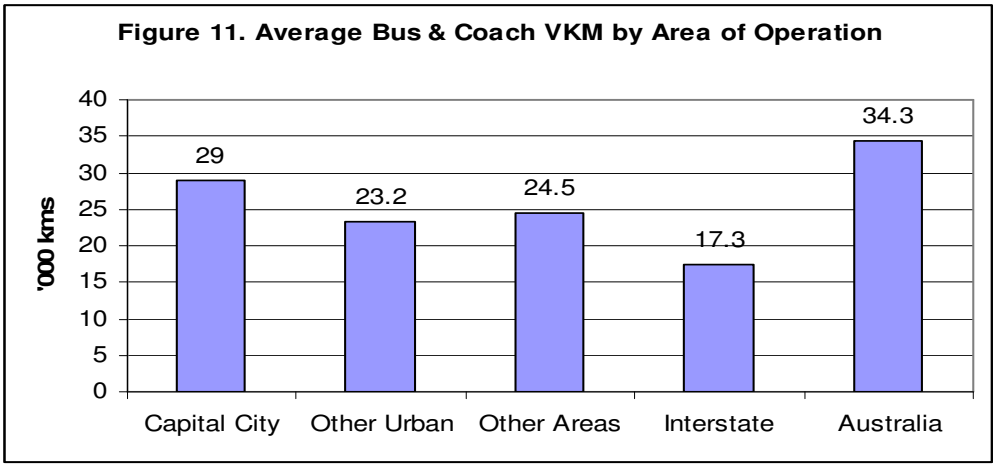


Source: ABS Survey of Motor Vehicle Use, 9208, 2003.



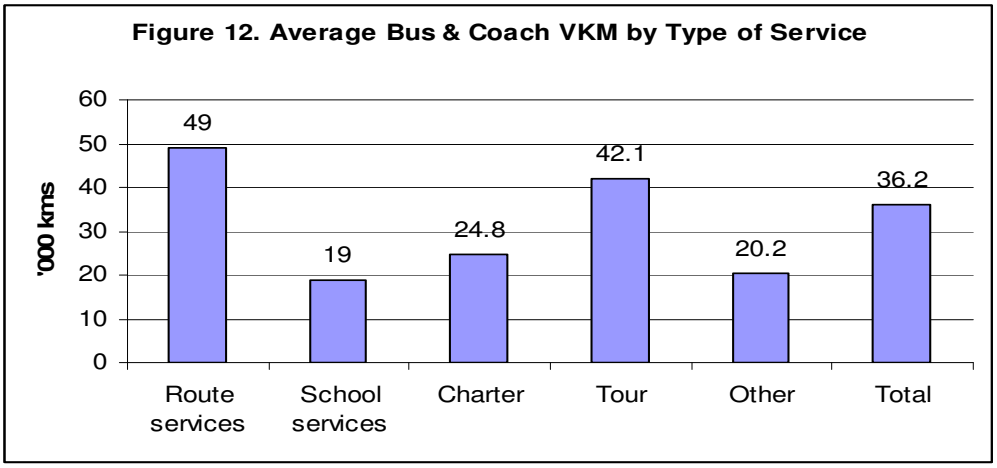
Source: ABC, 2000 Directory of Bus and Coach Manufacturers and Suppliers, from ABS and advice from ABC Australia (Andrew Stewart).

A large proportion (39%), of passengers carried by the industry is on scheduled route services. Figure 10 illustrates the numbers of passengers carried by each service type for each State and Territory. Private operators provide over 80% of the dedicated school bus services. Charter activity has become essential for the financial viability of many private bus operators who use charter revenue to cross-subsidise their services contracted by government. The category 'other' is over 35% of all passenger trips per annum and the ABS states that it includes trips which are free of charge as well as tours. Therefore it includes a large amount of community transport activity, and a large number of disparate activities (e.g. church outings). Under this definition, it would also include services such as CAT in WA, Cityloop in Brisbane CBD, and Adelaide Free (3.4mill trips), which are all free of charge. The growth of the 'informal' bus sector in recent years is most noticeable.



Source: ABS Survey of Motor Vehicle Use, 9208, 2003.

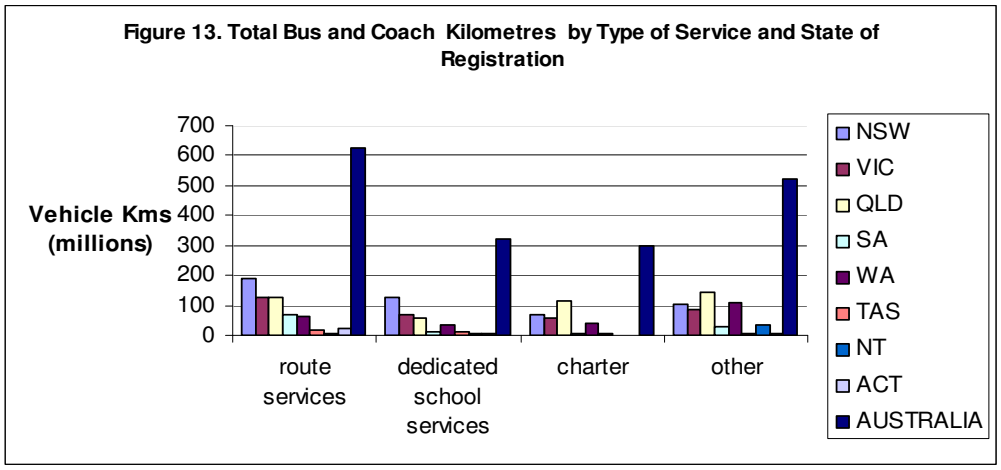
Capital cities represent the highest share of vehicle kilometres as is illustrated in Figure 11**.** This is supported in Figure 12**,** below with route services averaging the highest vkm.



Source: ABS Survey of Motor Vehicle Use, 9208, 2003.

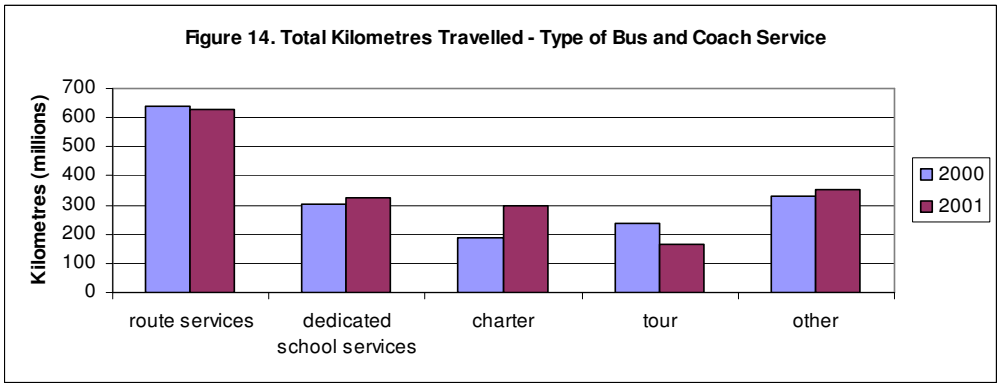
Each route bus, school bus, charter bus and tour bus travels an average of 49,000 kms, 19,000 kms, 24,800 kms, and 42,100 kms per annum respectively[8]. These figures are averages only and it is most likely that for the most part, operators running interstate services would argue that they average considerably more than 17,300 kms a year. It is likely that this figure has been distorted due to a few small operators running short services (e.g. Canberra to Sydney) and possibly on an irregular basis. This argument is supported by the average given for tour services.

A comparison of *total passengers* with total VKM indicates that there is less than 1 passenger trip per bus and coach VKM on average for both scheduled route (0.90) and dedicated school bus services (0.94). This figure is higher in central urban areas (for example, Sydney Buses is 2.4[9]).



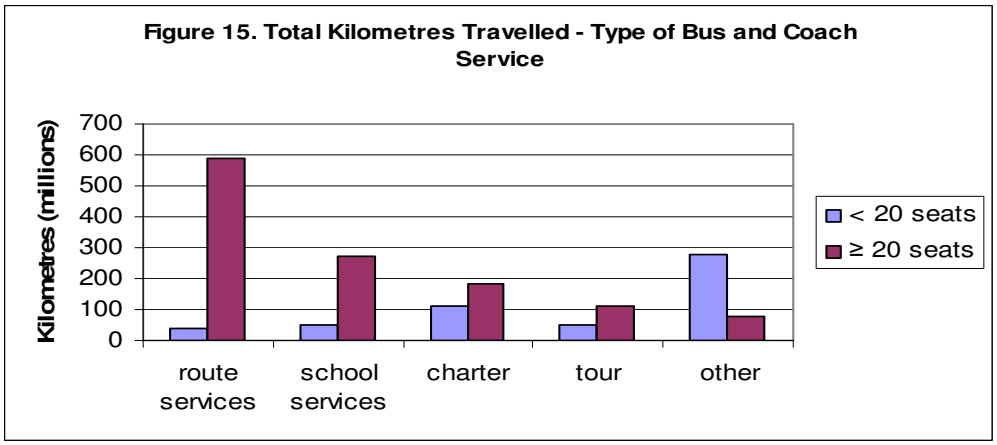
Source: ABS, Survey of Motor Vehicle Use, 9208, 2003.

Figure 13 above illustrates that route services carry the highest proportion of VKM (35%). The 'Other' category represents 29%, school services 18% and charter 17% (does not total 100 due to rounding). It is evident in Figure 14 that between 2000 and 2001 there was not much growth in VKM (1.8% in total). The largest rise in VKM was in the 'Charter' service (58%). 'Dedicated School Services' rose 5.9% and 'Other' rose 7.6%. 'Tour' dropped 30% and 'Route Services' dropped 2.3%.



Source: ABS Survey of Motor Vehicle Use, 9208, 2003.

Disaggregating the VKM for buses with ≥ 20 seats and < 20 seats helps in establishing the size of each service segment (see Figure 15). When only considering VKM by buses and coaches with 20 or more seats, 'Route Services' represent almost half of the total VKM (48%). 'School Services', 'Charter', 'Tour' and 'Other' represent 22%, 15%, 9% and 6% respectively. 78% of 'Other' VKM is by buses with less than 20 seats, suggesting the majority of this category is represented by such transport as Community Transport.



Source: ABS Survey of Motor Vehicle Use, 9208, 2003.

Community Transport

Community transport (a large proportion of which forms part of the 'other' category for bus service type) is a growing sector servicing a large number of community needs such as the distribution of food to the elderly, taking the disabled to education, shopping, medical and other destinations. With an ageing population this service sector is likely to be increasingly demanded. It is increasingly being considered as a form of public transport in its own right. Community Transport operators provide services using buses, minibuses, and cars (predominately by project owned buses). Unfortunately, figures for Community Transport as a whole are not presently collected which would give a good indication of the size of this industry.

Home and Community Care (HACC) is one major initiative providing services to the disadvantaged. Transport is one of these services. There is an approximate 60:40 Commonwealth/State ratio for funding for HACC services. For the 2002/03 financial year, there were approximately 3,000 HACC-funded organisations, providing services to about 400,000 people at any given time, or approximately 700,000 people per year. In 2001/02, $32.7 million was spent on delivering transport services to the HACC target population, which translates into approximately 3 million trips. The expanding nature of this type of transport is evident in the increases in 2002/03 – 4.7 million trips with a total national spending of $44.1 million[10].

In 2002/03 approximately 134 organisations in NSW received $21.6 million from HACC, $2.5 million from the Ministry of Transport under the Community Transport Program (CTP), $26.1 million from NSW Health for non-emergency transport, $14.4 from the Taxi Transport Subsidy Scheme and approximately $8 million from the Department of Veterans Affairs. This aid assisted 1.3 million trips by 200,000 clients. CTP funding is directed at the transport disadvantaged. Criteria for eligibility relate to mobility, isolation and age (targeted at young people). The Area Assistance Schemes fund specific programs that provide transport to particular destinations, e.g. Westmead Hospital[11].

Table 3. HACC Transport Funding 2002/03	
NSW	$21.6m
VIC	Data not available
QLD	$7.5m
SA*	$1.7m
WA	$5.6m
ACT	Data not available
TAS	$0.84m
NT	$0.56m

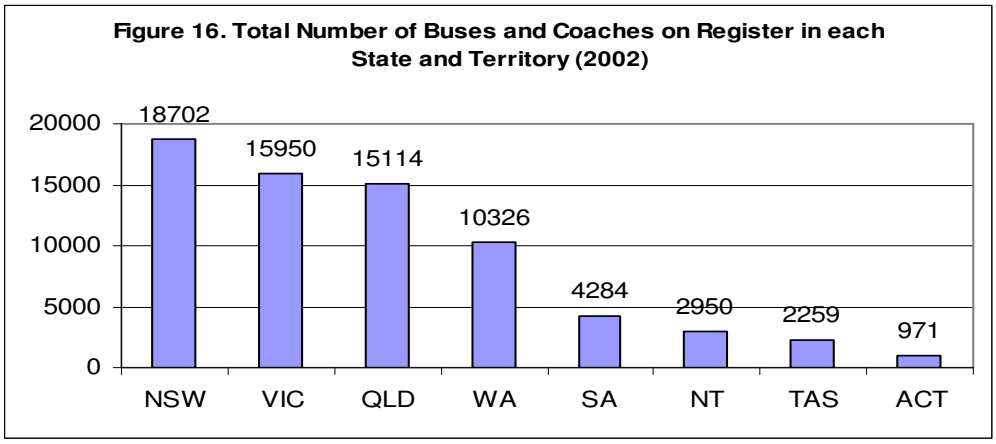
Source: 12.

Funding for transport is generally embedded within the costs of providing HACC services as a whole, and is therefore difficult to quantify separately. Transport is often only one output a provider may fund from the grant they receive. The above figure for South Australia for example, is a considerable underestimation as it only represents *transport specific services* and not incidental transport for other services.

Distribution of Buses and Coaches

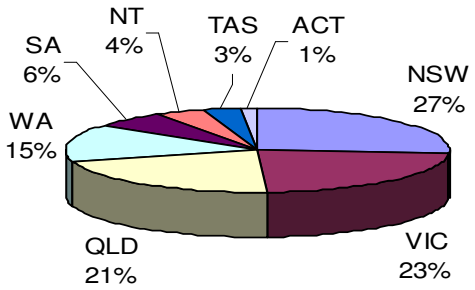
The ABS defines a bus as a motor vehicle constructed for the carriage of passengers. Included are all motor vehicles with 10 or more seats, including the driver's seat. Therefore it includes coaches.

There were 70,196 buses registered in Australia (2002) with close to three-quarters being registered in NSW (27%), VIC (23%) and QLD (21%). Figure 16 illustrates the number of buses on register in each state and territory and Figure 17 demonstrates the share for each State and Territory.



Source: ABS, Survey of Motor Vehicle Use, 9208, 2003.

Figure 17. Percentage of Buses and Coaches on Register by State and Territory (2002)

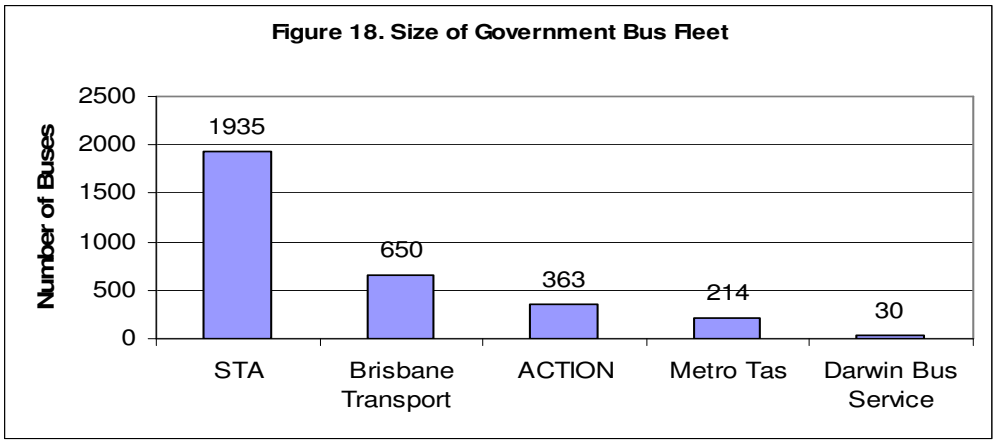


Source: ABS, Survey of Motor Vehicle Use, 9208, 2003.

The share of new buses has changed noticeably over recent years. New South Wales' share has dropped considerably while Victoria's share has risen (by approximately 200 additional buses a year). QLD is also on the rise due to the bus subsidy program where the introduction of new buses has risen from 7 buses a year to 30-40 a year. The last 4 years in NSW have witnessed a slowdown of the purchase of new buses, due in large part to the growing uncertainties of the operating environment in contrast to greater confidence in QLD and Victoria.

Size of Government Bus Industry

There are over 3100 buses in the overall government fleet, with the largest number in NSW (1935 buses). Over the last three years, governments in SA and WA have let a series of competitively tendered management contracts that are now operated by private bus companies (e.g. Swan Transit in WA has 235 buses, PATH in WA has 320, Southern Coast in WA has 140, Serco in SA has 408, Southlink in SA has approx 94 and Torrens Transit in SA has 258). Victoria has franchised its entire tram, rail and bus network and is now totally run by private operators. The other States have retained government operations in the public sector. Below is a histogram showing the various government fleet sizes.



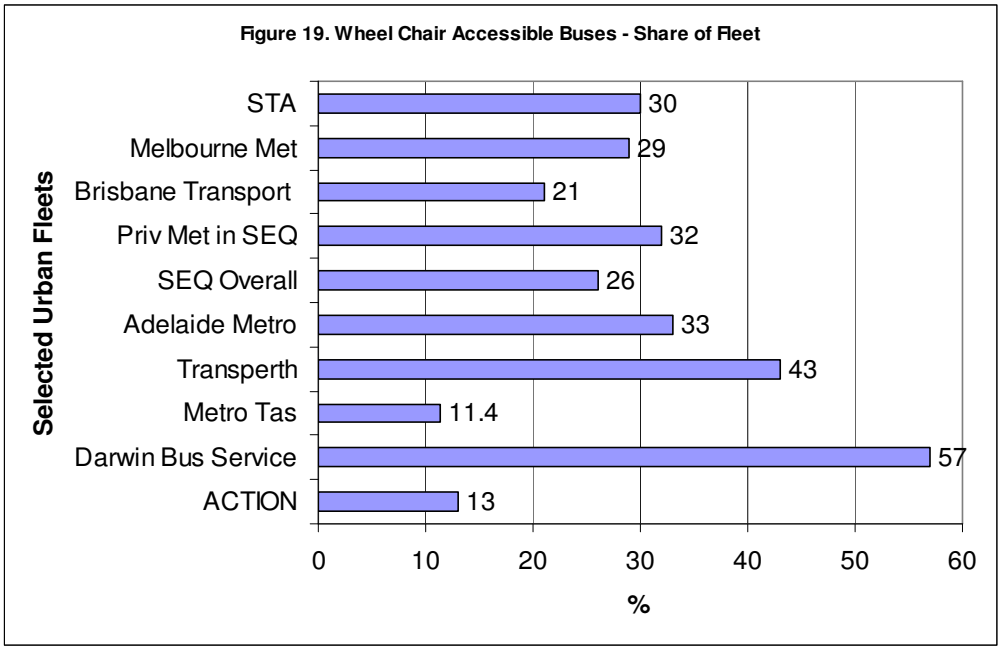
Source: Main sources were latest respective Annual Reports and consultation with State Governments.
* Transperth, Adelaide Metro and Victoria have all services provided under competitively tendered contracts to the private sector.

Fleet Profile

Accessibility compliance

The *Disability Standards for Accessible Transport 2002* came into effect on the 23rd October 2002. Operators and providers must comply with the specified sections of the Standards for all new premises, infrastructure and conveyances brought into use for public transport service. Below is a graph of the share of government buses that are wheel chair accessible, i.e. low floor. Private operator compliance is difficult to estimate but is well below the public sector. As new buses are introduced into the fleet, the percentage that is compliant is raising. By 2019/2020 all buses except dedicated school buses are required to be Disability Discrimination Act (DDA) compliant, with various targets between now and then.

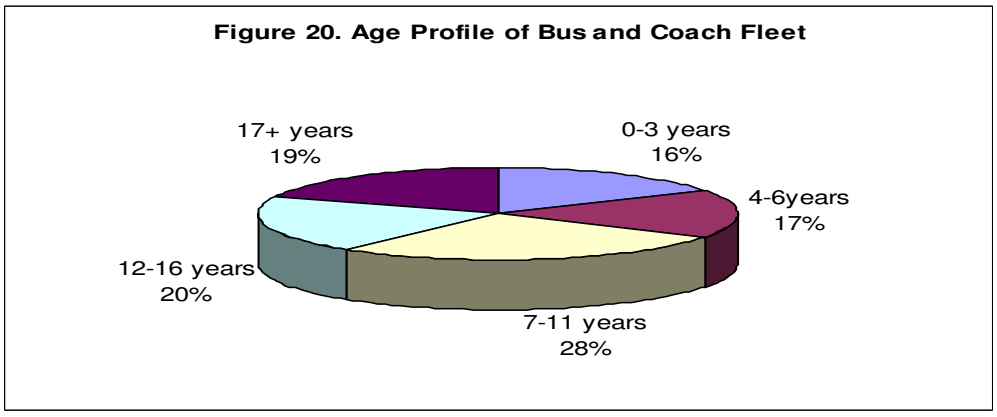
Figure 19, below shows that Darwin Bus Service has the highest percentage of wheel chair accessible buses with 57%. Transperth is the next highest (43%) while Metro Tas is the lowest with only 11.4%



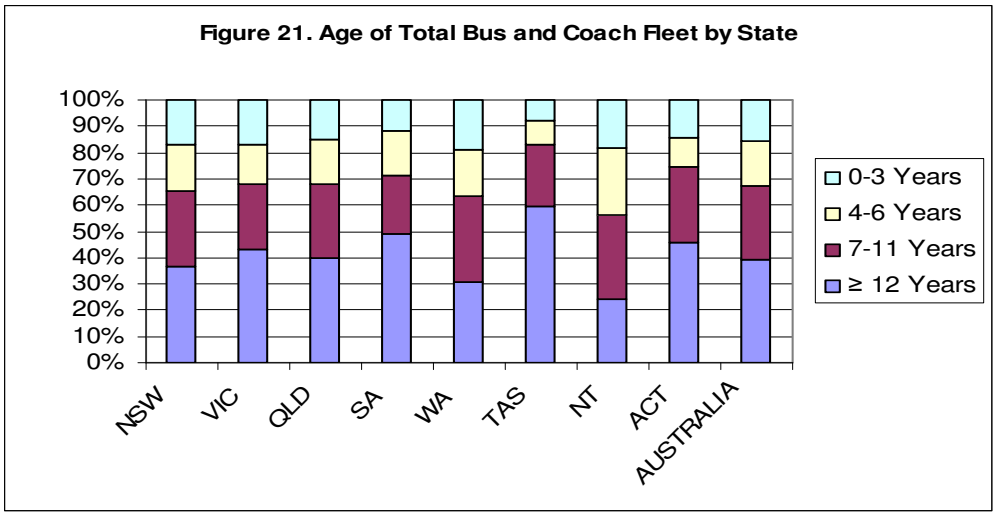
Main sources: Respective Annual Reports 2001/02. Transperth, MetroTas and D.B.Service are current.

Age profile

The diagrams below show the age profile of Australia's bus fleet (public and private). The average age of the entire bus fleet is 10.2 years. The pie chart below indicates that the largest share of buses on register is '7 to 11 years old' and the smallest are 'naught to three years old'.

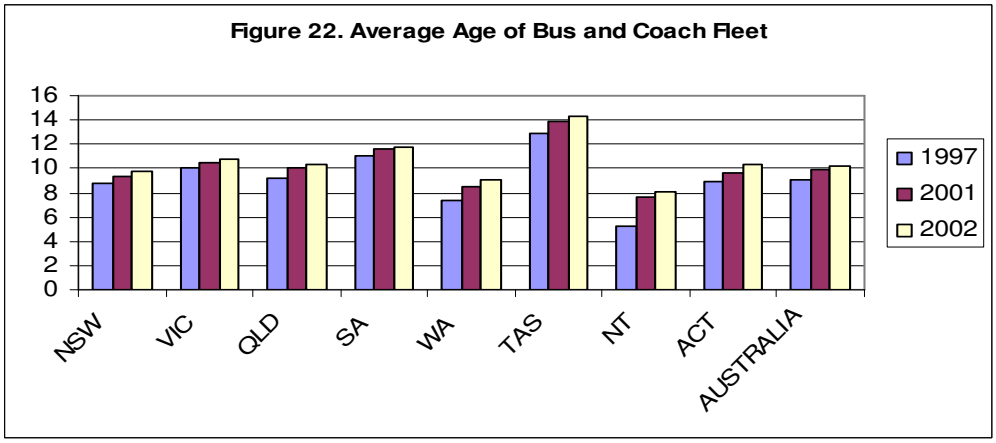


Source: ABS, Motor Vehicle Census, 9309.0, 2002.



Source: ABS, Motor Vehicle Census, 9309.0, 2002.

Tasmania has the oldest fleet of buses on register as is illustrated above and below and the Northern Territory has the youngest.



Source: ABS, Motor Vehicle Census, 9309.0, 2002.

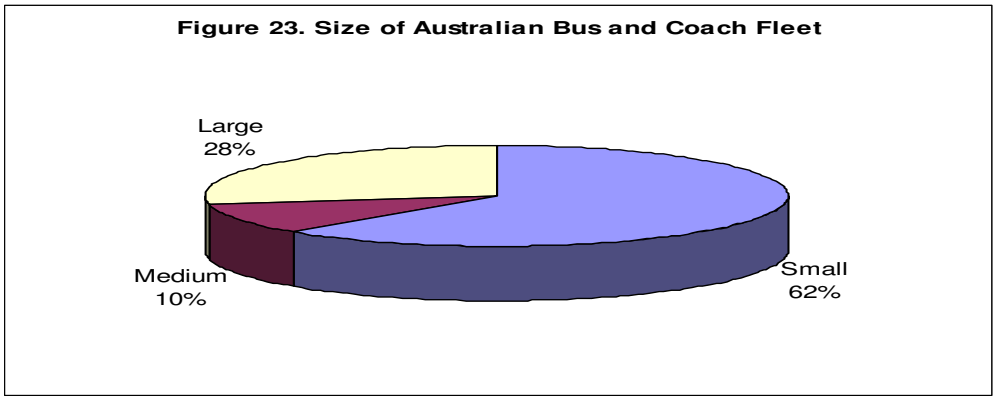
Table 4 demonstrates that over the five-year period 1997-2002 the average age has increased by 2.42% per annum, representing State rates of annual increase of 2.05% (NSW), 1.4% (Vic), 2.61% (Qld), 1.26% (SA), 4.59% (WA), 2.17% (Tas), 10.56% (NT) and 3.15% (ACT).

Table 4. Average Age of Bus and Coach Fleet by State			
	1997	2001	**2002**
NSW	8.8	9.3	**9.7**
VIC	10	10.5	**10.7**
QLD	9.2	10.1	**10.4**
SA	11.1	11.6	**11.8**
WA	7.4	8.5	**9.1**
TAS	12.9	13.9	**14.3**
NT	5.3	7.6	**8.1**
ACT	8.9	9.6	**10.3**
AUSTRALIA	**9.1**	**9.9**	**10.2**

Source: ABS, Motor Vehicle Census, 9309.0, 2002.

Vehicle make-up of fleet

A large proportion of the total bus and coach fleet in Australia are 'small' (43,750 or 62% - see Figure 23 below). Many of these types of buses would be used for services such as Community Transport and for transporting patrons to and from local clubs etc. A 'small' bus is defined by the ABS as a bus with gross vehicle mass (GVM) of 5 tonnes or less, (> 5 ≤ 12 tonnes for 'medium' and > 12 tonnes for 'large'). If GVM is not available, size is determined by seating capacity (≤ 20 seats for 'small', 21 – 40 seats for 'medium' and ≥ 41 seats for 'large'). If seating capacity is not available, size is determined by tare weight, (≤ 3.1 tonnes for 'small', > 3.1 ≤ 7 tonnes for 'medium' and > 7 tonnes for 'large').

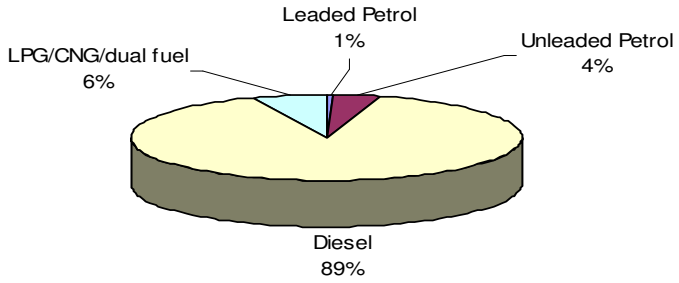


Source: ABS, Motor Vehicle Census, 9309.0, 2002

Energy Consumption and Emissions

Buses and coaches consume annually approximately 500 million litres of fuel, with diesel/distillate being the main fuel. 75% of buses on register (or 52,815) used diesel fuel. The average fuel economy of buses is 27.8 litres/100km for diesel and 13.4 litres/100km for petrol[13]. Figure 24 shows the various consumption shares for type of fuel. While diesel is used by 75% of buses, 89% of fuel consumed by buses is diesel.

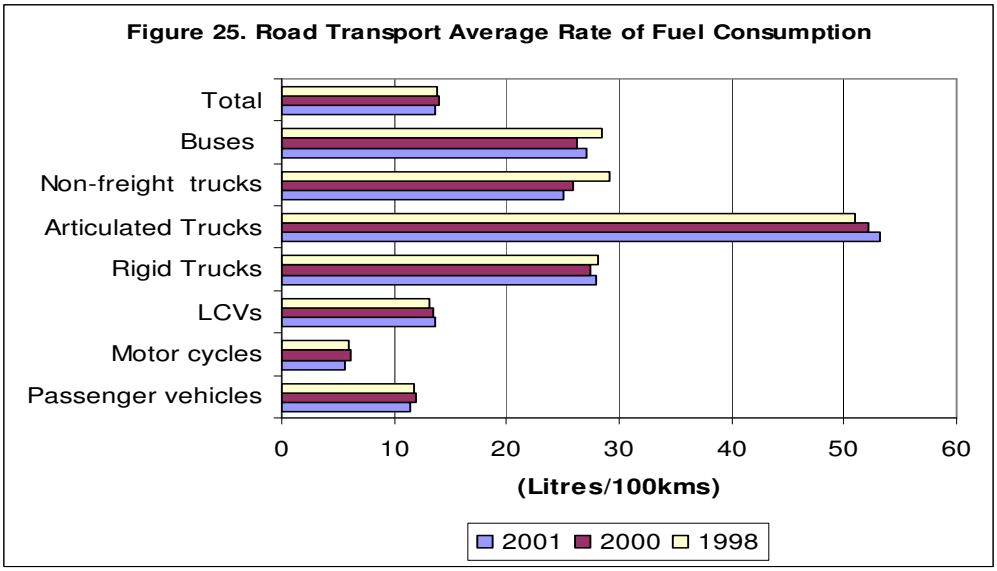
Figure 24. Bus and Coach Fuel Consumption by Type



Source: ABS Survey of Motor Vehicle Use 2001.

The bus and coach sector has made a significant contribution to reducing fuel consumption and hence reducing greenhouse gas emissions and associated other pollutants. In 1994/95 bus and coach fuel consumption was 36.8litres/100km, in contrast to 27.6 litres/100 km in 2001/02, an improvement of 9.2 litres/100km over 6 years or 4.17% per annum. The amount of fuel consumed however has increased from 378 megalitres in 94/95 to 500 megalitres in 01/02 in recognition of the absolute increase in VKM. BIC is a foundation signatory to the Federal Government's greenhouse challenge, supporting an increase in low emission fuels such as ethanol, clean diesel and hydrogen fuel cells.

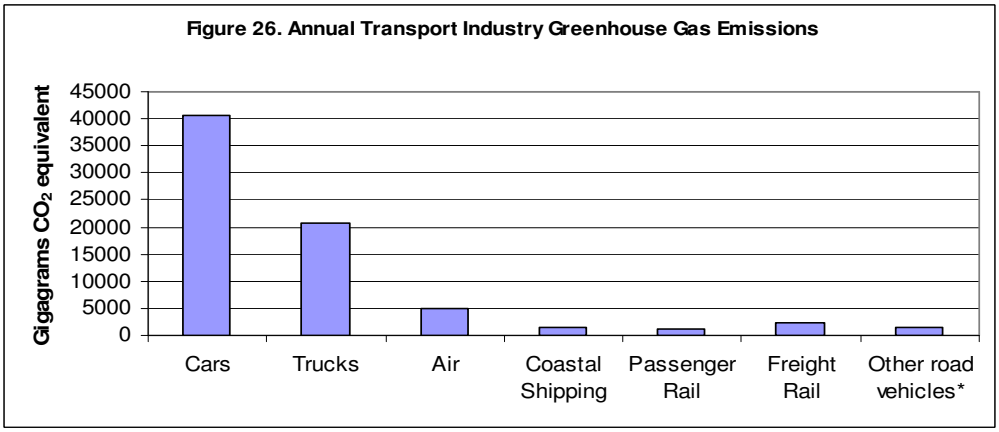
Figure 25 is a graph of the rate of fuel consumption for various road users. Both buses and non-freight carrying trucks made significant reductions in fuel consumption rates over the two-year period between 1998 and 2000. However, this rate rose for buses between 2000 and 2001. Progressively over time there has been a switch to automatic transmission.



Source: ABS Catalogue number 9208.0 and Austroads RoadFacts 2000.

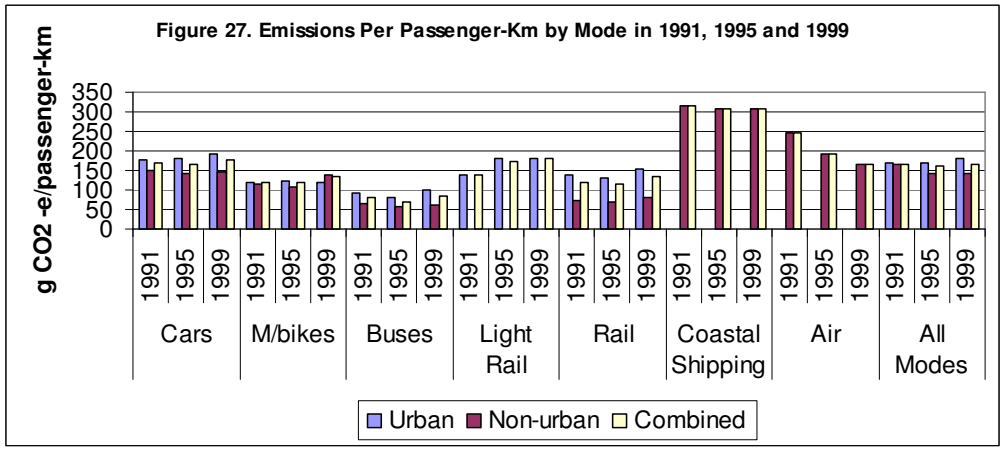
A breakdown of greenhouse gas emissions for various sectors of the transport industry is given in Figure 26. Road transport is responsible for 88% of transport emissions and 13% of Australia's total emissions. Road transport emissions rose by 3.3% between 1999 and 2000, dropped 0.4% between 2000 and 2001 and were 24% higher in 2001 than in 1990[14]. However, emissions from buses remain relatively low (between 1 and 2 per cent of all transport emissions).

Cars produce 62% of all road transport GHG emissions[14]. The development and use of alternative fuels such as compressed natural gas (CNG) and liquefied petroleum gas (LPG) are key strategies for reducing emissions from the transport sector.



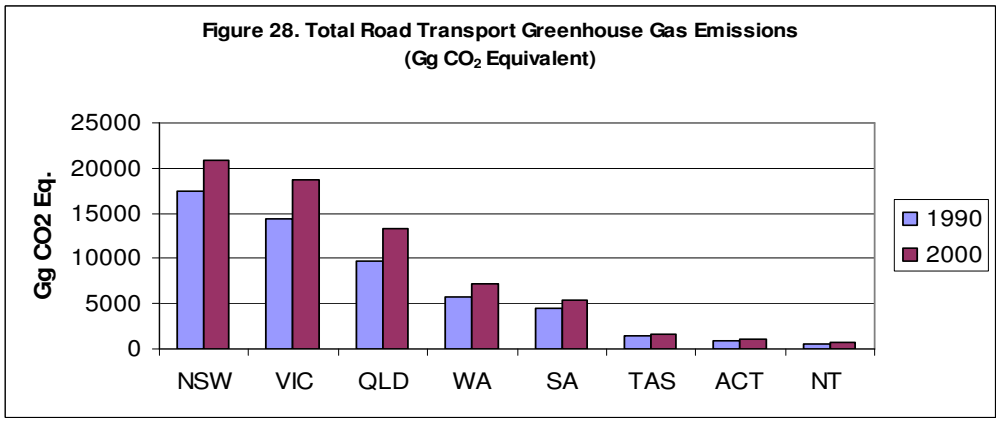
* Other includes buses and motorbikes.
Source: BTRE Report 107, 2002.

Figure 27 below illustrates the emissions per PKM by transport modes and the changes over time. There was a notable rise (26%) in emissions per PKM for urban buses between 1995 and 1999. This could be due to a drop in patronage over this time while maintaining or increasing services. Over the same period, the emissions intensity for urban rail rose by 19%. Non-urban buses achieved a 10% reduction. Air passenger transport emissions per PKM dropped by 33% between 1991 and 1999. There has been a rise of 7.2% between 1991 and 2001 in emissions per urban PKM for all modes, while there has been a drop of 4.8% for non-urban travel[14].



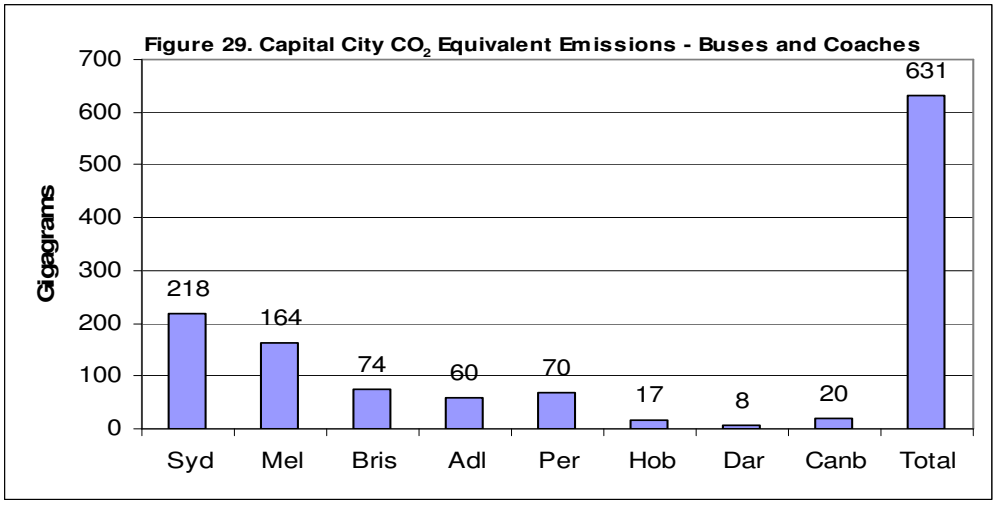
Source: Australian Greenhouse Office, 2002, *National Greenhouse Gas Inventory 2000: Analysis of Trends and Greenhouse Indicators 1990 to 2000*.

The emissions for each state and territory for all road transport and the change over 10 years is illustrated in Figure 28. Overall, there has been a definite increase (26%) due to the rise in number of vehicles and, hence vehicle kilometres. Queensland has experienced the highest rise (37%) followed by Victoria (31%).



Source: Austroads 2000.

Figure 29 is a breakdown of CO_2 equivalent emissions by buses across each capital city. Sydney produces the most emissions followed by Melbourne. On a per capita basis, Hobart followed by Darwin experience the highest rate of emissions from buses and coaches, (89 and 90 tonnes per 1000 population).



Source: BTRE Report 107, 2002.

The average rate of fuel consumption is 11.4 litres/100 km for a car and 27.1 litres/100km for a bus[8]. For a full bus, this would equate to 0.9 litres/100 PKM, (assuming 30 passengers). Therefore a single occupant car versus a full bus would consume 10.5 litres more per 100 PKM than for a full bus.

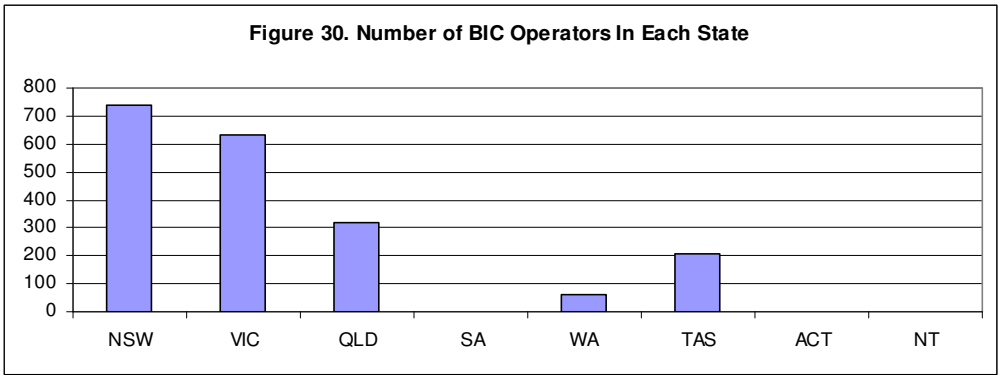
Dividing the total GHG emissions per year for cars and buses by their respective vehicle numbers (equates to 4 tonnes per car and 10 tonnes per bus) and by the average kilometres per vehicle (14,600 km per car and 33,300 km per bus) gives 0.28 g/km for cars and 0.32 g/km for buses. A full bus (30 passengers) therefore would emit 0.01 grams per PKM, 0.27 grams less than a single occupant car. This is assuming full occupancy for total VKM which is obviously not possible.

If public transport patronage (2.3 billion) was to increase by 1% and assuming this were to be taken up by previous car drivers/occupants and average car occupancy is 1.5, the amount of cars taken off the road would be 153 million. That would equate to over 600 million less tonnes of GHG emissions per year. If previous car drivers/occupants were only responsible for 70% of the 1% increase in public transport patronage, this would still equate to 430 million less tonnes per year.

The Contribution of the Australian Bus and Coach Industry to the Australian Economy

BIC Operators

There are over 1900 member operators in Australia, with the following distribution by state. Although BIC has an active membership, its number is small in contrast to the many more operators in the sector, many of which are individual (single-vehicle) small 'coach' operators. We estimate that the membership of BIC represents slightly over 20% of all private bus and coach operators, (indicating approximately 9500 operators Australia-wide), although these operators own approximately 30% of the vehicles on register by private operators (especially fleets where vehicle seating capacity is more than 12 passengers), or 22,000 vehicles.



Market Share of Chassis and Bodies

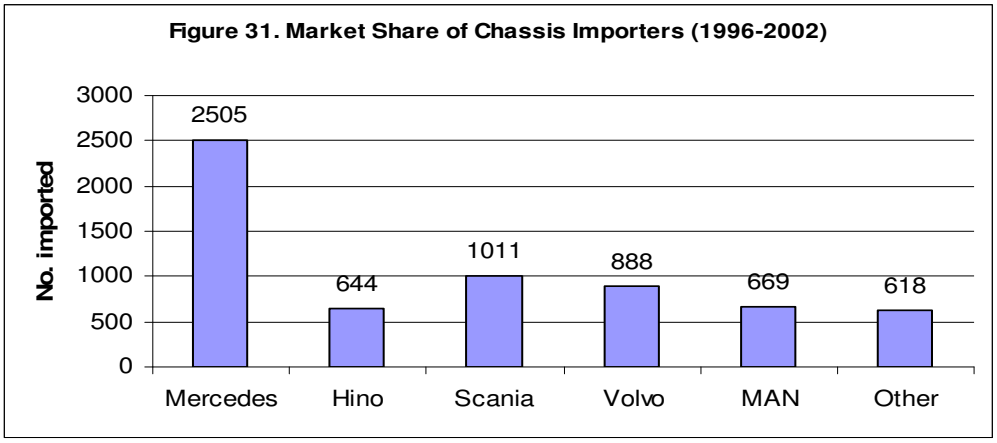
The bus and coach industry is much larger than merely the operational side. There are the chassis suppliers, the body manufacturers as well as numerous ancillary suppliers. The supply chain has a total annual turnover of approximately $610 million which equates to approximately 1% of GDP.

Chassis Suppliers
No. of bus selling dealerships: 17
No. of service dealerships: 305
No. of chassis imported: 747 **6335 (between 1996-2002) (836 in 2002)**
No. of chassis delivered: 846
No. of employees: 1084
% of employees male: 71%
Total annual turnover: $308,650,000

Body Manufacturers

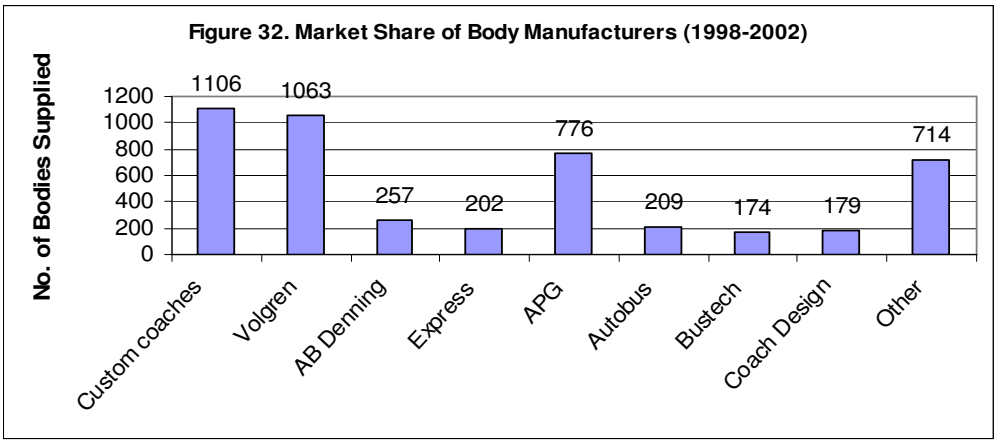
No. of bus manufacturing facilities and locations: 14
No. of bus repair facilities and locations (separate to manufacturing): 6
No. of bodies built: 1112
No. of bodies refurbished: 140
No. of employees: 983
% of employees male: 93%
Total annual turnover: $221,325,000

The suppliers to the bus and coach industry are very important. The chassis suppliers and body builders employ over 2000 employees. The total annual turnover is approximately $530 million. On top of this is another $80 million in turnover related to the bus industry from the ancillary suppliers, such as the seat manufacturers, finance and insurance. The figure of $80 million comes from only ten ancillary suppliers and is actually much larger than this if all suppliers were considered. There was over 830 chassis imported in 2002. Between 1996 and 2002, there were over 6300 chassis imported. Mercedes has the largest market share (40%), see Figure 31.



Source: ABC Magazine

Approximately $220 million in turnover was generated from the body manufacturers in 2002/03, with around 1112 bodies built and 140 refurbished. Between 1998 and 2002, 4680 bodies were built. Almost 1000 people are employed in the bus manufacturing industry. Between 1998 and 2002 there were 4680 bodies supplied, Custom Coaches and Volgren having the largest share, (see Figure 32).



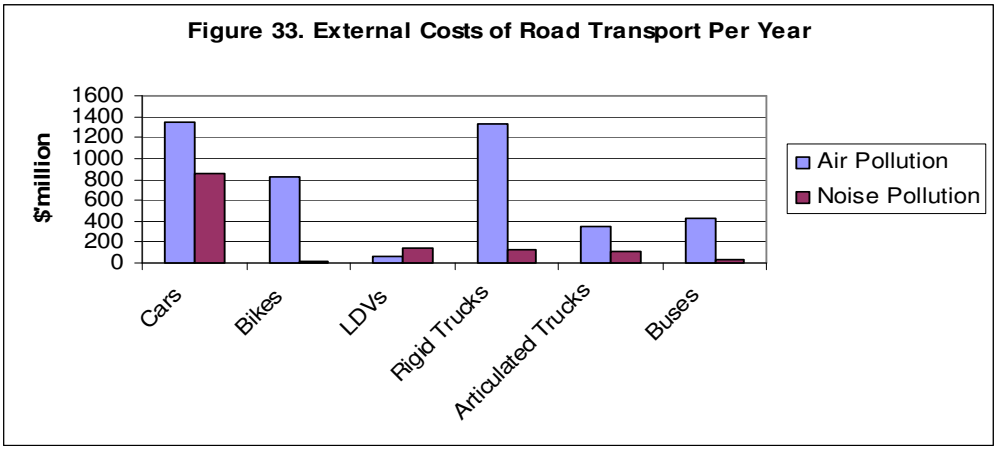
Source: ABC Magazine

Economic Sustainability and the Cost of Cars

The nation's public transport system is in dire need of increased funding and fundamental changes in the approach taken by governments. Urban public transport has been considered the domain of respective State and Territory Governments. However it is increasingly being widely accepted that a national strategy is needed and justified. With social, environmental as well as economic implications on a national scale as a result of transport policies and strategies, it must definitely come within the realms of Commonwealth responsibility. An integrated national land transport strategy is necessary to minimise the economic waste currently experienced from Australia's current land transport systems. They are unsustainable. In economic terms, the transport system is costing the community over $20 billion a year in external costs. This comes in the form of road congestion, road accidents, air pollution, climate change, noise, and road expenditure[15]. There are huge economic savings to be gained by investing in and encouraging use of public transport.

The largest economic waste resulting from the unsustainable transport system is road congestion, primarily in peak periods and in the cities. The BTRE estimates that congestion costs Australia $12.8 billion per annum (approximately 2% of GDP) in increased vehicle operating costs and travel times, rising to $29.7 billion by 2015 if improvements are not made. On top of these economic and social externality costs are the environmental implications. Fuel consumption and greenhouse gas, (GHG), emissions are twice as high under congested traffic conditions as free-flowing traffic. The BTRE state that congestion in Australia's six major cities account for around 13 million tonnes of GHG emissions per annum which is the equivalent of 17% of domestic transport emissions and 3% of emissions from all sectors[16]. Australia's dependency on the car (one of the highest in the world) is the obvious major determining causal factor for congestion. Cars represent 90% of the passenger kilometre modal share of our cities.

BIC estimates in 2001[17] stated the cost of air pollution from cars at $1.35 billion (or 31% of the cost of air pollution from road transport). Noise pollution from cars costs approximately $850 million per year (67% of noise pollution costs from road transport). This is equivalent to approximately 2 cents per passenger kilometre - urban areas only, (buses cost approximately 6 cents per passenger kilometre). Figure 33 below illustrates the estimated external costs for road transport associated with air and noise pollution. Note that this does not include congestion costs. Private vehicles and rigid trucks are by far the highest contributor to air pollution costs.



Source: BIC, 2001.

The BIC estimated marginal costs for car use in urban areas to approximate 84-92 cents per litre[17]. With average fuel consumption for cars at 11.4 litres per 100 kilometres, (this is for all types of travel and would be higher for urban travel) this would equate to $9.58 to $10.49 per 100 km. If everyone (car drivers and passengers) travelling to work used public transport one day a week instead of the car the savings could be estimated as follows:

Assuming the average journey to work distance by car is 10.1 km, total kilometres saved per person would equal 48 (weeks) x 2 (return) x 10.1 = 969.6 km. This equals a saving of $93 to $102 per person. The total number of employed persons (capital cities only) who's main mode of travel to work is car is 3.25 million. Therefore total external savings would equal $302.25 million to $331.50 million. Of course the increased external cost of travelling by public transport would need to be subtracted from this to achieve the net savings. However, it can be seen that substantial savings in congestion costs, environmental costs, and accident costs could be achieved. On top of these savings would be the increases in public transport revenue.

The economic, social and environmental impacts of our dependency on cars strongly compel action for increasing the use of public transport. Improvements in the public transport system are necessary if patronage is to rise. While substantial costs are necessary in order to achieve this, the benefits far outweigh the costs. A Dandenong case-

study by Booze, Allen and Hamilton, into strategies for doubling bus patronage in 3-5 years by methods such as improving infrastructure and services, estimated the benefit/cost ratio at 2.17. This did not include environmental benefits such as reduced GHG emissions, or reduced air or noise pollution[17].

The NRTC in 1999 estimated total costs allocated to cars, including externalities at $2.6 billion[17]. This equates to $267 million per car, (note that this is only $47m more than the above BIC estimate which only included air and noise pollution). By using the earlier example of a 1% increase in public transport patronage, 70% taken up by car drivers/passengers, this would remove 107 cars from the road (assuming occupancy of 1.5). Assuming the NRTC estimate of the cost of cars (likely to be higher now), this equates to a reduced cost of $27.8 billion – for a 1% increase!

The BTRE estimates that a one per cent improvement in the efficiency of the delivery of national transport services will increase annual GDP by around $500 million (2002 prices) [18]. The flow-on effects of investment in public transport are very significant. The resultant reduced travel time and congestion and increased safety, lead to a reduction in transport costs, business costs, costs of living, an increase in business productivity and lower prices and costs. This in turn, leads to economic stimulation and expansion and attraction of businesses. Whereas roads could be considered diminishing returns to scale (marginal costs increasing when externalities are considered), it makes economic sense to encourage public transport as marginal costs are decreased as patronage increases.

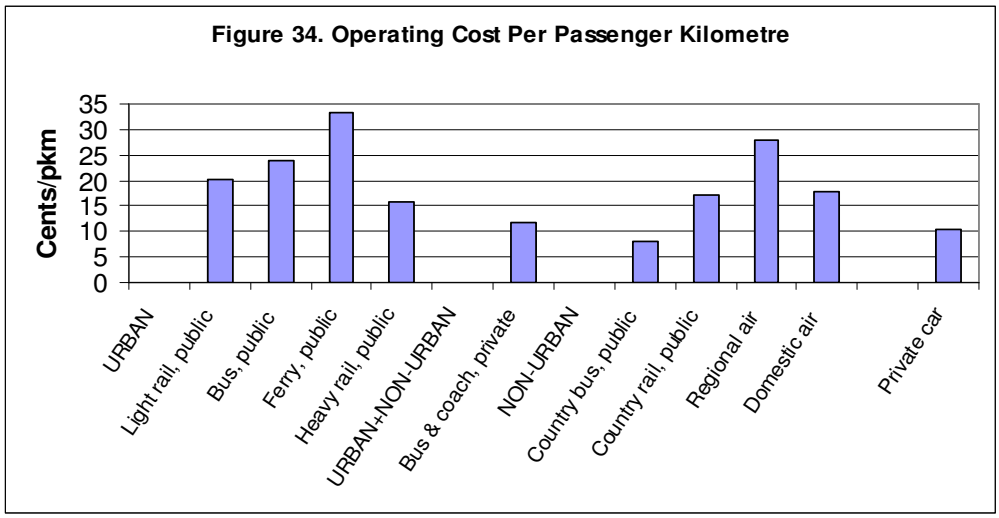
The Bus – The Most Cost Effective Form of Public Transport

Another form of economic wastage is the cost-effectiveness (or lack of) of the various forms of public transport. Much of the taxpayer's money is going towards subsidising public transport. The Parry Inquiry identifies the worst culprits in NSW as rail and ferry. The bus industry is capable of supplying a more cost-effective, flexible and efficient form of public transport than any other. In terms of input cost efficiency and use of resources the private bus industry is best practice. The government bus operator in NSW, Sydney Buses, has a higher cost recovery, but it also operates in the higher density, more profitable routes in inner city and middle-ring suburbs. The Parry Inquiry states that few of the CountryLink intrastate rail services are justifiable. They are very under-utilised, very expensive and in need of large amounts of money to be spent on all forms of infrastructure. Coaches offer a much better alternative and are more capable of benefiting rural communities[11].

The cost effectiveness of the three government operated transport modes in NSW is illustrated by their farebox recovery. Including community service obligation payments (concession payments etc), Sydney Buses have a farebox recovery of 98%, Sydney Ferries 77% and StateRail 61%[19]. In 2001/02 the cost to the Queensland Government of subsidies to public transport in South East Queensland was 10c/pkm for buses and 32c/pkm for rail[20].

Private bus operators in NSW received 56% of concession payments from the government due to the fact that only 19% of passengers are full-fare paying compared to 47% of Sydney Buses passengers[21]. In 2001/02, the State Rail Authority received $870.9 million in subsidies, the State Transit Authority $54.6 million and the private bus operators do not receive any funding for subsidies. Of the total estimated government contribution to transport operators in NSW ($1,569.8 million in 2001/02), consisting of concessions for social policy programs including SSTS payments and subsidies, private bus operators received 23%[22]. With an overhaul of the SSTS, private buses would easily be considered the most cost efficient mode of transport in terms of government contribution - best value for money. Improvement in infrastructure is also most cost effective for buses and as most of it is not fixed, as is the case for rail, the industry is more flexible and adaptable to changing circumstances.

Using data from the late 1990s, the following operating costs were estimated for various forms of transport in Australia (Figure 34). The private bus and coach industry averaged 11.7 cents per passenger kilometre compared to 24 cents for urban public buses and 15.8 cents for urban heavy rail. With the exception of government buses in urban areas, buses are considerably more cost efficient than all other forms of public transport[23].



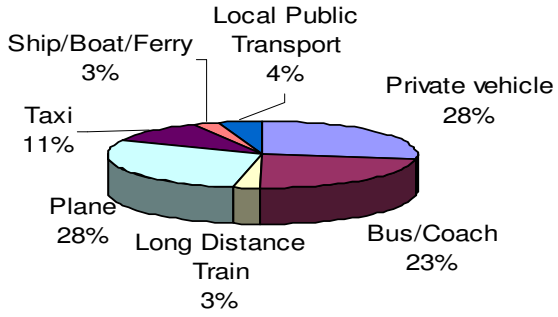
Source: Lenzen 1999.

Role of the Bus and Coach Industry in Tourism

The bus industry plays an important role in meeting the transport needs of international tourists, in particular charter and tour coaches. Travel by coach for regional trip types such as interregional travel, non-metro to regional travel and metro to regional travel is likely to increase. According to the Figure 35, buses and coaches are responsible for 23% of trips by international tourists, the private vehicle 28% (39% if including taxi) and aircraft 28%. 319,000 international visitors travelled on long-distance buses or coaches in

2002/03, 380,000 travelled on a hotel or motel shuttle/courtesy bus and over 856,000 travelled on charter or tour buses[24].

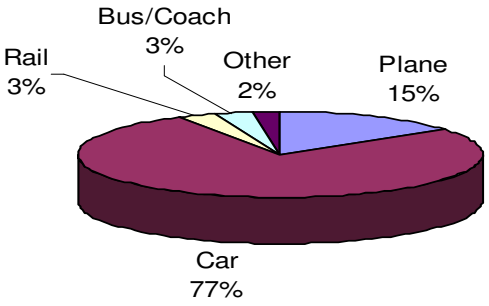
Figure 35. Modal Share for International Tourism Travel*



Source: BTR 2003 unpublished data. *Mode of transport used to overnight stays.

The bus and coach industry represents a small proportion of modes used by domestic tourists as is shown in Figure 36. The private vehicle is the most commonly used mode followed by air transport. In 2002/03 2.3 million domestic tourists on overnight trips used a bus or coach and 4.7 million on day trips[24].

Figure 36. Modal Share for Domestic Tourism Travel*



Source: BTR 2003 unpublished data. *Mode of transport used to overnight stays.

In total over 8.5 million tourists used buses or coaches in some form in 2002/03 and many (if not most) of these would have used them more than once.

Projections of Tourism Activity

After the initial decline that resulted from the deregulation of domestic aviation in Australia in 1990, coach passenger kilometres have remained fairly constant. With international tourism expected to double within the next decade and the bus and coach

industry servicing a substantial share of this market, there is an opportunity for this to increase[25]. However, with a global trend in shorter breaks and international tourists likely to be concentrated in cities, regions within two hours drive from cities and 'tourist regions', there will be substantial competition from other modes of transport, most notably from low-fare airlines. The BTRE estimates all coach travel to rise by 1.5% per annum (passenger trips), air 3.8%, car 2% and rail to drop 0.2%. Theses rises are expected to be more pronounced in inter-capital and inter-metropolitan region travel for all modes[26]. A substantial share of the expected rise in regional coach travel will be attributable to the increase in international tourist trips.

In NSW, CountryLink has replaced numerous low density country rail services with coaches providing a less expensive and more flexible alternative. The share of regional rail services (excluding inter-metropolitan travel) is unlikely to increase. The BTRE estimates the increase in trips for regional coach travel to be slower than air or car, and a decrease in travel from inland and remote areas, but strong growth in international tourist patronage, leading to an overall rise in regional coach travel.

Unlike NSW, the increase in international visitor coach travel in regional Victoria is unlikely to offset the predicted decline in domestic regional coach travel. Overall a decline of 0.2% p.a. is expected between 1999 and 2020. For air and car, a rise of 3% and 1.1% respectively and a drop of 1.6% for rail, are expected.

In Queensland, demand for public transport along the coast is likely to continue to rise with the many coastal regional centres attracting a growing number of tourists. International tourist trips by coach are likely to increase, aiding in the projected annual rise of regional coach travel from tourist regions of 2.1%, between 1999 and 2020. This is despite a projected decline in domestic resident regional coach trips.

In South Australia and Western Australia regional travel from tourist regions for coaches is expected to increase by 0.6% and 1.7% p.a. respectively between 1999 and 2020. This is mainly due to increases in international visitor trips. In northern WA, a 3.5% p.a. rise is expected in regional coach travel. Air is the only alternative and is generally the mode of choice for business travellers.

Tasmania and the ACT can also expect a small rise in regional coach travel (0.6% and 1.3% respectively p.a. between 1999 and 2020), mostly supported by international tourists, as domestic resident travel is expected to decline slightly. Certain tourism regions in Tasmania should receive strong growth, as their predominant patronage is international tourists, (e.g. 4.5% p.a. between 1999 and 2020 for the North West).

The State or Territory with the strongest predicted growth in regional coach travel (5.5% p.a. between 1999 and 2020) is the Northern Territory. The coach is also the mode of travel with the highest expected increase. The BTRE states that approximately 90% of these trips are from international visitors. Charter and tour services as opposed to long-distance scheduled coach services are the main carriers of these international visitors as well as domestic tourists.

Contributions to the Tourism Dollar

Domestic tourism accounts for nearly three-quarters of visitor nights and 76% of expenditure, however by 2012 international tourism will account for approximately 30% of tourism expenditure. Long-distance passenger transport represented the largest proportion of tourism products consumed in 2001/02 by all visitors (17% or $12.27 billion). For international visitors this represented 29% (or $5 billion) and for business/government visitors this was 38.7% (or $3.2 billion) [27].

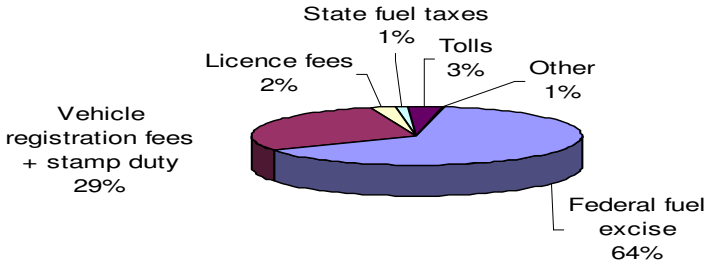
A case study by TTF, found that the three major coach tour operators, AAT Kings, APT Pacific and Scenic Tours, provided two-thirds of a million international visitor days on coach tours, generating tourism exports of around $200 million for the year 2000/01. They carried 1.4 times more international tourists than domestic tourists[25]. The coach industry is expected to accommodate a growing share of the expanding international market and will therefore increasingly contribute to the tourism dollar.

The tourism industry employed 23,300 people in road transport and motor vehicle hiring in 2000/01.

Road User Taxes and Charges

Road users, including the private bus industry, pay taxes and charges for the right to use the roads. The following diagram itemises these taxes and charges. The Federal Government increased the excise on regular diesel fuel by 1 cent on the 1st July 2003 and will increase this by another cent on the 1st January 2004. These increases have not been implemented on Low Sulphur Diesel (LSD) to encourage the use of LSD and new engine technologies (Euro 3) [28]. Figure 37 below breaks down the various forms of taxes and charges road users pay. Federal Fuel Excise is the largest money earner for the Government (64%).

Figure 37. State Road User Charges - 2000/01

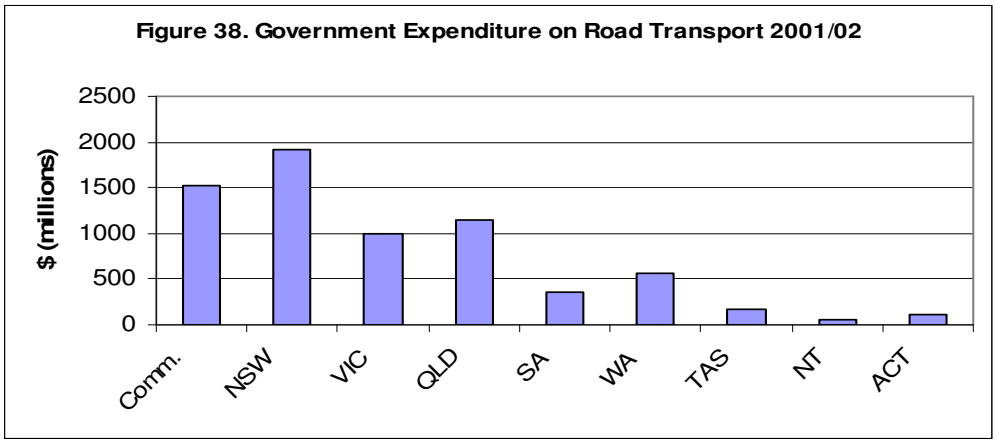


Total Charges = $14 billion

Source: BTRE Selected Motor Vehicle Taxes and Charges 1989-90 to 2000-01.

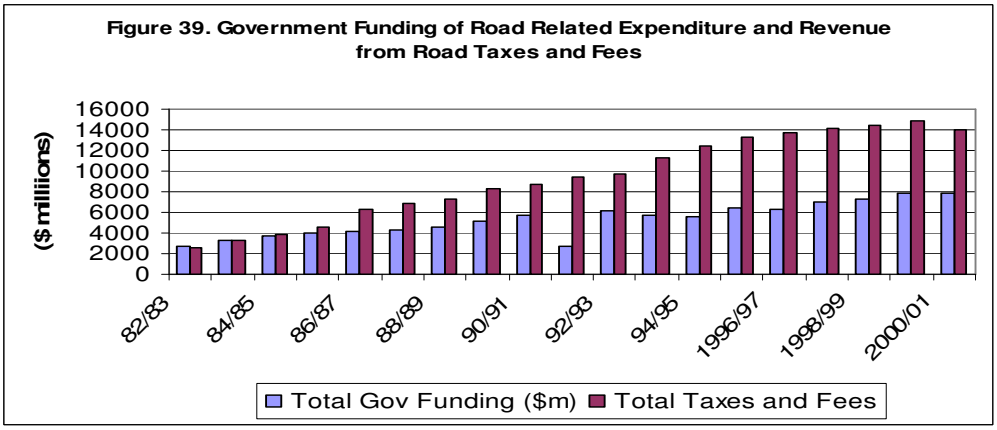
Government Road Funding

Slightly less than half of this is returned to the road users in the form of Commonwealth and State government expenditure on roads. The diagram below shows how this expenditure was distributed across Australia in 2001/02.

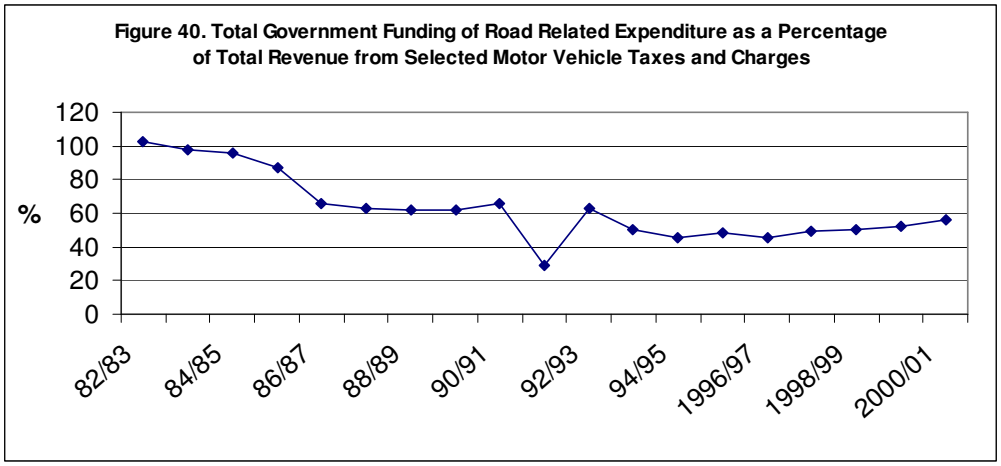


Note: Does not include local government funding.
Source: ABS Government Financial Statistics. 5512.0 2003.

Approximately $135 billion per annum or (19% of GDP) is consumed in the use of the road network. Business user costs, including time, are responsible for approximately 53% of this, with private user costs, excluding time, accounting for 28%[18]. The two graphs below illustrate the difference between funding of road related expenditure and revenue raised from road taxes and fees. In 2002/03 approximately $13,337 billion was collected by the Commonwealth in fuel excise, however only $1.293 billion was contributed to the road network[29].

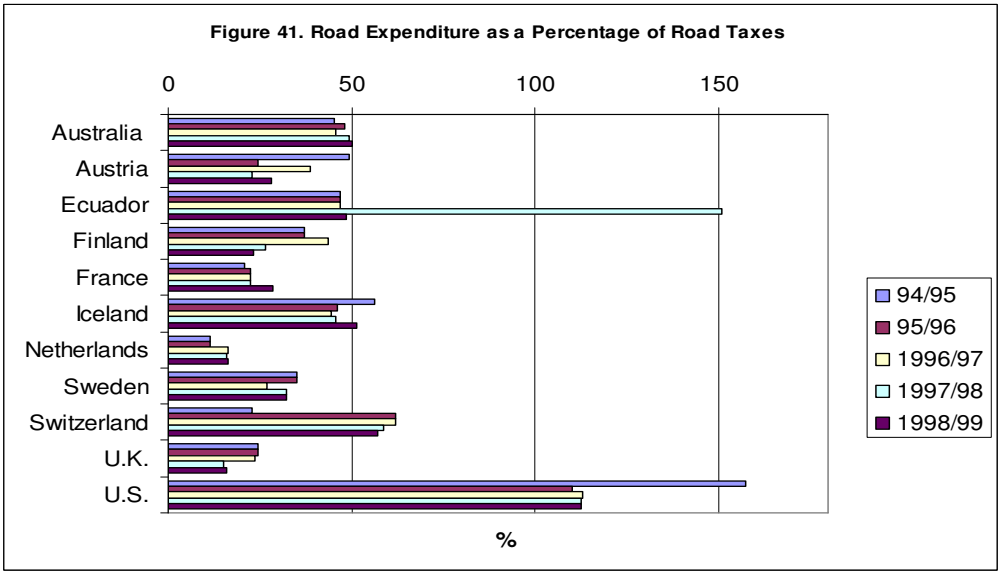


Note: Includes Commonwealth, State and Local Government Funding.
Source: AAA Statistics Database. Revenue raised is not necessarily related to expenditure on roads.



Note: Includes Commonwealth, State and Local Government Funding.
Source: AAA Statistics Database.

Figure 41 illustrates the percentage of road taxes that were allocated to road expenditure over the time for a number of countries. The United States invests a considerably larger share from their motor vehicle taxes and charges towards spending on the roads than does Australia.



Source: AAA Transport Statistics Database.

Total government funding of road related expenditure has remained at approximately 1.15% of GDP since 1990 with the exception of 1991/92 when it dropped to 0.6%, (see Figure 42). Figures for overseas in 1999 were: US – 1.0%, Canada – 0.5%, UK – 1.2%, Japan – 0.5%[30]. Commonwealth funding has decreased both as a percentage of GDP (see

Figure 43) and in absolute terms. In 1992/93 funding equaled $2,177 million (0.48% of GDP) and in 2000/01 $1,459 million (0.22%). Despite the increase in total absolute expenditure on roads and the relatively stable ratio to GDP, there has been a substantial growth in the backlog of viable infrastructure projects. Expenditure on roads has predominately been on road maintenance and upgrading of existing stock. This has been at the expense of investment in roads and therefore road capital stocks have declined. Economically viable road projects that are unfunded total well over $10 billion. The projects waiting funding are potentially very high yielding. In NSW alone, there are approximately $4.4 billion worth of projects in backlog. In Victoria and Western Australia there are $3.8 billion and $2.2 billion worth of projects respectively. These are all considered to have benefit-cost ratios well in excess of 1[18]. In addition to a backlog of new investment projects, there is also a need for maintenance and upgrading of the existing road system.

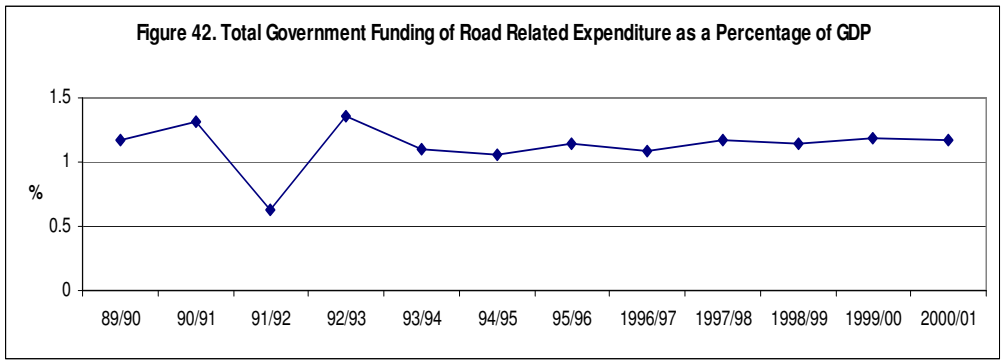
The majority of funding under the Roads to Recovery Program from the Commonwealth Government is directed towards renewal and upgrading of existing infrastructure and yet it is estimated that the backlog in funds for maintenance and renewal of local roads across Australia is at approximately $630 million a year and increasing[31].

In 1997, the then BTCE estimated the future expenditure needs up to 2020 (in 1997 dollars) for non-urban sections of the National Highway System (NHS) alone to be $16.8 billion of which the backlog comprises $2.6 billion, (i.e. needed immediately). $7 billion of this is needed to widen roads, $1.5 billion for bypasses, $8 billion for maintenance and $500 million for the upgrade of existing bridges[32]. It was estimated that $950 million per annum was needed on the NHS with $325 million on maintenance. The table below illustrates that in the period from 1996/97 to 2000/01 alone, a backlog of almost $1.3 billion has accumulated in necessary funding on the NHS, (assuming a need of $950m per year). As there was already a backlog of $2.6 billion in 1997/98, by 2000/01 this would have increased to $3.4 billion. With a falling rate of expenditure on maintenance and an increasing backlog, the nation's highways are deteriorating. Coupled with an estimated $630 million backlog on maintenance and upgrading of local roads, there is cause for concern.

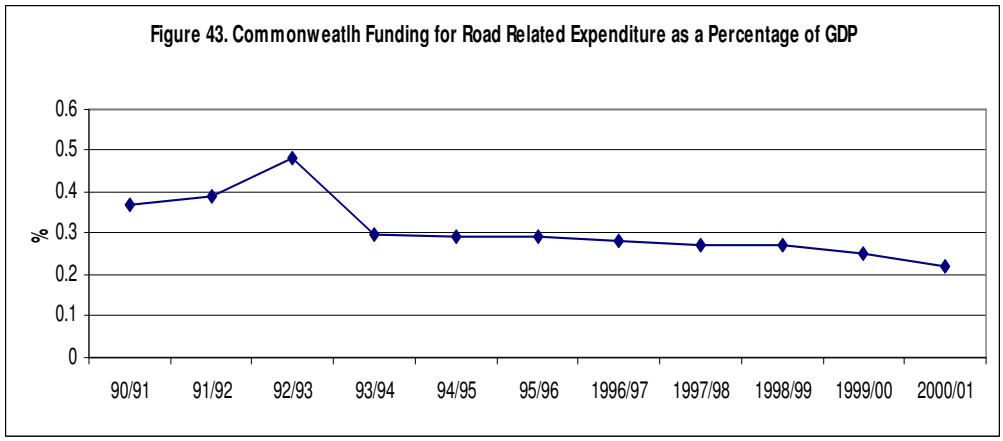
Table 5. Australia's National Highway Spending Needs

($ million)	**1996-97**	**1997-98**	**1998-99**	**1999-00**	**2000-01**	**Total**
Expenditure on NHS	710	702	745	631	691	3479
Expenditure needed	950	950	950	950	950	4750
Backlog	240	248	205	319	259	1271

Source: AAA, 2002[33]



Source: AAA Transport Statistics Database.



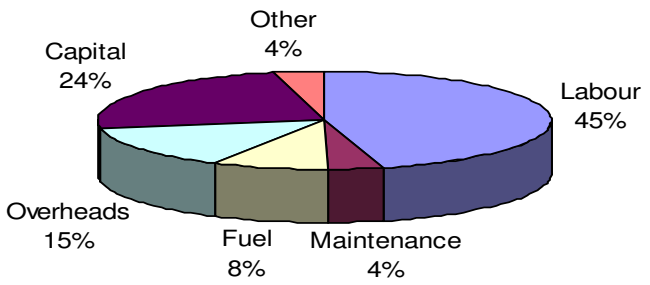
Source: AAA Transport Statistics Database.

Road infrastructure investments are important for meeting future demand for transport services. Benefits come in the form of reduced congestion and therefore reduced travel times, fuel consumption, greenhouse gas emissions, vehicle operating costs and accidents. It is estimated that for all OECD countries, the economic benefits of road infrastructure investments are 19 times its investment costs[34]. A brief discussion of the China experience is given in the Appendix.

Operating Expenditure - Private

The diagrams below show how the running costs of the private bus and coach industry are distributed for metropolitan and non-metropolitan areas. In metropolitan areas, wages make up almost half of the costs, whereas in country areas, this represents 36% of the costs.

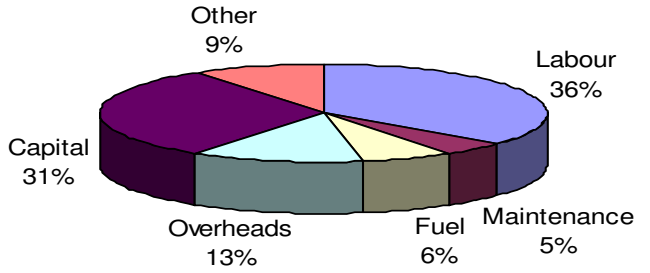
Figure 44. Distribution of Expenditure - Metropolitan



Source: 2002 Survey of Operators of NSW undertake by BCA (NSW) and analysed by ITS.

Vehicle capital costs are more expensive in country areas in relation to metropolitan areas.

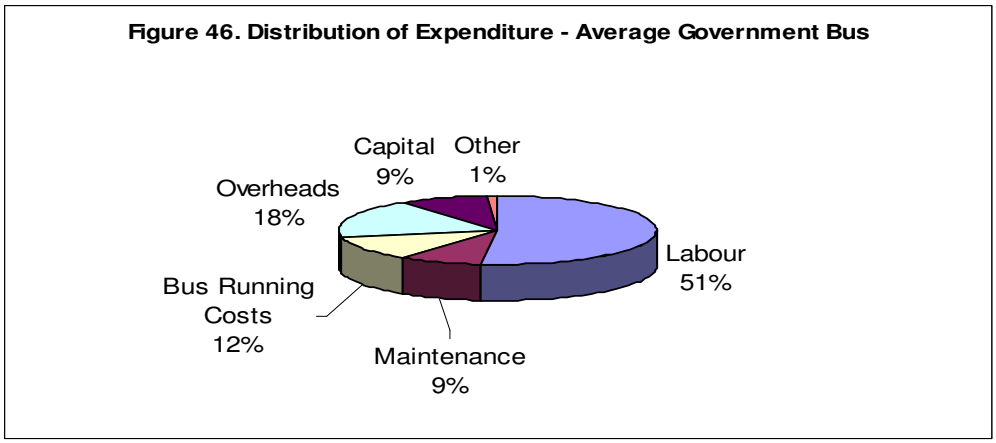
Figure 45. Distribution of Expenditure - Country



Source: 2002 Survey of Operators of NSW undertaken by BCA (NSW) and analysed by ITS.

Operating Expenditure - Public

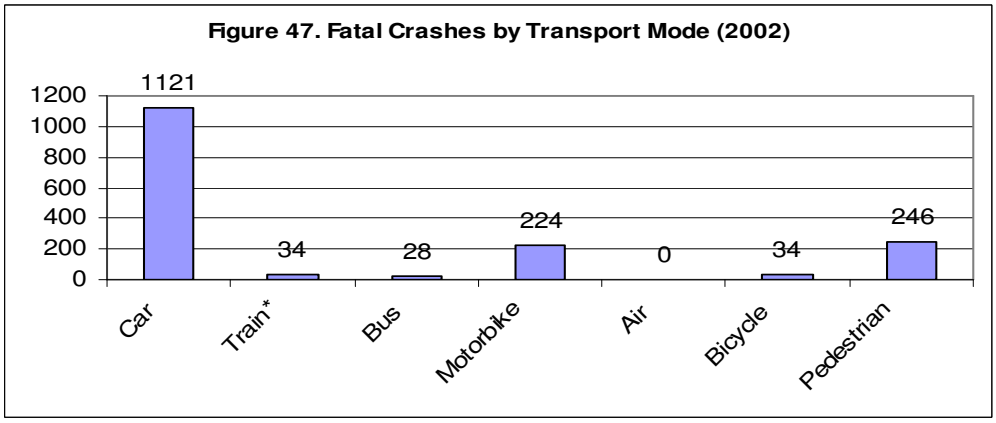
Below is a comparable expenditure chart for government fleets. Labour is the over-riding cost. Capital is a growing source of expenditure as old buses are replaced with new, more expensive buses.



Main sources were government Annual Reports.
Note: Capital injection for Action was omitted due to atypical amount resulting from bus replacement program.

Industry Safety Record

In 2002 there were 28 fatal crashes involving buses as opposed to 1,121 involving cars. There were 34 fatalities involving rail (45 if including accidents with motor vehicles) with 3 being passengers (2001). Figure 47 shows the number of fatal crashes by user type for 2002. The figure for rail is fatalities not fatal crashes and is 2001 data.



Source: ATSB fatal road crash database Year 2002, ATSB rail fatalities statistics Year 2000 and ATSB Aviation Safety Statistics 2002.
* Rail = number of fatalities, not fatal crashes (2001 data).
Rail passenger fatalities from falls in or from train =3.
Air transport = 0, general aviation = 10

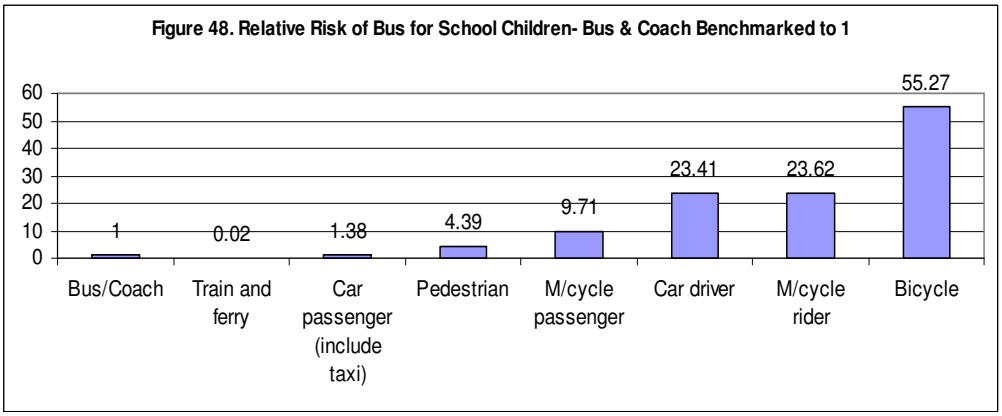
The fatal accident indicator (Table 6) for trains is substantially higher than other modes of transport for vehicle kilometres. It should be remembered that this figure includes all rail fatalities, i.e., involving a motor vehicle and train, plus pedestrian, pedal cyclist and

passenger fatalities involving a train. Rail VKM is passenger rail only. This figure is substantially lower (30) when considering only rail *passengers*; (there were 3 passenger fatalities in 2001). The motor bike is the next highest mode for fatal accidents/BVKM and easily the worst if we used the value of 30 for rail. In terms of passenger kilometres, the car is the worst offender. While accident rates are higher for buses than cars in terms of vehicle kilometres, they are safer in terms of passenger exposure and the safest of all transport modes, other than regular passenger air travel, (unless only considering rail *passengers*).

Table 6. Vehicle Accident Rates - 2002		
Vehicle Type	*Fatal Accidents per billion vkm*	*Fatal Accidents per billion pkm*
Car	7.8	4.76
Train*	453 (30)	4.65 (0.3)
Motor Bike	154.70	-
Bus	**15.25**	**1.45**

Source: ATSB Fatal Road Crash Database, ATSB Rail Fatalities Statistics, ATSB Rail Activity, ABS Survey of Motor Vehicle Use, BTRE Report 107, National Greenhouse Gas Inventory 2000.
* Rail = number of fatalities, not fatal crashes (2000 data). Rail passenger fatalities from falls in or from train = 4.

Victoria was the only state in 2002 to have a child fatality (1 only) involving buses. The statistics reveal that the bus is the safest of the road-going modes for school children with passengers contributing 7.2% of all passenger kilometres yet only 3.83% of all school children casualties.



Source: BCA (NSW) Bulletin March 2002.

Contractual Arrangements

Bus services have until recent years, been provided in all capital cities by a mix of government-owned and private operators. Over the last three years governments in SA and WA have let a series of competitively tendered management contracts that are now operated by private bus companies (e.g. Swan Transit, PATH, and Southern Coast in WA

and Serco, Southlink and Torrens Transit in SA). Victoria has franchised its entire bus network. The other States have retained government operations in the public sector. The urban private operators are regulated by their respective State Departments of Transport.

Each state and territory operates under differing contractual arrangements and the definition of commercial and non-commercial contracts also differ. Most states consider any contract whereby the operator receives school subsidy payments from the government to be a non-commercial contract. However, in NSW for example, operators under commercial contracts receive subsidies for concessions and the government's SSTS as well as farebox revenue. Under non-commercial contracts, operators receive government funding for school services through a contract rate formula based on 'standardised' gross cost of service provision, (the total cost of the service is met by the Government). In NSW, commercial and non-commercial contracts are entered into between the accredited operator and the Ministry of Transport. Routes, fares and minimum service levels (MSLs), are set, with tenure of five years which is ongoing subject to MSLs. Revenue is acquired from the farebox and concession reimbursement and School Subsidy Transport Scheme (SSTS) payments. There is no service related contribution from the Government. All services carrying passengers over 40 kilometres are deregulated. There are 236 commercial contracts in NSW, 27 of which are operated by State Transit. There are 166 private operators with commercial contracts. These 167 operators provide regular route services in metropolitan areas and large country towns. 847 operators hold 1829 non-commercial contracts, predominantly providing school services to rural and regional areas[35].

In Victoria, contracts are cost-based between the government and the private operators, determined by benchmarked efficient input cost rates. Routes, fares and minimum service levels (MSLs), are set, with tenure of seven years which is ongoing. Service contracts specify the routes or region of operation, or a combination of route and area tendering. The operator of the route has exclusive rights to that route once granted by the Secretary of Transport. There are no commercial contracts and 41 metropolitan contracts provided by 28 operators. School services are provided within the 41 metropolitan contracts. There are 64 non-commercial contracts providing town and inter-town services in rural areas. There are also 1595 school contracts in non-metropolitan areas and 15 long distance services contracted to the Department of Infrastructure. Victoria has 237 accredited operators and 309 accredited charter operators.

In Queensland, third generation contracts are now being determined on a gross cost for service fee basis. Current contracts are commercial contracts with revenue coming from the farebox, concession reimbursement, new bus contributions and funding interest subsidy. There are two types of service contracts in Queensland – commercial and government funded. There are a total of 40 commercial contracts (18 metropolitan and 22 non-metropolitan). It is argued that as school services are incorporated in the same service contract as the urban services, that there are no non-commercial contracts in the areas that have service contracts. Therefore, it is claimed that there are no metropolitan non-commercial contracts and 1260 non-metropolitan non-commercial contracts.

In Western Australia, there are three competitively tendered contracts based on gross cost. Incentives exist based on patronage. The contracts are operational and management based as the fleet is still government owned. Transperth – a conglomeration of these three private operators controlled by the government operate a total of 1000 services, 305 standard routes, 482 school services in Perth. 120 operators provide regional bus services on routes in Western Australia. There are 475 operators providing regional school services on 842 routes. There are around 800 tour/charter operators and 20 regional coach routes.

In South Australia, contracts are also competitively tendered on a gross cost basis with passenger incentives. There are a total of 398 bus operators. There are 4 contractors for urban services in Adelaide. These are contracted to the Department of Planning and Infrastructure (DPI) by a total of six contracts for nine contract areas and operate under the name 'AdelaideMetro'. There are 7 accredited operators with contracts with DPI in non-metropolitan areas. These are for 13 contract areas for intrastate route services primarily from key regional areas to Adelaide. Other contracts with the DPI include six provincial city bus contracts, nine region based contracts based on local community needs and 11 non-commercial contracts with Community Passenger Networks to provide local community based services to people with transport disadvantages. These do not include the school service contracts.

In Tasmania, the ACT and the NT, urban bus services are primarily supplied by Government operators. In Tasmania for example, one government owned operator is responsible for all metropolitan services in Hobart, Launceston, and Burnie, under the one contract and one private operator is responsible for metropolitan services in Devonport and Latrobe. There are approximately 50 contracts for intrastate services and services operating either wholly within rural areas or to or from rural areas. There are approximately 700 school services in Tasmania under 423 contracts, with around 15 of these being wholly within urban areas. The number of accredited route operators is about 34, 208 accredited school operators and 435 accredited charter/tour operators.

The Australian Capital Territory has three accredited regular route operators, dominated by one main government operator. The same three operators supply school services. There are a total of 32 charter/tour operators.

In the Northern Territory there are 32 contracts, eight of which are in the Darwin Urban region of service. There are four route operators (four contracts which also include school services) and 12 school operators (26 contracts, including the four route contracts). The remaining contracts are classified as 'Migrant' and 'Special Needs'.

The total number of long-distance *scheduled* coach operators in Australia is approximately 130 (2000/01)[7]. The coach industry operates in a predominately commercially deregulated market. Operators do not receive subsidies from the Government. Different circumstances exist in each state, however, services are generally supplied by non-government-owned operators, usually rail replacement services, private

operators providing interstate services, and private operators providing intrastate services, contracted to state governments[36].

In NSW, regional coach services are provided by private operators either as commercial services (McCafferty's, Firefly, Murrays, and Premier Motor Service) or under contract to StateRail or the Ministry of Transport. In VIC, all country coach services are provided by privately owned companies under either long-term franchise or service agreements with the Department of Infrastructure, (DOI). With National Express withdrawing from V/Line, services are managed by the government. In QLD, the non-urban coach industry is fully deregulated. Contracts are service-based contracts. In SA, all country coach services are provided under contract with the Passenger Transport Board. There are four major operators as well as two interstate operators and three contracts with the Victorian DOI providing services between regional VIC and SA. In WA, the Western Australian Government Railways Commission (WAGR), own and manage the majority of intrastate coach services, servicing the southern third of the state, while 4 private operators service the rest of the state. In TAS, there are two private operators servicing 91 towns on 42 routes. In the NT, McCafferty's (Greyhound) is the only operator of scheduled regional coach services. The majority of the routes form part of its interstate service.

APPENDIX

Case Study: China

Investment in road infrastructure in China over recent years has been staggering. The National Highway Project has been a phased development of the national trunk highway system with the objective of relieving congestion and improving the integration of interregional commerce. It aims to improve access and promote the free flow of goods and people between regions, especially within the north-south corridor. The facilitation of trade, mobility, and efficiency has made and will continue to make these projects extremely viable investments.

The strong economic growth achieved in China since the 1970s has put substantial pressure on the transport network. The traditional mode of transport (the train) has reached near capacity and therefore the demand for road transport has risen dramatically. In the past, most of the investment in transport (only 1.5% of GDP) has been geared towards the railways and therefore China's road network has been among the sparsest in the world, (World Bank Group).

Investment in highways has been very strong and by the end of 2001, highways with a sealed road surface measured 1.546 million kilometres (a growth of 139% from 1979). At the end of 2000, expressway length totalled 16,000 km and by the end of 2001 this had risen to 19,000 km and China had now the world's second longest total expressway length, replacing Canada. By the end of 2001, county level highways had risen from 588,000 km in 1979 to 1.277 million km, (an increase of 117%). These highways have helped to service many remote and poverty-stricken areas and aid in their development. By 2010, China will have a highway network covering all available trunk lines and Beijing will have highway access to all major cities and provincial capitals with populations over 1 million. For those with populations over 500,000 Beijing will link up with 90%. All rural towns made accessible will be linked by the highway system and 96% of administrative villages. The total highway distance will be 1.8 million km, including 35,000 km in expressways, benefiting 600 million people. By 2020, the total highway length will equal 2.3 million km including 55,000 km of expressway benefiting 900 million people, (Chinese Ministry of Communications, in People's Daily Online, 8/7/01).

Investment in the construction of roads over the period 1996-2000 is estimated at US$107 billion, (five times that of the previous five year period), (http://www.china.org.cn/95e/95-english3/24.htm). The World Bank has financed seven key highway projects in China from 1998 to 2000, with total investment exceeding US$1.5 billion.

Case Study: Curitiba

Curitiba, Brazil, is an excellent example of well chosen transportation and land-use planning decisions. The urban bus system is one of the most efficient, cost-effective and accessible in Brazil and perhaps the world. The rapidly growing population, currently approaching three million, onset by urbanisation necessitated a Master Plan, which has resulted in the Integrated Transport Network that exists today.

The main mode of public transport has historically been the bus, and the city did not try to alter this by replacing them with expensive subways or rail-based systems, but rather improved the existing bus system and developed a surface-based system that was affordable. The Government moved from a service provider to a regulator and a private/public partnership now exists whereby the private operators provide the buses, drivers, maintenance and capital. The public sector provides the planning, roads, terminals, scheduling and enforcement of standards. They also collect the fares, provide public accounting and distribute revenue on basis of negotiated contracts. No subsidies are provided to the operators.

Arterial corridors were constructed in accordance with a Master Plan developed in 1965, and these governed the growth of the city. The transport system is made up of three complementary levels of service: feeder lines; express lines and; inter-district routes. The feeder lines connect the (mostly lower income) suburbs with the express system along the structural corridors. These express systems are composed of two restricted lanes dedicated to buses. These operate much like an above ground rail system consisting of double and triple-articulated buses capable of carrying up to 270 passengers. The inter-district routes connect to the axis of the express lines without entering the city. This integrated system consists of many varying types of routes which are easily identifiable by the colour and type of bus. There is only one fare where short trips pay for the long trips. It is termed the “social fare” because it reaches the low-income population in the suburbs who previously were required to pay for numerous and longer-distance trips.

Travel time has decreased and convenience increased. The competitive nature of the system – speed, punctuality and regularity – has also contributed to a fall in private car usage. The system now transports more than one million passengers per day at better cost and service levels than any other large and moderate-sized city in Brazil.

Case Study: Toronto

Another example of successful initiatives in public transport is evidenced by the case of Toronto. Toronto is a highly-planned city with a very successful integrated system of subways, buses and streetcars. In 2002, the entire Toronto Transit Commission (TTC) system carried 415 million passenger trips (a decrease of 4.5 million from the previous year), or approximately 1.4 million on an average weekday. Up to 80 per cent of this 1.4 million take the bus or street car for all or part of their journey and ninety (90) per cent of local transit trips in the Greater Toronto Area (GTA) are carried by the TTC system.

The TTC has historically provided public transport, taking the role of owner and operator. This has changed over recent years, and in the case of buses, the TTC has been broken up into separate operating companies managed and operated independently. The TTC maintains the role of administrator and coordinator, ensuring the standards stipulated under the Performance Based Contracts are met. These PBCs operate in various areas of the region and individual companies can vary their service levels and routes as long as they hold up to the regulations of the PBCs.

Toronto is a highly dispersed city, similar in size and population to cities such as Melbourne. The cost of running the public transport system is similar to that of Melbourne, yet with less than half the subsidy, although fares are lower. Sixty-eight (68) per cent of the operating costs are recovered from fares in comparison to thirty-five (35) per cent for Melbourne.

Performance Based Contracts or Competitive Tenders

The 90s saw a rush to competitive tendering of a range of services that had previously been supplied by governments, mainly driven by pressures to reduce the budget cost impact of service provision. The focus was thus typically on minimising costs to government (under the label of cost efficiency), rather than on delivering specific service quality outcomes.

Performance-based contracts (PBCs) have emerged as an alternative to competitive tendering (CT), based on the premises that:

- competitive tendering tends to focus on cost reduction, whereas governments are recognising the need for much broader outcome objectives (e.g. of the triple bottom line variety involved in reducing the external costs of car use);

- each geographical location is different and the incumbent offers the best information to start with in extracting improved performance through appropriate incentives. This approach recognises that the experiences to date (especially in recent times) should at the very least be used as the best basis for determining the first round optimal service and hence subsidy levels; and,

- a transparent partnership between the regulator and the service provider offers the most effective way of delivering transport services, both minimising the risk of regulatory capture as well as ensuring that the allocation of subsidy is determined optimally from a system-wide perspective, not on an individual contract by individual contract basis (as would be required under competitive tendering – see below).

Accumulated evidence around the world strongly supports the view that bus operators are much closer to the customer and therefore enjoy market knowledge that is greater than that of the regulator. As a consequence, if incentive payments are appropriately structured, operators are likely to seek out new opportunities to grow the market. Performance-based contracts recognise this expertise and are structured via incentives to harness the expertise so that customers and the wider community can reap the benefits.

The idea of Performance Based Contracts is not new and has received strong support in Europe, especially in Scandinavian countries where they have rejected competitive tendering except as a last resort strategy (ie non-compliance under PBC's). PBC's focus is on getting the right incentives in place to ensure that subsidy allocations (and hence service levels) are optimal from a *community perspective*, encompassing Community Service Obligations (CSOs), public transport user benefits and external cost reduction. The idea is simple: as an example of one form of PBC, individual operators are offered a capped subsidy per vehicle kilometre for the provision of minimum service levels (MSL) and an incentive payment in the form of a subsidy per passenger trip for passenger numbers above the trip numbers associated with the minimum service level, in return for delivering a level of service and fare regime that satisfy both the social obligations of government and the commercial objectives of operators. Importantly, the subsidy levels

established under PBC contracts are derived from social criteria and not commercial criteria but they recognise that the latter must be taken into account if an operator is to deliver value for money in the way they use the subsidy.

If CT specifications are defined in the same way as a PBC with a bid to deliver the CSO MSL and a bid to deliver additional passengers at a subsidy dollar per passenger (distinguishing the user benefit and externality benefit dollar rate), they might be seen as approaching the optimum social outcome that PBC's offer. The necessary condition is that the entire set of contracts awarded under CT have hit on the right levels of service and fares so as to maximise social surplus while delivering normal profits (ie not excessive profits under the total system-wide subsidy cap). This would be an accidental outcome of the CT process, rather than being the intended result it would be under a PBC regime as proposed herein.

Under performance-based contracts, there is a process in which the optimal subsidy can be established, based on existing levels of services, fares etc for each incumbent operator (or based on alternative sets of service levels/fares). In Hensher and Houghton (2003)[37], the idea of performance-based contracts is developed and implemented system-wide within the Sydney context for outer area service providers, as an illustration of how the approach would work in practice.

Unlike competitive tendering as we know it, performance-based contracts do not dictate the details of specific service levels but rather encourage the operator to build on their knowledge of the market to move service levels to those that deliver the best value for the subsidy dollar. Competitive tendering is not excluded from the contract regime, rather it is used as an effective instrument to protect the market of consumers if an operator defaults on the delivery of service levels that arise from determination of optimal subsidy outlays.

Competitive tendering is market driven at the time of bidding but generally provides the wrong set of incentives to do more in line with social obligations or external benefits. The market will not identify (or guarantee) the optimal level of subsidy as derived from a social surplus maximisation model in which profit maximisation and external benefits are both taken into account. This is especially problematic at a system-wide level, where the need to establish an incentive payment scheme taking into account all services in a geographical jurisdiction (eg a metropolitan area) is crucial to the calculation. Competitive tendering is focussed on individual contracts with no mechanism to ensure that the incentive payment support sums to the optimal subsidy commitment across a broader geographic area. This is the area where PBC is much better because it takes advantage of

- the market,
- the obligation on delivering value for money spent from taxpayers in the form of optimal subsidy and
- external benefits.

If bidders under CT are offering prices that comply with profit maximisation, then this is taken into account under PBC's but within a framework in which profit maximisation must comply with conditions of social surplus maximisation.

To these points can be added the concern that competitive tendering is open to the regulator being captured by powerful monopolist providers, a particular concern as the number of operators diminishes with global purchasing and/or reductions in the number of contract areas. Provided remuneration of operators under PBC's is based on efficient cost benchmarks, there is a growing feeling that government objectives might be better delivered in this contracting environment (under a transparent partnership) than under competitive tendering.

Performance Based Contracts align contract specification closely with the intended policy outcomes from public transport service provision. This will increase the prospects of successful achievement of the intended policy outcomes. The approach will be of great value to government since it will generate data on the social benefits of alternative service level changes, data that will assist government in its determination of the most appropriate level of total funding (TB). It also will encourage development of co-operative partnership relationships between government and operators in service delivery, whereby both parties can achieve benefits while the community's transport services are made more sustainable long term.

The key issues promoting the PBC framework are:

- Social obligations of government (through minimum service levels and fare caps).
- Deriving value for money from expenditure of the scarce subsidy dollar.
- Provision of incentives to grow patronage above MSL levels.
- System-wide focus on optimal allocation of subsidy support above MSL.
- Structuring incentive payments to reflect source of patronage (ie car vs non-car source).
- Using market forces throughout the contract period to secure improved service performance.
- Giving operators greater responsibility to build the business and customers while protecting government commitment of subsidy support to avoid any budget blow out.
- Providing the evidence required for government to claim genuine gains in social benefit.
- Avoiding the uncertainty of sequential competitive tendering of many contracts where control of subsidy dollars to ensure optimal allocation is high risk.
- Ability to implement competitive tendering where non-compliance is identified.
- Operators can still buy and sell their businesses, but with greater certainty about the future and hence greater incentives to invest in the longer term.

SOURCES:

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* *The HACC program in SA encourages services to include the cost of incidental transport needed for clients to access their service as part of their overall application for funding. Therefore the majority of funding that goes to* ***incidental transport*** *is unable to be identified in the overall HACC budget for SA. Therefore the total figure of $1,708,160 is a significant underestimation of the total funds that go into transport in SA from a total of $95,012,000.*

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