Chapter 2

Background on public transport in Australia

2.1 This chapter gives basic information about public transport in Australia as relevant to the discussion points that follow.

2.2 Cycling is mentioned briefly although it is not the main focus of the inquiry. Policies to encourage cycling and walking should be considered together with policies to encourage public transport use, because they can support each other, and because they act together in reducing the environmental and public health detriments of excessive car use.

Public transport basics: services, mode share, trends

Description of public transport services

2.3 Urban public transport services in Australian cities are mostly by bus (bus and tram in Melbourne), with an important heavy rail share in Sydney and Melbourne, and a smaller rail share in Brisbane, Adelaide, Perth and Newcastle.[1]

2.4 Services tend to be better (for example, full time services with a daytime frequency of at least 4 per hour) in pre-world-war-two suburbs which grew up around train or tram lines.[2] These areas tend to suffer more traffic and parking problems (since they were not originally built for the car), and their activity centres tend to be more rationally located with respect to the public transport network (since they grew up around it). They tend to have higher public transport use, which makes better services more viable.

2.5 Services are worse (for example, daytime only bus services of 2 per hour or less) in newer urban fringe suburbs. These areas have usually been developed on the assumption of almost total car use, and are badly designed for public transport. At the regional level activity centres may be dispersed in a way that makes it impossible to design an efficient bus network. At the local level, cul-de-sac based street patterns force circuitous and inefficient bus routes. The local environment, having been planning for the convenience of motorists, is often hostile to pedestrians (which is detrimental to public transport use as almost all public transport trips have a walking component). Public transport in these areas cannot attract 'choice' riders, and is

1 In Sydney 47% of public transport trips are train trips. Train trips are more important in passenger kilometres travelled as they tend to be longer. Transport Data Centre 2008:5.

2 In these areas the buses which replaced trams (except in Melbourne) often still follow the original tram routes.

effectively a social service for people without cars, with a very small proportion of total trips (less than 5 per cent). [3]

2.6 Since many people of lower socio-economic status are in outer suburbs, there is a serious problem of transport disadvantage in that many people who can least afford it are forced to spend an excessive proportion of their income on running cars (see paragraph 3.59ff).

2.7 Services are usually best on radial routes to central business districts (this applies particularly to rail lines, which are almost all radial). These routes were the focus of pre-World-War-Two public transport networks, and on these routes public transport may still carry a high proportion of total trips. 'Best' means, with relatively good network coverage and service frequency; however bus and tram services may also be very slow and unreliable because of traffic congestion.

2.8 Local bus services in the smaller regional cities or country towns, where they exist, have the same features as those in the outer suburbs of the cities (infrequent service and very low mode share).

Public transport mode share of travel

2.9 Australia-wide, metropolitan travel in passenger kilometres is about 85-90 per cent by car, 10 per cent by public transport, and the rest by cycling or walking. The public transport share is lower than average in the smaller cities (5-10 per cent), and higher in Sydney. [4]

2.10 Public transport trips as a proportion of all trips is higher in peak periods:

Public transport trips as share of all trips, 2006

	Sydney	Melbne	Brisbane	Adelaide	Perth	Hobart	Canberra	Darwin	total
PT trips as % of motorised trips: commute	22.7	14.8	14.7	10.6	11.0	7.1	8.6	5.1	16.1
PT trips as % of motorised trips: all day	13.3	8.4	9.0	5.7	6.5	4.3	5.7	7.2	9.5

source: Bureau of Infrastructure, Transport and Regional Economics, information sheet 31, *Urban Public Transport: how people move about in Australian cities*, 2009, p2

2.11 Note that comparative figures like these should not be taken as implying praise or criticism of a city's public transport authorities. Different public transport use in different cities depends strongly on variables beyond the control of the public transport authority, such as city size, density, degree of centralisation, and the traffic and parking situation.

3 An exception may be the journey to work in favourable situations.

4 Bureau of Transport and Regional Economics 2007:23. Cosgrove 2009.

2.12 The public transport share is much higher for trips to central business districts, where public transport services are best and problems of traffic congestion and parking most favour public transport. For example in Sydney public transport handles 72 per cent of journeys to work in the central business district. The public transport share for morning peak trips to the central area is 60 per cent in Melbourne and 35 per cent in Perth. Thus existing congestion free rail services are very important for supporting the economic life of central business districts.[5] However travel to central areas is only a small proportion of total metropolitan travel, so a high public transport share to central areas can co-exist with a low public transport share for metropolitan travel in total.[6]

2.13 The distinction between passenger kilometres and trips should be noted. The modal split of passenger kilometres and trips will differ insofar as one mode's trips tend to be longer or shorter than another's. For example, in Sydney public transport trips are split about 50/50 between bus and train, but public transport passenger kilometres are 70 per cent by train, because train trips tend to be longer.[7]

2.14 Passenger kilometres travelled are more relevant for planning purposes (as an indicator of the resources needed and environmental consequences); but trips are probably more relevant to judging the social value of the travel. Public transport users tend to make fewer trips and travel less altogether than car users, so it is likely that their trips are of more value to them than the kilometres travelled, compared with kilometres travelled by car, would suggest.[8]

2.15 Similarly, passenger kilometres are a poor measure of the relative importance of walking and cycling trips, which will naturally be short. For example in Sydney 'walk only' trips are a surprisingly high 18 per cent of all trips.[9] Encouraging walking trips should be a strong priority of sustainable urban planning policies, even though they may look unimportant in terms of kilometres travelled or infrastructure needed.

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5 Submission 87, Australasian Railway Association, p.18. Infrastructure Australia 2008:43. Corpuz 2007:1.

6 For example in Sydney in the AM peak period (6.30-9.30am) about 5 per cent of all trips in the metropolitan area have a destination in Sydney CBD. G. Corpuz, NSW Transport Data Centre, pers. comm. July 2009.

7 In Sydney the average length of trips is: car 10km; train 20km, bus 7km, walk only 700 metres (estimated), 'other' (taxi/bicycle/other not defined) 7km. Figures are for the Sydney Statistical Division which includes the Central Coast and Blue Mountains, so the rail figure is probably significantly weighted by long commuter trips, and would be lower for the Sydney metropolitan area only. 'Other' is split equally between taxi, bicycle and other not defined. 'Walk only' excludes walking to access other modes of the transport. Transport Data Centre 2008:5,29,34.

8 This is relevant to judging the value of public transport to prevent social isolation. A 3 kilometre bus trip which is a pensioner's weekly outing to the social club probably has greater marginal utility to the traveller than a 3 kilometre car trip which is a fringe dweller's jaunt to the shop to pick up a bottle of milk that they forgot earlier.

9 In Sydney, 2006, the mode share of trips was car 69.5%, train 4.9%, bus 5.6%, walk only 17.7%, other 2.3%. Transport Data Centre 2008:6

Trends in public transport use

2.16 The public transport share of total urban travel (passenger kilometres) stood at about 50 per cent in 1945. It then dropped steadily to the present low level of around 10 per cent by 1980. Reasons for this were predominantly rising incomes and car ownership; but also the declining share of commuting trips relative to other trips; more flexible working hours; and increased workforce participation by women with resulting increase in multipurpose trips.[10] As well, as cities have grown outward a greater proportion of people live in fringe areas that require more travel and are poorly designed for public transport.[11]

2.17 The public transport share has remained generally stable since 1980 as ridership has grown slowly in proportion to population growth.[12] However increases in ridership significantly above trend have occurred in most capital cities in the last few years. This has led to complaints about overcrowding and focussed attention on the need for improvements.

2.18 For example, Sydney Cityrail had 5.7 per cent growth in 2008, and Sydney buses 3.2 per cent. Melbourne rail trips grew by 38 per cent over the three years to September 2008, leading to strong complaints about overcrowding. Melbourne bus patronage grew 7.4 per cent and tram patronage 5.3 per cent in one year to 2007, and Melbourne's public transport mode share has increased from 9 per cent in 1999 to 13 per cent in 2008. Public transport trips in the Translink area of South East Queensland (Brisbane/Gold Coast/ Sunshine Coast) increased from 100.8 million trips in 1998-99 to over 171 million trips in 2007-08. [13]

2.19 In total in the eight capital cities public transport trips increased by 14.7 per cent from 2004 to 2008, and the public transport mode share increased from 9.3 per cent to 10.6 per cent These growth rates have been well above population growth. The key drivers of this are usually said to be increasing petrol prices and 'changing community attitudes.'[14]

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10 Bureau of Transport and Regional Economics 2002:xii. Cosgrove 2009.

11 How much of the last point is cause and how much effect (given the rise in car use, there was no need to live in areas with good public transport) is debatable.

12 Cosgrove 2009.

13 Submission 189, NSW Ministry of Transport, p.4. Submission 130, Environment Victoria, p.2. Submission 10, Victorian Public Transport Ombudsman, p.1. Submission 33, Bus Industry Confederation of Australia, p.10. Submission 53, Council of Mayors SEQ, p.9. M. Hopkins (Victorian Department of Transport), *Committee Hansard* 30 March 2009, p.89

14 Bureau of Infrastructure, Transport and Regional Economics 2009:2. Victorian Department of Transport, additional information 30 March 2009, p.12: in a survey of people's reason for switching to public transport, the most important reasons were petrol prices; health and fitness, and environmental concerns. See also M. Hopkins (Victorian Department of Transport), *Committee Hansard* 30 March 2009, p.90. See P. Moore (UITP), *Committee Hansard* 19 March 2009, p.14, for US research on why people are driving less.

2.20 State government urban plans project continuing strong growth of public transport use. This is to be expected because of population growth anyway (assuming a stable mode share).[15] Whether the above trend growth of the last few years will continue into the long term, leading to a significant long term increase in the public transport mode share, is uncertain.

Trends in cycling

2.21 Bicycle ownership in Australia is high (from 29 per hundred people in Sydney to 65 per hundred people in Canberra), but very few city people use a bicycle on an average day (from 1 per cent in Sydney to 4 per cent in Perth), and only 1-2 per cent of work trips are by bicycle.[16] However there have been significant percentage increases in bicycle use (far above the trend increase in car traffic) in some cities in recent years. This may be a response to bicycle infrastructure improvements that have occurred in some cities, and/ or a response to generally increasing traffic congestion and petrol prices.[17]

2.22 Bicycle use probably varies greatly between the various regions of a city, depending on how suitable the local environment is for safe cycling. Some authorities argue that more cycling, apart from being desirable for the sake of healthy lifestyles, can and should have a serious role in reducing traffic congestion.[18]

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15 For example, NSW Government 2006:16; Queensland Transport 2009:xi; Victorian Government 2008a:62. Sydney is expected to grow from 4.2 million people in 2006 to 5.9 million in 2036. Melbourne is expected to grow from 3.7 million to 5.4 million by 2036. The population of south east Queensland is expected to reach 4 million by 20226. Submission 189, NSW Ministry of Transport, p.3. Victorian Government, additional information 30 March 2009, p.3. Queensland Transport 2008:v

16 Australian Bicycle Council 2004:5-7. See also submission 76, Cycling Promotion Fund, p.6

17 M. Burke (Pedestrian and bicycle Transport Institute of Australasia), *Committee Hansard* 3 March 2009, p.24. Use of bicycles for the journey to work increased from 2001-2006 by: Sydney 9% Melbourne 43% Adelaide 31%, Hobart 25%, Perth 16%, Canberra 16%, Brisbane 13%; Darwin -7%. ABS data: see submission 45, C. Rissell, attachment. ABS data, being collected in winter, may be conservative: submission 87, Australasian Railway Association, p.43.

18 For example Cr C. Moore (Sydney City Council), *Committee Hansard* 6 March 2009, p.14. Sydney City Council has ambitions projects to promote cycling in its area. Council has argued that promoting cycling on the Anzac Bridge (Rozelle-City) could postpone the need for costly capacity upgrades. In 2008 nine per cent of traffic entering Melbourne CBD was bicycles: 'Space for bikes as builders make all the ride moves', *The Age* 27/7/2009:6. Many car trips are quite short and could easily become bicycle trips if it was possible to ride safely. Submission 66, Sydney City Council, p.10. Submission 87, Australasian Railway Association, p.44. Submission 138, Bicycle Network. M. Burke (Pedestrian and Bicycle Transport Institute of Australasia), *Committee Hansard* 3 March 2009, p.24.

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2.23 A 10 per cent public transport share of metropolitan travel may seem low, given the strong public commentary in the last few years about overcrowding, and the very expensive rail projects now planned or under discussion in several cities.[19] However concerns about overcrowding refer mostly to a few major routes focussed on central business districts, where the public transport share is much higher, and where public transport is vital to moderate traffic congestion. In a metropolitan average this travel is far outweighed by the greater quantity of miscellaneous cross suburban travel, where the present public transport share is very low (less than 5 per cent).[20]

2.24 Some implications of this are:

- If the aim is to significantly increase public transport mode share, actions must give strong attention to the whole network, and should not focus only on the most visible problem of overcrowding on trunk routes to city centres.
- Similarly, improvements should aim to increase all-day use, and use by occasional riders, not only peak hour commuter use (this will improve financial results, as accommodating offpeak riders has lower marginal costs[21]).
- Because public transport use is now so low, only a small behavioural shift by motorists is needed to greatly increase public transport use. This would make better services more viable.[22]

Management of public transport services

2.25 Urban public transport services are overwhelmingly provided (in the financial sense) by State governments.[23] Sometimes local councils contribute to operating subsidies.[24] [25] The operator (in the practical sense) may be a corporatised state-owned

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19 CBD metro and west metro in Sydney; cross-city rail tunnel and 'Regional Rail Express' (Tarneit link) in Melbourne; inner city rail expansion options under study in Brisbane.

20 'Cross-suburban' may include significant travel that is on radial routes but not to the central business district: Public Transport Users Association 2009a:22

21 Since it does not require extra vehicles that are used only once or twice a day.

22 For example, if car and public transport trips are now in the ratio 9 to 1, and 10 per cent of car trips become public transport trips, this would almost double public transport use.

23 The major exception is Brisbane City Council, which for historical reasons operates most of the bus services in the council area (which has a population of about 1 million and covers almost two thirds of metropolitan Brisbane). The State Government contributes to the operating subsidy: Cr J. Prentice (Brisbane City Council), *Committee Hansard* 3 March 2009, p.8

24 Gold Coast City Council contributes $5 million to the State's operating subsidy of Gold Coast bus services. This is funded by a levy on residents. W. Rowe (Gold Coast City Council), *Committee Hansard* 3 March 2009, p.69. Submission 54, Gold Coast City Council, p.3

25 Councils often provide or contribute to community transport: see paragraph 4.67ff.

authority (for example NSW Railcorp, NSW State Transit Authority, Transadelaide), or private providers under contract to government (as is now common for bus services).[26]

2.26 Contracted out services may vary in how much planning and marketing responsibility or revenue risk the contractor shoulders. In the least risk arrangement the contracting authority plans the network and timetable; the contractor services the agreed timetable for an agreed price; the authority takes the farebox revenue; and the shortfall between the revenue and the contract price represents government funding of the operating loss.[27] The contracting authority may also be responsible for overall public transport planning, marketing and branding in the city. In other arrangements there may be revenue-sharing conditions to give the contractor a financial reward for increasing patronage.[28]

Cost recovery of public transport services

2.27 In Australia, as in most developed nations, public transport services are heavily subsidised by government. The community accepts this because of the perceived community benefits of public transport, which will be discussed in chapter 3.

2.28 In Australian cities the farebox cost recovery of operating costs is usually between 20 and 35 per cent. Australia's overall public transport cost recovery is a little better than US cities and a little worse than European cities.[29] [30]

2.29 The total subsidy to urban public transport (five capitals) is estimated at about $3.3 billion per year, being the difference between farebox revenue $1.6 billion and operating costs $4.9 billion.[31]

2.30 Cost recovery ratios should be distinguished from actual subsidy per trip or per passenger-kilometre, or full economic costs per trip or per passenger-kilometre.[32]

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26 For example, 700 private bus and ferry companies are contracted, funded and regulated by the NSW government: submission 189, NSW Ministry of Transport, p.2

27 And of course the contractor's profit; but the arrangement is made in the hope that even allowing for this the cost will be less than in full government ownership.

28 For example Melbourne train and tram contracts, and Perth bus contracts, have revenue-sharing arrangements for patronage in excess of a base case.

29 Australasian Railway Association 2006:12,22.

30 Cost recovery information is often hard to extract from official reports. Actual farebox revenue may not be reported separately from government community service payments to top up concession fares. Service providers under contract may simply report the contract sum as their income, which will make the financial result look close to break even (since the contract sum was calculated to have that effect). The contracting government authority may report the farebox revenue and the contract expense mixed in with its other revenue and expenses.

31 Submission 87, Australasian Railway Association, p.27. ARA 2006:22. This excludes the cost of significant capital works. 'Five capitals': Sydney, Melbourne, Brisbane, Adelaide, Perth.

32 Full economic costs are the sum of user charges, government subsidies and external costs.

A lower cost recovery does not necessarily indicate a less efficient or less worthwhile service, not least because cost recovery depends largely on political decisions about the fare level. For example, according to Dr Glazebrook Sydney's trains have lower farebox cost recovery than Sydney's buses (23% against 33%) but also have lower total cost of provision per passenger-kilometre (47c against 57c). This is mainly because train trips tend to be longer, and per kilometre fares decline with trip distance.[33]

2.31 If services are improved (for example, more frequent services on an existing routes, or greater density of route coverage), patronage will increase. However patronage may not increase enough to cover the extra costs. The total subsidy needed may increase even if the subsidy per trip decreases.[34] This discourages governments from improving services. However better services may still be beneficial to total economic welfare because of the external benefits of public transport. This applies particularly where public transport reduces traffic congestion (as discussed from paragraph 3.5).

2.32 A major challenge for public transport authorities is how to get 'social service' services up to a level of frequency that can begin to attract 'choice' riders, without excessively increasing the cost in public subsidy.

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2.33 The public subsidy to public transport is significant. This reinforces the need to ensure that the money is spent effectively, and that the other policies are in place which are needed to maximise the benefit from it (primarily, best practice management of a fully integrated network, and urban planning policies to support public transport use, as discussed in chapter 4).

2.34 However the cost should be seen in context of the high costs of alternative car transport. Australians spend about $55 billion per year on buying and operating cars.[35] The public costs of providing roads and parking spaces, and the external costs of road transport, such as congestion and accident costs, must be added.[36]

2.35 For example, Dr Glaze brook estimated that in Sydney the full economic cost of travel including private financial costs, public financial costs, and non-financial/ external costs, is: train 47c, bus 57c, and car 86c per passenger kilometre. The

33 Submission 88, G. Glazebrook, attachment: *Taking the con out of convenience: the true cost of transport modes in Sydney*, 2009, s6. Glazebrook 2009.

34 The subsidy per trip could decrease as the fixed costs of the operation are spread over more riders.

35 ABS Household Expenditure Survey 2003-04: 7,735,800 households times average weekly expenditure on motor vehicle ownership and operation $132.76; adjusted for inflation.

36 'External costs': costs which a person's actions impose on others without compensation. For example, a person entering a congested road causes delay to others.

externality cost of car travel is roughly equal to the public subsidy of bus or train travel at about 38c per passenger kilometre.[37]

2.36 The cost of the public transport subsidy must also be seen in relation to the extra car costs which would be incurred without it. For example, recent studies for the NSW Independent Pricing and Regulatory Tribunal (IPART) suggest that, taking account of external benefits (external costs avoided, mainly congestion), Sydney bus fares are about right and Sydney rail fares are a little lower than is economically optimal. IPART found that the value of the external benefits of Cityrail was $1.7 billion in 2008/09. [38]

2.37 The Bureau of Infrastructure, Transport and Regional Economics has estimated that if all public transport, walking and cycling trips were car trips, the avoidable cost of traffic congestion (eight capital cities) would be about $3 billion per year higher than it is.[39] The subsidy to public transport seems to be reasonable value by comparison, considering that it also serves other social purposes, as discussed in chapter 3.

2.38 It is often noted that the subsidy to public transport goes disproportionately to inner and middle ring suburbs which have better services - and where the residents tend to be people of higher socio-economic status. This creates equity concerns.[40] In the Committee's view the concerns are valid. The proper response is not to reduce service in inner areas which are now well served (and where public transport has the most important role in moderating traffic congestion). The proper response is to improve public transport in outer suburbs and rural and regional areas.

37 Submission 88, G. Glazebrook, attachment: *Taking the con out of convenience: the true cost of transport modes in Sydney*, 2009, section 6. Figures include RTA road expenditure but not local council road expenditure. Figures include the value of off-street parking (land and structures) but not the value of land occupied by roads.

38 LECG 2008:12. LECG 2009:10. Independent Pricing and Regulatory Tribunal 2008:9

39 Bureau of Transport and Regional Economics 2007:120

40 For example, Dr J. Dodson, *Committee Hansard* 3 March 2009, p.44