MONASH University

26 February, 2009

The Secretary
Senate Standing Committee
Rural and Regional Affairs and Transport
PO Box 6100 Parliament House
CANBERRA ACT 2600

Dear Sir or madam,

RE: Inquiry into the investment of Commonwealth and State funds in public passenger transport infrastructure and services
Submission from Professor Graham Currie, Chair of Public Transport, Institute of Transport Studies, Monash University

I refer to your letter of December 19 inviting me to provide a written submission to your Inquiry. This submission is structured as follows:

- Basis of the submission
- Response to terms of Reference Issues
- Closing Comments

BASIS OF THE SUBMISSION

I wish to clarify the basis of my submission and in particular outline my credentials and rationale. My name is Graham Currie I hold the first professorship in public transport in Australia and am based at the Institute of Transport Studies at Monash University. The Institute is the designated 'key centre' in transport management by the Australian Research Council. The chair is funded by Monash University and by the public transport organizations and government in Victoria. Its aim is to increase knowledge and learning in the field.

I have held the chair since 2004 and have over 30 years experience in planning and designing public transport systems and in researching and teaching public transport planning. I have led planning studies of public transport systems throughout the world and also in every state, territory and most towns in Australia.

This submission represents my view of the more important issues facing public transport in Australia and does not necessarily reflect the views of the Institute, Monash University or any of my sponsors.

My rationale for making the submission is that there are significant challenges facing Australias future and that Australian public transport has an essential role to play in this future. However there are significant structural problems limiting the effectiveness of public transport which need to be addressed. Your inquiry is an excellent opportunity to raise and hopefully address these issues.

As an academic I have tried to assemble a suitable suite of evidence to back up any statements made. This is to assist the committee base its inquiry on the available evidence.

RESPONSE TO THE TERMS OF REFERENCE ISSUES

Seven issues were identified in inquiries terms of reference. I have structured my response around these with the next section 'Closing Comments' summarizing what I feel are the key issues facing the federal Government in relation to Australian public transport.

Institute of Transport Studies
Department of Civil Engineering
Faculty of Engineering
Building 60, Clayton Campus
Monash University, Victoria 3800, Australia
Telephone +61 3 9905 5574 Facsimile +61 3 9905 4944
graham.currie@eng.monash.edu.au
www.monash.edu.au
ABN 12 377 614 012 CRICOS provider number 00008C

a. Auditing the State of Public Passenger Transport in Australia

There are numerous ways of looking at the 'state' of Australian public transport. I believe typical public views would use terms like unreliable, inefficient, ineffective, poorly coordinated, under-funded, and under-planned. My considered view is that the most significant single way of defining the 'state' of Australian public transport is to say we don't have very much of it. Table 1 of my submission summarises what I consider are the major challenges facing the industry. I have placed lack of service at the top of both urban and rural problems.

Table 1 – Public Transport Problems in Australia

PROBLEM/ISSUE	DETAILS
URBAN	
Lack of Service	Most Australian cities have little quantity of service i.e. the service is concentrated on a few parts of the city. E.g. : - (Hurni 2006) Reports 54% of Sydney residents don't live anywhere near locations with a minimum service of 30 mins between 8:30a.m. to 15:30 (800m access distance) - (Cheal 2003) Reports 83% of residents of Melbourne don't live within access distance to a service of 30 mins headway between 5 a.m. to midnight - (Currie 2003) Reports that 68% of Melbourne residents live where bus is the only public transport and average headways are 40 mins, most weekday services finish before 7p.m. and only 20% of services run on Sunday
Poor Performance of On-Road Public Transport	Low speeds for on-road public transport e.g. Melbourne trams - very low average speeds (15/16 kms/hour (Currie and Smith 2006) – amongst the lowest 20% in the world for trams Declining speed and reliability – Melbourne Trams - 8% decline in speed reported and increasing unreliability
Lack of Capacity	Rail overloading in Melbourne and Sydney e.g. Transit Australia (Dec, 2005) noting a report by Maunsell Australia indicating train volumes on the Broadmeadows, Sydenham. Melton, Werribee and Williamstown lines are close to capacity. Substantive growth in recent rail demand is noted (12.5% in the last 6 months) and further growth forecast
Poor Funding	Implied by lack of action on the above measures
RURAL	
Lack of Service	General consensus that there is virtually no public transport available for most travel in rural and regional Australia e..g. (Currie et al. 2005). Poor sustainability of services given low density and spread out nature of rural and regional Australia
Poor Coordination of Community Transport	Need for localised transport solutions. However poor coordination and low utilisation of community transport in rural Australia

Source: Currie G (2006) 'Three 'Tear' Government Involvement in Australian Public Transport – Failures and Opportunities' AITPM National Conference August 2006

The studies cited in Table 1 show that the vast majority of residents living in our largest cities have no access to public transport of any reasonably significant standard. Service levels are very low. While most of our major cities have heavy rail services operating reasonable service levels, in practice only about 5% of Metropolitan residents live within walking access to a station (Currie 2006d).

The reasons for poor service levels are many and varied with much debate surrounding what is most influential. My opinion is that Australian urban public transport has never (and still is not) expanding as our cities grow. It has lagged behind as dependence on the private car has dominated urban development. As a result we have some of the lowest density cities in the world and it has been increasing difficult to provide quality service levels. In effect Australian public transport has been marginalized by our urban planning and car dependence.

The relatively low usage of public transport is in my view largely the result of poor service levels. Typical public views that public transport is unreliable, inefficient, ineffective, poorly coordinated,

under-funded, and under-planned are in my view largely the result of lack of service and the marginalization of service by government and planning.

b. Current and historical level of public investment in private vehicle and public passenger transport services and infrastructure

An important problem which restricts progress in developing Australian public transport is that we do not know the answer to this question. A major concern I have with Australian public transport is lack of freely available public information on the relative costs of investment, operating costs and revenues. I believe the Federal government could play an important role in standardizing state/territory approaches to this issue such that understanding the scale of investment becomes clearer and more easily defendable. In the short term I hope this inquiry will be able to clarify some facts. In particular it would be useful to understand existing recurrent costs, farebox revenues and capital funding levels for each of the public transport systems in each of our major cities.

I can provide the following facts about federal involvement in urban public transport based on previous research (Currie 2006e):

- (UITP 2006) report that in the 30 years from 1974 to 2004 ($2004), the Federal Government has allocated $58.0 B nationally on all roads, $2.2 B to rail capital works (mainly interstate freight), and $1.8 B to urban public transport
- The only Federal program concerning urban public transport has been the Better Cities Program (Labour Government between 1991-97). Total funding was $816M or an average of $136M p.a. for the whole nation. Only a share of this program involved funding for public transport and in total it still represented a minor part of the roads budget during this period.

The bias of Federal funding towards roads was in part recognised by the recent House of Representatives Federal inquiry into 'Sustainable Cities'. This inquiry recommended that Federal funding on roads be extended to other modes. It also suggested that funding be encouraged for urban Public Transport systems e.g. Light and Heavy rail systems in major cities.

In my opinion the current and historical levels of investment for public transport have been low and are a direct cause of the poor service levels provided. Because of endemic lack of investment many compromises have been needed over the years in maintaining and operating expensive fixed rail services. This lack of investment has resulted in poor performance as ridership has grown and infrastructure and operations are stressed. Although there are excellent economic, environmental and social reasons to invest in public transport all Australian governments have focused investment on the private car particularly the Federal government.

c. an assessment of the benefits of public passenger transport, including integration with bicycle and pedestrian initiatives

There are a wide range of benefits which result from public transport and which provide a strong basis for investment in expanding services. These benefits arise from how services can act to address the significant transport challenges being faced by Australian cities and towns. Table 2 summarises these challenges and how public transport provides benefits in addressing these issues. The problems identified; congestion, pollution, obesity, safety, oil dependence, livability and transport disadvantage are amongst the most significant issues being faced by all urban areas. The scale of these issue is also increasing as car dependence continues. While these issues are recognized in academic circles I believe the scale of the issue for Australia is not adequately acknowledged by either Government or the wider public. Evidence suggests that the costs of congestion in Australia are amongst the highest in the western world (wealth spent on transport, global cities (Newman and Kenworthy 1999)). There is emerging new evidence that transport disadvantage is also an endemic issue in underserviced outer suburban part of our cities (Hurni 2006; Currie et al. 2007). Evidence also shows Australia to be a world leader in generating greenhouse gas emissions and transport is the largest growing sector in generating emissions.

Table 2 – Passenger Transport Problems in Australia

PROBLEM/ISSUE	DETAILS	BENEFITS OF PUBLIC TRANSPORT
URBAN		
Traffic Congestion	Very high economic and community cost - Currently costs ~ $20 Billion p.a. A growing cost - .$12.8 billion nationally in 1995, with this cost expected to reach $29.7 billion by 2015 (BTRE (Bureau of Transport and Regional Economics) 2007)	Public transport is highly space efficient in congested conditions. One tram can carry over a km of traffic. One railway line can be the equivalent of a 4 lane freeways worth of traffic
Transport Pollution/ greenhouse	Costs of air pollution from motor cars has been costed at $4.3B p.a. (BIC, 2003). Some 2,400 people die each year from air pollution in Australia. 10-15% of the population display respiratory symptoms (NEPC 98). Links between motor car emissions and health issues are now well established Transport, mainly the car, accounts for 16% of Australia's net greenhouse gas emissions and is one of the highest growing sources of emissions.	Because of space efficiency and with high loadings public transport can be highly efficient at carrying passengers with much lower emissions
Obestity	Prevalence of obesity has doubled over the last 20 years (AMA, 2003) Children and adolescents notably at risk. Cause is lack of activity including car dependence.	People who use public transport are fitter because they have to walk more .(Edwards 2007; Villanueva et al. 2008)
Safety	Costs of road accidents is estimated at $15B p.a. ~2,000 deaths and 20,000 serious injuries p.a. (BTE, 1996)	There is strong evidence that travel by public transport is in general much safer than car travel
Oil Dependence	Rising cost of fuel a problem for auto use. Concerns about sustainability of future dependence on auto and oil based fuels	Efficiency in passenger number provides a major incentive for even oil based public transport. Electric modes are more efficient if powered by renewable energy
Liveability	Growth in urban motorways and increasing traffic levels declining the quality of living in urban areas – despite a growth in urban living	There is a strong dislike of congested streets (traffic sewers) in inner cities.
Transport Disadvantage	High shares of young and older Australians without access to a car (Browning and Sims 2007; Currie 2007). Much evidence of high shares of high car ownership on low income and resulting financial dependence (Currie and Senbergs 2007a).	Public transport provides an essential means of accessibility for people without access to a car. It is an alternative for those struggling with transport poverty.
RURAL		
Transport Disadvantage	People without access to cars facing social problems – lack of access to work, education and social participation	As above
Safety	As above	As above
Oil Dependence	As above	As above

Source: Based on Currie G (2006) 'Three 'Tear' Government Involvement in Australian Public Transport – Failures and Opportunities' AITPM National Conference August 2006

The benefits of public transport identified in Table 2 manifest themselves in planning as objectives for planning systems. It is my experience that authorities throughout the world struggle to balance the often competing demands which this range of objectives make on policy, planning and operations. The capacity problems faced by much of the Australian urban rail network has now limited the extent to which public transport can address congestion issues. Environmental benefits of transit are

currently being limited by the fuels and energy sources used for propulsion. Finding more environmentally sustainable ways of fueling transit vehicles is an important task.

There is also much evidence that urban public transport is catering poorly to disadvantaged Australians. An important and generally unique feature of Australian cities is the concentration of lower income and financially marginalized residents in fringe urban areas. There are strong relationships between where disadvantaged Australians live and the lack of public transport (Currie 2004a; Currie and Senbergs 2007b). There is also evidence that this has encouraged many low income families to be become car dependent. As a result a high share of low income households on the fringe of our cities have high car ownership despite high costs of running cars (Currie and Senbergs 2007a). The result is 'transport poverty'. Providing even a minimum public transport level of service can provide a significant release for these pressures (Bell et al. 2006).

d. measures by which the Commonwealth Government could facilitate improvement in public transport services and infrastructure
e. options for Commonwealth funding of public passenger transport services and infrastructure
f. the role of Commonwealth Government legislation, taxation, subsidies, policies and other mechanisms that either discourage or encourage public passenger transport
g. best practice international examples of public passenger transport services and infrastructure

At a Federal level the problems caused by the current Australian Federal approach to urban public transport are:

1. Lack of Direct Funding for Public Transport
2. Bias Towards Funding for Urban Roads
3. Taxation Bias towards Unsustainable Transport
4. Lack of Support to Encourage National Transit Knowledge Development and Training

There are strong contrasts between the Australian approach above and practices overseas.

Funding Issues

The general Federal position on urban public transport involvement has been that it is the responsibility of the States. This is unfortunate since there are clearly important national economic, social and environmental objectives (see earlier) which public transport can assist with. This position is also in stark contrast with the position of other countries. As Table 3 indicates, Australia is unique in being the only OECD country which does not have some Federal role in funding and supporting public transport.

Table 3 – Public Transport Capital Funding - Europe

COUNTRY	FUNDING SOURCES (% OF CAPITAL)			
	FARES/ COMMERCIAL	NATIONAL GOVERNMENT	LOCAL GOVERNMENT	HYPOTHECATED TAX
Belgium	-	Some	Most	-
Denmark	-	Bulk	Some	-
France	-	30%	Remainder	Some
Germany	-	50-75%	Remainder	Some
Greece	-	100%	-	-
Ireland	-	100%	-	-
Italy	-	100%	-	-
Luxembourg	-	100%	-	-
Netherlands	-	50-80%	Remainder	-
Portugal	-	Most	Some	-
Spain	-	100%	-	-
United Kingdom	For Bus	Most	-	-

Source: (Halcrow Fox 1995)

European countries show a distinct bias for Federal sourcing of funding for capital investment in urban transit with 100% of capital coming from national governments in Italy, Spain, Ireland, and Greece and most from almost all the other European countries studied. Europe also has substantial funding for urban mass transit system development from trans-national agencies such as the EU.

Overseas federal government's are also involved in funding recurrent expenditure in urban transit although this is at a far lower share of total funding compared to capital (Halcrow Fox 1995). The principle recurrent funding source in Europe is farebox revenue due to high patronage levels associated with the dense nature of European cities and low levels of car ownership.

There are several examples of innovative and sustainable funding sources for public transport in Europe such as the congestion charging scheme in London . One of the key benefits of congestion based charging in urban areas is that charges are used to suppress excess road traffic demand whilst at the same time act to create a funding source which can be used to support alternative and more efficient means of solving congestion problems i.e. public transport. In effect the charge acts to reduce the problem and fund a solution.

The Federal Government in the United States is a major direct contributor to urban public transport funding. Federal programs supporting urban public transport operations and 'new start' systems have been encouraged since the Kennedy Government in the 1960's (Black 1995). The current US Federal transit funding basis is enshrined in the SAFETEA-LU act (Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users), which authorizes Federal transit and highway programs through to Fiscal Year (FY) 2009 (APTA 2005). Investment of some $US 52.6B for urban transit is provided for in this legislation (2004-2009) or broadly $US 9B p.a.. Figure 1 shows the long term record of US Federal funding in urban transit. The current program represents a 40% increase on its predecessor (TEA 21) with a substantial expansion over time. It appears that while the 'Bush' administration actively supported urban public transport the Australian 'Howard' government has provided no equivalent support.

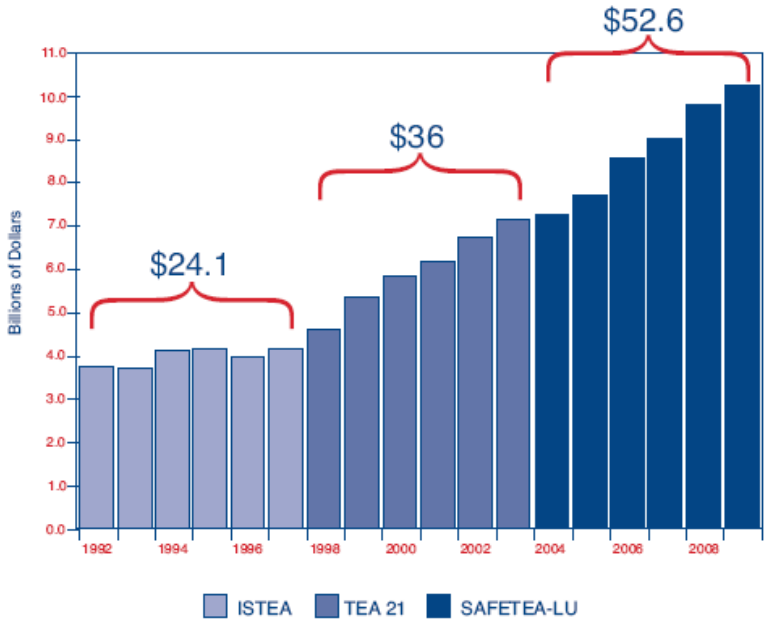

Figure 1 – US Federal Funding Support for Public Transport ($US Billions)
SOURCE: (APTA 2006)

US public transport funding includes support for new start projects of up to 80% of the cost and recurrent operating support of up to 50%. In practice actual Federal support averages around 40% for infrastructure development (FY 2003) and around 6% for recurrent funding (APTA, 2006). Funding allocations for the 2006 financial year (FTA 2006) included:

- $US1.3B to 60 areas for modernisations of fixed guideway systems (usually rail)

- $US 1.5B for 65 new start projects (mainly heavy and light rail systems)
- $US 831M on over 1,400 bus/Bus facilities projects
- $US 17.6M on assistance to 16 transit authorities to develop cleaner fuel vehicles (usually buses)

This level of US Federal funding commitment is clearly somewhat of a contrast to the Australian approach. The source of the funding also has elements of sustainability not apparent in Australia. US Federal funding of urban transit involves the direct re-allocation of funding (or hypothecation) between roads and transit. Much of the funding comes from the Mass Transit Account which is sourced from fuel tax on gasoline. Currently 15.5% of gasoline tax goes directly to the Mass Transit Account. This account totals $5.2B in 2006 (FTA 2006). This approach like congestion charging is generating funding from the problem (car travel) to fund a solution (public transport).

While the lack of Australian Federal interest in urban public transport is clear unfortunately another major concern is the active bias of Federal involvement towards roads. This has acted to damage public transport. Urban road projects which compete with urban public transport for patronage have long received a major share of support from Federal Government (see earlier). In effect the Federal Government has been funding and promoting the problem; car dependence and largely ignoring the solution; public transport.

This viewpoint is supported by other areas of purported 'bias' in Australian Federal policy. The handling of fringe benefits tax is one example. This Federal policy provides tax advantages for companies and employees who use cars. It acts to encourage greater travel by car by providing greater tax incentives for those who travel further. Again this was criticised by the House of Representatives 'Sustainable Cities' Inquiry (2005). However the inquiries recommendation that tax advantages for car use might be extended to those who purchase public transport tickets has still to be taken up.

Knowledge Management Barriers

There is also a significant structural barrier for Australian public transport which is not widely understood. It concerns how knowledge about planning and management of Australian public transport is limited by a lack of Federal Government involvement (Currie 2004b). Because planning and management is State based, there is a tendency for localised planning with a lack of cross border cooperation and sharing of knowledge. In addition all jurisdictions are 'politically sensitive' about the release of knowledge, hence much of the planning reports undertaken (mainly by consultants) is rarely published or shared. These weaknesses in how knowledge is shared and how it is developed have created a number of problems in planning Australian public transport:

- Research Duplication – Since knowledge of research activities remains within the states and territories, it follows that research projects are often undertaken in the same area by different jurisdictions. This is a most unfortunate outcome since it is wasteful of resources in a resource restricted industry.
- The Limiting of Research Benefits – Another implication is that authorities which fund useful research do not permit other jurisdictions to share the benefits of that research. Again a most unfortunate outcome.
- An Emphasis on Re-Active Rather Than Pro-Active Research – Most current research is undertaken by Government and/or operators who are also service providers. These agencies are under great day to day pressures to meet tactical operational objectives. It follows that much of the research undertaken by these agencies is 're-active' to day to day problems rather than being 'pro-active' in seeking longer term strategic solutions or looking 'outside the box' to solve problems.
- Increasing the Learning Curve for New Industry Professionals – Without a database of industry knowledge, new professionals joining and developing within the industry must develop their own intellectual capital. This is wasteful and endangers the quality and scope of the knowledge that is understood.
- Knowledge Retention Risks and High Staff Turnover. A particularly common feature of the many public transport industry reforms over the last few decades has been the high level of staff retirements and redundancies. This is a major concern with experienced staff. Without a coordinated program of knowledge capture and sharing there is a real danger that industry

knowledge is lost forever. This is a concern particularly relevant to a society with an aging population profile.

- A Barrier to Meeting Industry Potential – By not identifying, capturing and sharing industry knowledge we are not making the most of what the industry can achieve.

While this problem affects Australian public transport it does not affect the Australian roads sector. Road authorities have solved this problem through the development of the Austroads national group which is supported by the Federal Government. No such body exists for public transport which is again disadvantaged compared to the roads sector. There is a clear role for the Federal Government to address this issue.

Yet again this problem does not surface in our comparable overseas partners. Europe, like the United States is encouraging an active development and sharing of knowledge about managing and planning public transport systems on a national and trans-national scale. The "Transport Research Knowledge Centre" is operated by the European Community and provides the results and final reports of over 400 European and national projects in sustainable transport. Public Transport has been a major part of these research programs. FP7, which is the new 7 year EU research program starting in 2007 is set to double European research funding from the previous program. Transport is again set to be a big part of this. However in Australia transport is very much a minor player in funding programs supported by the Australian Research Council (there is no designated transport theme within any ARC program and funding of transport related projects are rare).

The US approach also contrasts from Australia in the way that knowledge about public transport systems is developed and shared. SAFETY-LU includes over $US 373M to undertake research in public transport (2004-2009). This includes support for the Transit Cooperative Research Program (TCRP), the worlds largest program aimed at promoting learning and knowledge sharing in public transport. This program employs an inclusive knowledge development approach between industry and the National Academy of Sciences where industry leaders act on panels to monitor research undertaken. Research programs can be nominated by anyone. All reports are freely available on the internet. Up to 2004 this program has produced some 166 project reports on best practice approaches to planning and managing public transport systems and some 60 industry practice synthesis (Currie 2004b).

Best Practices

The terms of reference seek best practice examples of public transport systems for consideration in the inquiry. I wish to add a word of warning about how best practices 'systems' are considered and used in Australian planning. In my view it is highly simplistic to see European, Asian and even South American cities with high quality public transport as best practice examples for Australia. These environments have high density urban development, substantially smaller urban footprint cities with very different car ownership and social/income contexts. Best practice public transport systems for Australia must be able to operate successfully in the Australian context i.e. in low density, with high car ownership and in enormous sprawling cities. Since Australian public transport, by definition of its context, is highly cost and resource constrained, success in Australian public transport means being able to provide quality service in a cost effective way.

With the above concerns in mind I believe the following are important best practices which should be developed into Australian cities:

- <u>Expanding public transport systems with new high quality modes</u>:
  With the substantial rail capacity challenges facing our largest cities I feel it is time for Australia to invest in the highest quality of urban public transport infrastructure 'Metro systems'. These are entirely grade separated (usually underground) railways operated in a simple network with high capacity and frequency. The best systems are highly efficient and often built with bespoke new infrastructure e.g. MTR, Hong Kong and SMRT, Singapore. They avoid many of the compromises needed in incremental development of railways using existing/historical rail infrastructure and operations. The costs of Metro systems are very high, however they can have a transformational impact on central cities. There is also evidence that they can have significant impacts on encouraging higher density employment in central cities and that this can have strong economic efficiency impacts through

agglomeration economies on business particularly in the service sectors typical of Australian cities (Graham 2006; Gwee et al. 2008).

There also much evidence that high quality light rail systems can act to encourage higher density urban development patterns and provide quality service (Steer Davis and Gleave 2005). Australian cities will struggle to find urban densities and operating patterns which justify the high investments needed for light rail however there is a strong passenger and public preference for systems of this design (Currie 2005). There are also important design challenges in how these systems are fitted into the existing public transport networks (Currie 2006c) however if these issues can be addressed successfully it is easy to see a role for an intermediate mode between rail and bus in Australian cities. Much evidence now shows that it is important that these modes operate in their own right of way away from the problems of congested traffic (Currie and Shalaby 2007).

One of the newest and most exciting prospects for applying best practices in the Australian context is what is termed Bus Rapid Transit. This is the design of bus based systems to provide high quality rail like service features at low to modest cost (Levinson et al. 2003). Australian cities are uniquely suited to adopting infrastructure of this type since these systems can be cost effective in lower density circumstances(Fleming et al. 2001). Progress to date in this field has been good (Currie 2006b) and in general Australian cities such as the Brisbane Busway network are now seen by overseas agencies as world best practice examples of what can be achieved in this field (Levinson et al. 2003).

- Investing in Social Transit
  As discussed earlier, Australia has some unique needs to address issues of social disadvantage associated with transport on the urban fringe of cities and in rural settlements. A program of development of new bus services operated at minimum 'social safety net' service levels have been adopted in Victoria as a means of addressing these issues. Termed 'social transit' (Betts 2007) there is evidence that these approaches have proven successful in reducing car dependence and in increasing the mobility of disadvantaged groups (Bell et al. 2006). However few other Australian jurisdictions are following this path despite the clear case for similar approaches in other Australian urban contexts (Travers Morgan 1992; Currie 2004a; Hurni 2007).

- Integration
  The principles of integration of public transport systems are now well understood (May et al. 2006) and the benefits for transport systems in achieving fare integration, service integration, planning integration and even integration of infrastructure have been demonstrated (Streeting and Barlow 2007). However fare integration remains a major gap in Sydney and all Australian cities struggle to some extent with coordination of timetables and planning between services (e.g. bus and rail). To some extent service integration problems are the result of the general lack of quality service levels in Australia. Nevertheless there appears adequate opportunity to improve public transport through improving integration.

- The Importance of Simple Quality Networks
  Much evidence now supports the view that higher ridership can be achieved in public transport systems through the operation of frequency and simple network structures (Nielsen et al. 2005). Toronto Canada is often cited as a system ith high frequency public transport operated at long service spans (hours of the day). Achieving simple high quality networks should be a major aim of Australian public transport.

- On Road Public Transport Priority
  Most public transport in Australia is operated in mixed traffic and is hence relatively slow, unreliable and expensive to operate. Providing traffic priority to on road public transport makes financial, social, environmental and economic sense (Currie et al. 2006). However there is evidence that Australian cities are relatively slow in adopting and implementing priority systems. For example active traffic signal priority (TSP) systems are now seen as a world best practice means of integrating new technologies with the desire to more efficiently move people around cities using public transport(Smith et al. 2005). However Australia has

been lagging behind in developing and implementing TSP. A review in 2006 (Currie 2006a) suggested the causes were:

- That technical knowledge of how systems work has been difficult to retain. Documentation of knowledge has been limited. There is a lack of critical evaluative assessment. Reporting has focussed on selling competing systems rather than objectively assessing or reporting experiences.
- The fragmented approach followed by different states increases the learning problem. There is a lack of a coordinated shared approach to this technical challenge.
- Some comments by system developers indicated frustration with the slow pace of progress in TSP applications. A continuous dynamic of the organisations developing these systems is the conflicting ideologies of the traffic engineers vs the public transport planners. There has been some suggestion that TSP has shown little benefit for much effort. Some bus planners have suggested that bus lanes are preferable since it is a simple, obvious manifestation of the priority principle that always works and is a very public promotion and marketing for public transport.

In general there is much potential for improvement in TSP in all states. Melbourne, the largest system is actively developing improved systems including GPS tracking and conditional priority. Sydney has an aggressive roll out planned for PTIPS. However in general all Australian cities are still only talking about developing systems, actual progress is rare to find.

Overall providing priority for on road public transport provides important economic, social and environmental benefits but progress in this area has been modest. In general Australian road authorities have been general supportive of programs to provide priority but have shown a reluctance to be more progressive in their implementation.

CLOSING COMMENTS

To summarise I believe there are strong rationales for Australia to substantially develop our public transport infrastructure for economic, social and environmental reasons. In general Australia doesn't have much public transport and this is a major barrier to national progress. The Federal Government should take on a new role in funding and coordinating public transport systems in the same way that all other developed countries do. It should attempt to find a more balanced approach to how it funds and supports urban transport and move away from its bias to road funding and development. In short it should seek to support sustainable solutions and not support the problem of car dependence.

There is a real lack of open and defendable knowledge about Australian public transport and the Federal government can play a major role in opening up and sharing knowledge between jurisdictions. US and European agencies for example mandate the regular reporting as a condition of Federal/central funding. Yet again Australia lags behind Federal practices with all other developed countries in this area.

I hope this information has been of value and remain happy to assist the Inquiry further in its work.

Yours sincerely

Professor Graham Currie

Chair in Public Transport
INSTITUTE OF TRANSPORT STUDIES

P.S. I am happy for any of my views presented to be made public as needed.

REFERENCES

APTA (2005). 'Safe, Accountable, Flexible, Efficient Equity Act – A legacy for Users – A Guide to Transit-Related Provisions'. . A. P. T. Association.

APTA (2006). 'APTA Primer on Transit Funding – The Safe, Accountable, Flexible, Efficient Equity Act – A legacy for Users and Other Related Laws FY 2004 Through FY 2009'. . A. P. T. Association.

Bell, D., G. Currie, J. Stanley and M. Fletcher (2006). 'Impacts of New Bus Services in Outer Suburban Melbourne - Final Report' for Bus Association of Victoria, Multi-Modal Transport Solutions in association with Monash University and Axiom consultants.

Betts, J. (2007). Transport and social disadvantage in Victoria: A government perspective. No way to go : Transport and social disadvantage in Australian communities. G. Currie, J. Stanley and J. Stanley, Monash University ePress.

Black, A. (1995). Urban Mass Transportation Planning

Browning, C. and J. Sims (2007). Ageing without driving: Keeping older people connected. No way to go: Transport and social disadvantage in Australian communities. G. Currie, J. Stanley and J. Stanley, Monash University ePress**:** pp 6.1-6.10.

BTRE (Bureau of Transport and Regional Economics) (2007). Estimating urban traffic and congestion cost trends for Australian cities - working paper 71. Canberra, Department of Transport and Regional Services.

Cheal, C. (2003). Transit Rich or Transit Poor: Is Public transport policy in Melbourne exacerbating social disadvantage? , Faculty of Architecture Building and Planning, Melbourne University.

Currie, G. (2003). "Melbourne Metropolitan Bus Plan – An Overview of Key Findings". Bus Industry Confederation National Conference, . Queenstown New Zealand.

Currie, G. (2004a). "Gap Analysis of Public Transport Needs: Measuring spatial distribution of public transport needs and identifying gaps in the quality of public transport provision." Transportation Research Record **1895**: 137-146.

Currie, G. (2004b). The Knowledge Management Gap in Australian Public Transport, Institute of Transport Studies, Monash University.

Currie, G. (2005). "The Demand Performance of Bus Rapid Transit." Journal of Public Transportation **8**(No 1): 41-55.

Currie, G. (2006a). Assessing Australian Transit Signal Priority Against World Best Practice. Australian Road Research Board National Conference. Canberra, Australia, ARRB.

Currie, G. (2006b). "Bus Rapid Transit in Australasia: Performance, Lessons Learned and Futures." Journal of Public Transportation **9**(3): 1-22.

Currie, G. (2006c). Research Perspectives on Light Rail for Sydney. Sydney, Australia, Institute of Transport and Logistics Studies, University of Sydney 07-03-2006.

Currie, G. (2006d). Strategic Planning for Australian Urban Passenger Rail. AusRail 2006, Brisbane, Queensland.

Currie, G. (2006e). 'Three 'Tear' Government Involvement in Australian Public Transport – Failures and Opportunities' AITPM National Conference August 2006, Melbourne, Australia, Australian Institute of Transport Planning and Management.

Currie, G. (2007). Young Australians: No way to go. No way to go: Transport and social disadvantage in Australian communities. S. Currie G, J Stanley, J, Monash University ePress**:** 8.1-8.14.

Currie, G., F. Gammie, G. Waingold, D. Paterson and D. Vandersar (2005). Rural and Regional Young People and Transport National Youth Affairs Research Program, Booz Allen Hamilton.

Currie, G., M. Sarvi and B. Young (2006). "A New Approach to Evaluating On-Road Public Transport Priority Projects: Balancing the Demand for Limited Road Space." Transportation **published on line 15th Nov 2006 - DOI 10.1007/s11116-006-9107-3**.

Currie, G. and Z. Senbergs (2007a). Exploring Forced Car Ownership in Metropolitan Melbourne. Australasian Transport Research Forum. Melbourne Australia.

Currie, G. and Z. Senbergs (2007b). Identifying Spatial Gaps in Public Transport Provision for Socially Disadvantaged Australians - The Melbourne 'Needs Gap' Study. Australasian Transport Research Forum. Melbourne, Australia.

Currie, G. and A. Shalaby (2007). "Success and Challenges in Modernising Streetcar Systems – Experience in Melbourne and Toronto." Transportation Research Record Journal of the Transportation Research Board Washington DC **No 2006**: 31-39

Currie, G. and P. Smith (2006). "Innovative Design for Safe and Accessible Light Rail or Tram Stops Suitable for Streetcar-Style Conditions." Transportation Research Record **No. 1955**: 37-46.

Currie, G., J. Stanley and J. Stanley, Eds. (2007). No Way to Go - Transport and Social Disadvantage in Australian Communities. Melbourne, Australia, Monash Univesity ePress.www.epress.monash.edu/nwtg

Edwards, R. (2007). "Public Transit, Obesity, and Medical Costs: Assessing the Magnitudes." Preventive Medicine.

Fleming, D., M. Faber, G. Pund and P. Turner (2001). Public Transport Solutions for Low Density Cities: The Australian Experience. UITP 54th World Congress.

FTA (2006). 'FTA Fiscal Year 2006 Apportionments and Allocations'. Washington DC, Fecderal Transit Administration, USA.

Graham, D. (2006). Wider economic benefits of transport improvments; link between agglomeration and productivity (Stage 2 Report). for Department for Transport, UK. I. C. L. Centre for Transport Studies. London.

Gwee, E., G. Currie and J. Stanley (2008). Evaluating Urtban Railway Development projects - An International Comparison. Australasian Transport Research Forum, Gold Coast, Australia.

Halcrow Fox (1995). 'Research into Pricing and Financing in the development of Urban Transport: Final Report', Report to the European Commission.

Hurni, A. (2006). Transport and social exclusion in Western Sydney, University of Western Sydney and Western Sydney Community Forum.

Hurni, A. (2007). Marginalised groups in Western Sydney: The experience of sole parnets and unemployed young people. No way to go : Transport and social disadvantage in Australian communities. G. Currie, J. Stanley and J. Stanley, Monash University ePress.

Levinson, H., s. Zimmerman, J. Clinger, S. Rutherford, S. RL, J. Cracknell and R. Soberman (2003). Bus Rapid Transit. TCRP Report 90. T. C. R. Program, Transportation Research Board, Washington DC.

May, A., C. Kelly and S. Shepherd (2006). "The Principles of integration in urban transport strategies' " Transport Policy 13 (2006) 319-327.

Newman, P. and J. Kenworthy (1999). Sustainability and Cities: Overcoming Automobile Dependence, Island Press

Nielsen, G., J. Nelson, C. Mulley, G. Tenger, G. Lind and T. Lange (2005). Public transport - Planning the Networks.http://www.hitrans.org/ir/public/openIndex/view/list_slideshow.html?ARTICLE_ID=1043161427217 (date accessed 20-04-2006)

Smith, H. R., B. Hemily and Miomir Ivanovic Gannet Flemming Inc (2005). Transit Signal Priority (TSP) : A Planning and Implementation Handbook, Intelligent Transportation Society of America

Steer Davis and Gleave (2005). 'What Light Rail Can Do for Cities – A Review of Evidence' Final Report for Passenger Transport Executive Group Uk Passenger Transport Executive Group Uk**:** Available for free download at:
www.pteg.net/.../F37F7FEB-4756-4705-8185-EEEA79F6287E/0/WhatLightRailCanDoforCitiesAppendices_0105.PDF (Last Accessed 06-06).

Streeting, M. and R. Barlow (2007). Understanding Key Drivers of Public Transport Patronage Growth -

Recent South East Queensland Experience. 10th International Conference on Competition and Ownership in Land Passenger Transport (Thredbo 10). hamilton Island, Queensland.

Travers Morgan (1992). Strategies to overcome transport disadvantage. Canberra, Department of the Prime Minister and Cabinet.

UITP (2006). 'UITP (Australia/New Zealand) Members' Daily News Summary' The International Association of Public Transport Australia-New Zealand (UITPANZ).

Villanueva, K., B. Giles-Corti and G. McCormack (2008). Steps for transport: Do public transport users perform more steps than car users? Perth Western Australia, 1School Of Population Health, The University Of Western Australia.