

# **Towards More Sustainable Cities: Building a Public Transport Culture**

**Submission by the Bus Industry Confederation to the  
House of Representatives Standing Committee on  
Environment and Heritage's Inquiry into  
Sustainable Cities 2025.**

**Canberra, October, 2003.**

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# Executive Summary

## Key Findings

BIC contends that Australia's cities face major sustainability issues in terms of personal transport systems, particularly related to:

- the economic significance our cities and the importance of ensuring that high quality transport systems are provided to facilitate future economic growth in these cities, particularly with respect to reducing the adverse impacts of congestion, balanced with meeting environmental and social needs;
- ensuring that a decent basic level of access is available to all Australians, irrespective of where they live; and,
- dealing with the continuing problems associated with road trauma.

These sustainability issues all derive primarily from our high dependence on the private car.

The submission argues that improving sustainability requires three key policy levers to be used:

- improving service levels by public transport and also encouraging travel by other low impact modes such as walking and cycling, to increase use of these modes relative to the car, particularly in middle and outer suburban areas. Bus service levels should be the primary area for public transport service improvement, because of the orientation of bus services to middle and outer urban areas;
- improving the integration of land use and transport to reduce the need for travel and to facilitate greater ease of travel by low impact modes (public transport, walking and cycling); and,
- reforming road pricing, to make road users more accountable for the costs of their travel decisions, while providing a flow of funds to assist implementation of transport sustainability initiatives. Parking levies on spaces in congested areas are a handy starting point towards improved pricing.

Our submission suggests that the Victorian Government's target of 20% of motorized trips being made by public transport by 2020 is an appropriate target for Australian cities and that this outcome will only be achieved if all three policy levers are pointing in this direction. The benefits of achieving this target, however, are potentially huge, particularly given the scale of, and growth in, congestion costs.

The submission argues for a major change in the nature of Federal-State land transport relationships, to assist in delivery of the desired change in policy and program direction. Cities have been the focus of the submission but the key points in favour of a more integrated approach apply more broadly than just our cities. The submission supports major change because:

- all levels of government have an interest in better sustainability outcomes in our cities;
- the costs of not improving sustainability are so high; and,
- progress under current arrangements has been inadequate.

The submission proposes an integrated approach to policy and program priority determination on land use and transport development. It proposes, in particular, a more integrated approach to transport development, pricing and funding, involving all levels of government and with involvement of other key stakeholders, including the broader community, working through central State-based agencies set up for the purpose. Pricing, investment and funding processes should be integrated through this mechanism, with the Federal Government being specific about its outcome objectives and using funding leverage as a means of ensuring that these objectives are incorporated as criteria to be met by the State-based land use and transport planning and decision-making process. Federal leadership is required to drive this change process, which will rely on effective partnerships across all levels of government, business and community stakeholders. BIC believes this process is needed to allow the Commonwealth and States to articulate their respective roles and responsibilities for the provision of public passenger transport services rather than hiding behind a Commonwealth/ State Government 'Stand off'.

A new Inter-Governmental Agreement on Land Transport should be part of the process of change. The success of the National Road Transport Commission process has shown that such an approach can achieve support across the governmental and other stakeholder spectrum and engage the players in seeking solutions in line with the objectives of the process. Sustainability outcomes should figure very prominently in the objectives of the Agreement.

BIC believes that the Federal Government should kick-start this process of change by establishing a Sustainable Infrastructure Fund, to accelerate delivery of major projects that will enhance the sustainability of our cities (and regions). This fund would form part of Auslink or be a separate fund established with clear Sustainable Transport outcomes as its objective.

The National structures that have been established currently do not address passenger transport issues and mobility issues and have not have not been a priority for Canberra and left aside, largely as State responsibilities.

The challenges that face cities in the future, access to employment, basic and essential services and an ageing population mean that a clear National Institutional framework within which public passenger transport and personal mobility issues are addressed in a co-ordinated and strategic manner is required.

To this end, the BIC is proposing a comprehensive review of current Federal Departmental and portfolio arrangements, and National Institutional arrangements as they relate to passenger transport.

Currently within the transport sector there exists at the National level, several key bodies involved in National Transport reform, policy and strategy.

The identification and delineation of roles and responsibilities in regard sustainable cities/ sustainable transport policy and programs within the existing national framework is required and is discussed later in this paper.

The BIC sees a similar need for a review of Commonwealth Departmental and portfolio policy and advisory arrangements in regard involvement in Passenger Transport initiatives. This is outlined in greater depth later in the document.

## **Some Particular Conclusions**

**BIC concludes that the current scale of road congestion costs in Australian cities and the growth in the size of these costs indicates that current city land transport systems are not sustainable in economic terms. Urgent policy attention should be devoted to ways of reducing these huge economic costs. Long term, congestion pricing is likely to be a central part of the solution to congestion costs, as one element in integrated urban transport and land use development strategies.**

**While urban traffic matters have traditionally been seen as matters for the State Government in Australia, the national economic need for dynamic urban economies, set alongside the high costs of congestion, air pollution and noise, means that these are now clearly matters of national economic concern. The contribution that urban public transport can make to reducing these problems, as one part of integrated urban transport/land use systems, means that urban public transport should become part of the scope of national land transport policy and programs.**

**BIC contends that all Australians have the right to basic transport choices and national land transport policy should ensure that this is treated on an equitable basis across our cities and regional areas. Improved public transport systems are increasingly being recognised as one element in improving such access options, with improved bus service levels in outer suburban areas being particularly important.**

**In planning for reduced road trauma in our cities, BIC believes that increased emphasis should be placed on the gains that are achievable from a greater role for public transport.**

**BIC concludes that substantially improved service frequency and coverage, enhanced service reliability and better marketing of public transport services will lead to a significant increase in public transport use in Australian cities.**

**BIC believes that, due to the extensive and spread out nature of our metropolitan areas, substantial improvement in the quality and quantity of bus services is a cost-effective public transport option for improving the sustainability of travel options.**

**BIC concludes that the availability of a sustainable funding source for improved public transport services is critical to achievement of more sustainable personal transport systems in Australian cities.**

**BIC concludes that increasing the relative compactness of Australian cities and increasing the relative degree of concentration of activities will lead to improved sustainability, by reducing the need for travel and encouraging a greater reliance on public transport, walking and cycling for travel. Integration of land use and transport planning and development is essential to delivering this outcome. Careful attention to urban design can also encourage more sustainable means of travel. BIC concludes that approval of new subdivision, activity centre and shopping centre development plans should be dependent on adequate provision being made for public transport operation. State Planning Frameworks should mandate this requirement.**

**BIC concludes that the Australian Transport Council should direct the National Transport Commission to review all of Australia's existing transport taxes and charges and to make recommendations on changes that are needed to achieve a pricing framework that internalizes the external costs of road use.**

**BIC supports levies on parking spaces in congested areas as a useful step towards improved road transport pricing.**

**BIC believes that development of more sustainable personal transport systems for our cities must be a key focus of the implementation of a more integrated national transport system. The States should form the hub of the approach, because they have the primary responsibilities for service delivery on land use and transport. This means that a State Transport (Pricing and Funding Allocation) Agency (the Central Agency) should be established as its cornerstone, in each state. Other levels of government and the broader community also need to be involved, however, because they have important interests in the economic, social and environmental outcomes of the land use/transport process.**

## **Proposed Actions by the Commonwealth**

**BIC proposes that the Federal Government kick-start this process of change by establishing a Sustainable Infrastructure Fund within Auslink, or as an integral part of any transport infrastructure funding arrangements put in place to support investment in major infrastructure improvements that have a strong sustainability rationale (e.g. improved public transport systems). States seeking projects for funding support from this Fund should be required to meet certain conditions specified by the Commonwealth, namely that they: (1) comply with any specific sustainability objectives nominated by the Federal Government in proposing projects for funding support from the Infrastructure Fund; (2) demonstrate that any transport projects for which they are seeking funding support have emerged from an integrated land use/transport planning and development process; (3) are prepared to match dollar for dollar the Federal funds being sought for any project (without offsetting cuts in funding elsewhere); and (4) sign off on a New Inter-Governmental Agreement on Land Transport within twelve months of the announcement of the Infrastructure Fund.**

**BIC proposes that existing National Institutional Arrangements and existing Federal Departmental and portfolio arrangements be reviewed and made relevant to the development of a National Sustainable Cities policy**

**BIC proposes that the Commonwealth should initiate the development of a New Inter-Governmental Agreement on Land Transport, whose focus should be on the establishment of more sustainable land transport systems, utilising the three key policy/program levers of improved public transport services, better land use/transport integration and reformed land transport pricing systems.**

**BIC believes the Federal Government should provide a positive tax environment for public passenger services, providers and passengers.**

**BIC proposes that fuel taxation should be restructured by the Commonwealth Government, to better reflect the external costs of road use, including the environmental damage associated with use of different fuels. Emission control standards should continue to be tightened, in line with international best practice, and fuel quality should continue to be improved.**

**BIC believes the Federal Government should encourage the development of Bus Rapid Transit system initiatives in Australia, since they represent a cost effective means of addressing the urban transport problems of metropolitan Australia.**

**BIC proposes the Federal Government make all road funding programs such as Roads to Recovery conditional or inclusive of the requirement to include public passenger transport planning and infrastructure provision.**



**BIC proposes that there should be a regulatory requirement, implemented as part of a National Environment Protection Measure for air quality, that all vehicles undergo periodic testing of their emission performance, to ensure compliance. To help facilitate implementation of this program, the Federal Government should assist with funding of a core set of emissions testing facilities throughout the country, starting in the major capital cities where air quality concerns are greatest.**

## 1. Scope

The House of Representatives Standing Committee on Environment and Heritage is undertaking an inquiry into *Sustainable Cities 2025*. Background material released by the Committee indicates that

*The purpose of the inquiry is not to set specific actions for particular areas, but to provide a “national map” of issues and approaches. (SCEH Discussion Paper p. 2).*

The Committee’s Discussion Paper (p.4) suggests seven “visionary objectives for the Australian sustainable city”. One of the seven nominated objectives relates to development of sustainable transport networks. This submission from the Bus Industry Confederation (BIC) proposes ways in which the sustainability of land transport systems in Australian cities can be improved, with emphasis on person movement.

BIC is the national body that represents the interests of Australia’s bus and coach operators, including suppliers and associated businesses. Its members employ an estimated 30,000 people in Australia and carry over 1.3 billion passengers annually.

Chapter 2 of the submission summarises the findings of research undertaken by BIC on the sustainability of Australia’s current land transport systems, focusing on aspects relevant to Australia’s cities. The approach considers economic, social and environmental aspects of sustainability. The conclusion is that there are some serious sustainability concerns with Australia’s current city passenger transport systems and measures are needed to reduce our reliance on the private car.

Chapter 3 discusses steps that are needed to improve the sustainability of Australian city transport systems, illustrating this with supporting examples. It focuses on three levers for improving sustainability: improved public transport service quality; transport/land use integration; and, road pricing reform. The greatest improvements in sustainability will come from using all three approaches in an integrated manner. The recognition that all three approaches can only be delivered under a trusting partnership between all stakeholders is essential for a sustainable outcome.

Chapter 4 suggests roles for key stakeholder groups in delivering more sustainable land transport systems for our cities, with particular attention on the role of the Commonwealth. Chapter 5 summarises the major conclusions of the submission.

## 2. The Sustainability of Australia's City Transport Systems

### 2.1 Sustainability Criteria

The 1987 report of the World Commission on Environment and Development (the "Brundtland Commission") established the concept of sustainable development as referring to development that meets the needs of the present generation without compromising the chances of future generations to meet their needs.

In line with this approach, BIC's *National Policy Statement 2001* sees sustainable land transport systems in economic, social and environmental terms. Relating this to the interests of the present inquiry, sustainability criteria might be expressed as follows for Australia's city passenger transport systems:

**economic sustainability** = ensure that personal travel needs are met efficiently and that personal travel choices are supportive of a dynamic city economy;

**social sustainability** = ensure that a reasonable basic level of access is available to all residents and visitors, irrespective of personal circumstance, and that this is provided with an acceptable level of safety;

**environmental sustainability** = manage emissions from transport such that they are consistent with meeting national air quality standards and Kyoto targets for greenhouse gas emissions.

BIC has examined Australia's city passenger transport systems from the perspective of these criteria.

### 2.2 Externalities

The concept of **externalities** is a convenient short hand indicator for many economic, environmental and safety aspects of sustainability. Externalities typically arise when the well-being of an individual or group is affected by the activities of one or more others who ignore this "spillover" effect when taking their decisions.

On the basis of a large number of studies around the world, the key externalities associated with transport are the use-related **external costs** of road damage, congestion, accidents and environmental damage, especially air pollution, noise and climate change (greenhouse gas emissions) and the major origin of these costs is road use. The transport disadvantage experienced by those without ready access to a private car in a car-dependent society can also be thought of as an external cost of a car dependent personal transport system.

Economic theory recognises that, in a market economy, the existence of external costs (and benefits) creates a situation where the market decisions of individual consumers and

producers no longer add up to an outcome that provides maximum benefits to society from resource use. Market pricing on the basis of social costs, which include external costs, is a prerequisite for market systems to produce efficient resource allocation outcomes. Pricing measures are attracting increased interest as a means of bringing external costs to account, particularly in Europe.

Pricing approaches generally seek to internalise external costs by ensuring that each transport user faces the full social (i.e. private, environmental and other) costs associated with each individual trip and therefore has an incentive to reduce the underlying problem that is causing the external costs. This requires a means of identifying and measuring the impact of the costs in question in monetary terms. This is possible, to a varying degree, for some of the costs of transport in our cities, as illustrated in BIC (2001).

## **2.3 Economic Sustainability**

### **2.3.1 Congestion Costs**

The most obvious indicator of economically unsustainable land transport systems in our cities is the level of traffic congestion. The Bureau of Transport Economics (1996) has estimated that road traffic congestion cost Australia \$12.8 billion in 1995, with this cost expected to reach \$29.7 billion by 2015 (by interpolation, annual congestion costs are probably of the order of \$18-19 billion today). Analysis by BIC, for its submission to the Commonwealth Fuel Taxation Inquiry, shows that congestion (costed at \$12.8 billion) is by far the largest “external cost” of road use in Australia (BIC, 2001).

Road traffic congestion costs essentially arise in our cities. Research undertaken by Stanley and Ogden (1993), in an unpublished report for VicRoads, suggests that about 60% of these costs will be incurred by the business sector, including the freight sector and business travel by car and light commercial vehicles. This makes traffic congestion a huge drain on the economic performance of our cities and national economy. The Stanley and Ogden work estimated that peak congestion costs in Melbourne were well over \$1.00 per vehicle kilometre (based on 1993 prices).

The Warren Centre for Advanced Engineering (2003a) has pointed out that almost four out of five Sydney residents perceive traffic and transport as serious problems, with road congestion being the number one issue. Almost two-thirds of Sydney residents surveyed by the Centre opted for demand management rather than building more freeways to manage the congestion problem. Demand management introduces the issue of pricing.

Economically efficient pricing of road use would see road users charged for the congestion costs their road use creates for other road users. BTE work has suggested that an economically efficient charge would be about \$1.26 per kilometre travelled in parts of Melbourne’s central area, falling to less than 13c/km only 9 kilometres from the CBD. A peak hour trip from Frankston to the CBD would have incurred congestion charges of about \$5. The BTCE work found that peak congestion charges in Sydney would have

been about 75c/km (i.e. lower than the peak cost per kilometer in Melbourne) but high charges would have applied over a wider inner area than in Melbourne.

London is the first city in the world to specifically implement a congestion charging scheme to reduce road traffic congestion and its associated costs. The London scheme, which came into force on 17 February 2003, involves a £5 daily entry fee to the charge zone between 7am and 6.30pm, Monday to Friday, excluding Public Holidays. The charging zone bounded by the Inner Ring Road (Figure 2.1) is a small area in the city of London<sup>1</sup> in which very few people actually live. The scheme operates with a paper based system using Automatic Number Plate Recognition (ANPR) technology, via cameras located at cordon entry points or in mobile locations throughout the charging area.



**Figure 2.1: London Congestion Charging Zone**

Before its commencement, the charging scheme was predicted to:

- reduce traffic volumes in the heart of the capital by between 10-15% year round (i.e. to school summer holiday levels all year round);
- reduce congestion by 20-30%, with journey times shortened and delivery times made more reliable;

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<sup>1</sup> Charges are made on vehicles entering an area bounded by an Inner Ring Road that runs along Euston Road, Pentonville Road, Commercial Street, Tower Bridge Road, New Kent Road, Kennington Lane, Elephant & Castle, Vauxhall Bridge Road, Park Lane, Edgware Road and Marylebone Road. No charge is made for driving on the Inner Ring Road itself - only the area bounded by it.

- raise £1.3 billion over the first 10 years, for re-investment in all forms of transport in London, including roads, buses, local streets and railways; and,
- pay back set up costs within 18 months of starting.

To be eligible for entry one has to register a vehicle and the number plate becomes the basis of compliance, with the charge debited to an agreed account. There are a range of exemptions and discounts. Over 900,000 individuals have registered for discounts and/or exemptions. Residents of the zone receive a 90 percent discount (i.e. pay 50p). Freight vehicles pay the full daily charge.

What are the major findings to date? Currently there are over 100,000 payments per day made on entry to the zone, including 11,000 fleet vehicles. Before the introduction of the charge, the average speed of all traffic was 13 kph; it is now 17 kph. There has been a 20% reduction in total vehicle trips per day throughout London, with a 16% reduction of traffic in the charging zone. Congestion has decreased by 31%, as measured by travel time. This is due to 150,000 fewer car trips into, out of and through the charging zone. 10-20% of these trips have diverted around the zone with the greater percentage of the balance (50-70%) switching to public transport. This adds approximately 90,000 to 130,000 passenger trips across the charging day to public transport.

The public transport switching translates into a 14% increase in patronage, with bus journey speeds increased by 33%. The growth in motorbike use is also of interest: combined with the increased speed, motorbike use has resulted in greater exposure to the risk of driving faster.

The raising of revenue is the most controversial and unexpected outcome. One of the strong arguments for congestion charging in London was the hypothecation of revenue raised for investments back into transportation, especially public transport. The amount of revenue raised in the first six months is nowhere close to what was projected: the charging scheme has been too successful in discouraging car use! In addition, the administrative costs of the scheme have been much higher than anticipated. 67% of revenue raised has been consumed by costs of administering the scheme. Thus the net revenue is relatively small in terms of any re-investment back to public transport. It must be recognized, however, that the additional patronage using public transport has delivered sizeable increases in funds, through extra fares collected. These funds can be used to improve services, given the new level of pressure on public transport capacity. This is to be encouraged (especially in the longer term), otherwise there will be some defection back to the car.

The use of number plate recognition, while supported as the easiest way of introducing the charging scheme in a setting that has not yet taken on board electronic tolling (as exists widely in Sydney and Melbourne, for example, with full interoperability), has resulted in a range of headaches in administration. There is a growing view (unofficially) that electronic tagging may be the way in the future. Its rejection in London is linked to the absence of electronic tolling in the region and the increased expense in starting from scratch. This may turn out to be a bad decision.

While the London experience has had some problems, it shows that (relatively simple) congestion charging schemes can be effective in reducing congestion and, by implication, in reducing its high costs. Long term, BIC sees congestion charging as a central part of the long term solution to the most serious problems of traffic congestion in our cities.

**BIC concludes that the current scale of road congestion costs in Australian cities and the growth in the size of these costs indicates that current city land transport systems are not sustainable in economic terms. Urgent policy attention should be devoted to ways of reducing these huge economic costs. Long term, congestion pricing is likely to be a central part of the solution to congestion costs, as one element in integrated urban transport and land use development strategies.**

### *2.3.2 Dynamic Urban Economies*

Australia is one of the world's most urbanised countries. Our capital cities alone account for almost two-thirds of the nation's population. These are the areas where the knowledge economy is concentrated, where knowledge-intensive manufacturing industry remains strongly focussed and through which most international and domestic tourism is channelled. These are all economic sectors of above-average growth and growth-potential. National economic growth prospects are thus increasingly tied up with the future prospects of the major urban economies. The Conference Board of Canada reflected similar thinking when it recently said<sup>2</sup>:

*Cities are at the centre of our new economy, the cradle of innovation, and the venue for wealth creation.*

Knowledge-intensive economic activities tend to be footloose by their nature and can locate almost anywhere. Studies into their locational determinants typically indicate quality of life factors as central (e.g. Porter 1990; McKinsey 1994; Ratio Consultants 1995). Urban locations dominate and traffic congestion, air pollution and noise can be significant locational deterrents. As one means of assisting the process of continued national economic growth, therefore, policy should focus on how to reduce the adverse congestion and environmental impacts of urban road use on the dynamism of our metropolitan economies.

**While urban traffic matters have traditionally been seen as matters for the State Government in Australia, the national economic need for dynamic urban economies, set alongside the high costs of congestion, air pollution and noise, means that these are now clearly matters of national economic concern. The contribution that urban public transport can make to reducing these problems, as one part of integrated urban transport/land use systems, means that urban public transport should become part of the scope of national land transport policy and programs.**

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<sup>2</sup> Quoted in Prime Minister's Caucus Taskforce on Urban Issues, Canada's Urban Strategy: A Blueprint for Action, November 2002, p. v.

BIC notes that the US Government reached this conclusion over a decade ago, with the passage of its Intermodal Surface Transportation Efficiency Act (in 1991) and re-affirmed the conclusion with its Transportation Equity Act for the 21<sup>st</sup> Century. The Canadian Government has reached a similar conclusion in the past few years. For example, the 2002 Canadian Governor General's Speech from the Throne referred to the Canadian Federal Government's commitment to supporting safe, efficient and environmentally responsible urban transportation systems (not just road systems) to help reduce traffic congestion and assist trade. The link between healthy urban transport systems, including public transport, and healthy urban economies is a key driving force in both the Canadian and US approaches to national land transport policy. New Zealand's inclusion of public transport programs in the funding ambit of Transfund reflects a similar acceptance of the national interest in improved city public transport systems.

## **2.4 Improving Access**

One of the two major purposes of land transport is to enable people to achieve access to goods, services and to other people. BIC contends that a reasonable basic level of access is a right that applies to all Australians, irrespective of where they live and irrespective of personal circumstance. A key role of our city land transport systems should be to ensure that this basic access right is delivered. The social sustainability of our city transport systems will depend in significant part on how well this goal is achieved.

As noted previously, most Australians now live in the major cities and other large urban areas. Cars are the dominant means of travel in these locations. However, many people living in urban areas do not have ready, or even any, access to cars. For example, young people must often rely on others to meet their travel requirements or else depend on public transport. Secondary school students are the largest customer group for Melbourne urban bus travel. Many people who do have a car available for their personal use can only achieve this position by committing a large proportion of their disposable income to car purchase and use. This is particularly the case on the fringes of Australia's cities, where low density development patterns, low incomes and relatively low house prices have created a situation where high relative proportions of household incomes are typically devoted to transport. The western suburbs of Sydney and outer east of Melbourne are leading examples, where such "transport disadvantage" is widespread. The carer with young child or children in a single car household in these high population growth areas is very restricted in access terms, often having to rely on walking, cycling, friends or public transport with poor operating frequencies and service hours. Similar issues arise in regional Australia.

The desire for cheaper housing and/or space for young children is often an important stimulus to residents locating in outer suburban areas. At the same time, however, lower income levels typically reduce the range of residential location choices available to people who tend to reside in such places. In short, location is not simply a matter of choice.



### 2.4.1 Melbourne

Figure 2.2 sets out indicators of accessibility to employment in Melbourne by car and public transport, for 1996 and 2021 (projected by the Victorian Department of Infrastructure). The accessibility indicator shown is the number of jobs that can be accessed within 40 minutes. Those without access to a private car (the two lower cells in the Figure) are clearly relatively disadvantaged in terms of employment accessibility, as are those living in outer suburban areas.

**Fig. 2.2: Job Accessibility in Melbourne (Source: DOI)**

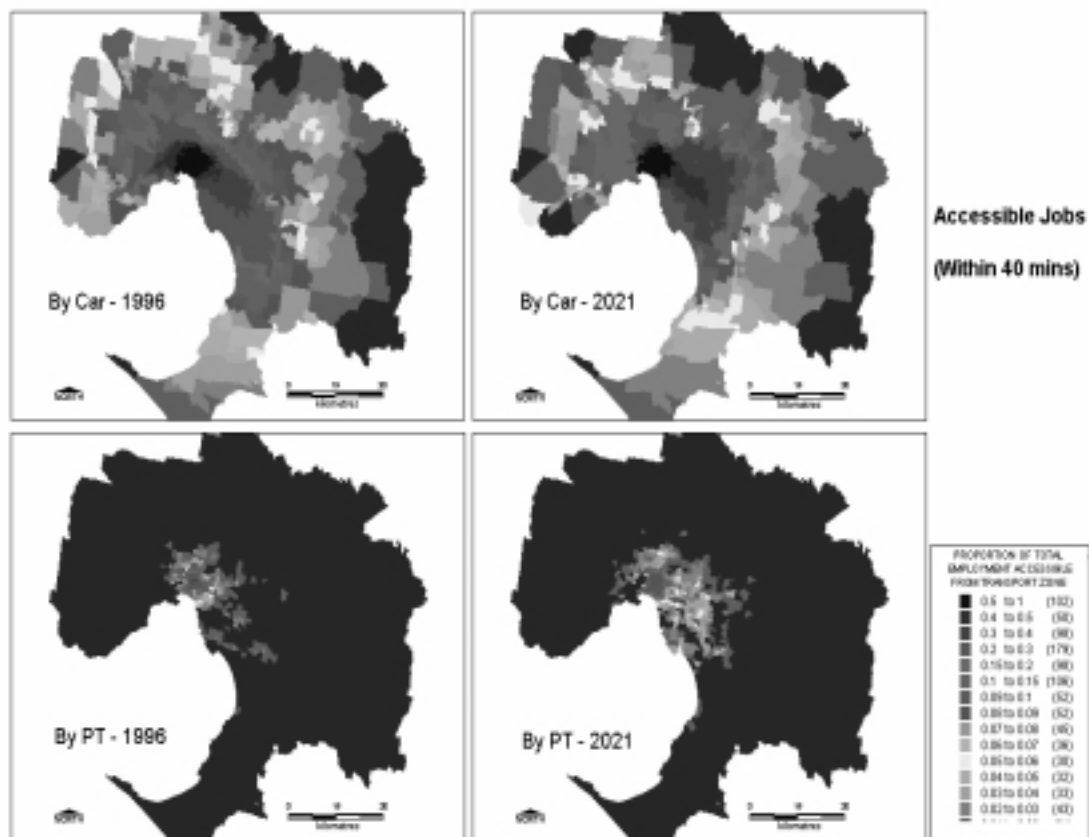


Table 2.1 shows a range of service quality indicators for trains, trams and buses in Melbourne. Some 60% of Melbournians only have bus services (of the available public transport modes) in their immediate area (see Figure 2.3), particularly those living in middle and outer suburbs. Yet service levels by bus are far poorer than comparable service levels by train and tram, the latter mainly benefiting inner and middle urban residents.

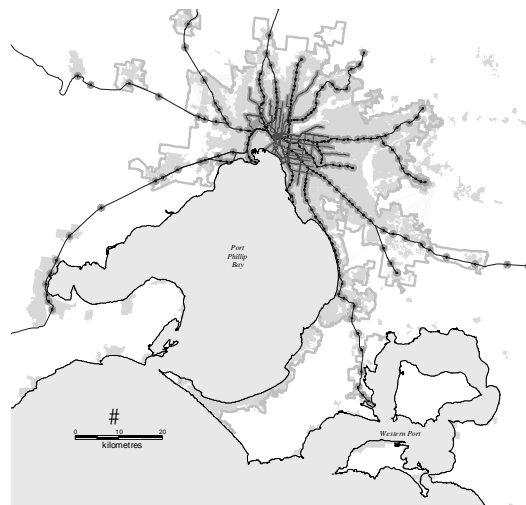
A study for Mornington Peninsula Shire council<sup>3</sup> on the fringe of metropolitan Melbourne showed that per capita public transport subsidies in the fringe suburbs of Melbourne were a third less than those in inner suburban areas. It also showed that the gap between outer and inner area per capita subsidies has doubled over recent years (from a 17% difference in 1996 to a 34% difference in 2000).

**Table 2.1: Melbourne Public Transport Service Levels**

Service Indicator	Trains	Trams	Buses
Average weekday peak headways	15 minutes	7 minutes	40 minutes
Average interpeak headways	20 minutes	12 minutes	50 minutes
Weekday average start time	5.00am	5.00am	6.46am
Weekday average finish time	midnight	midnight	6.53pm
Saturday service availability	100% of routes	100%	74% of routes
Saturday average finish time	midnight	midnight	5.14pm
Sunday service availability	100% of routes	100%	18% of routes

Source: Booz Allan Hamilton, Melbourne Bus Plan, 2002.

**Fig. 2.3: Bus Dependent Areas in Melbourne**



Source: Melbourne Bus Plan

Per capita usage of public transport reflects the lower service standards available in outer suburbs in Melbourne. As one moves from inner to middle to outer suburbs, the use of public transport declines. Per capita usage of public transport in Melbourne is about 110 trips per annum in inner areas, declining to about 80 trips in middle suburbs and 40 or less in outer suburbs.

<sup>3</sup> Booz Allen Hamilton (2001) 'Historical Review of Metropolitan Public Transport Subsidies Between Inner and Outer Areas' for Mornington Peninsula Shire Council May 2001

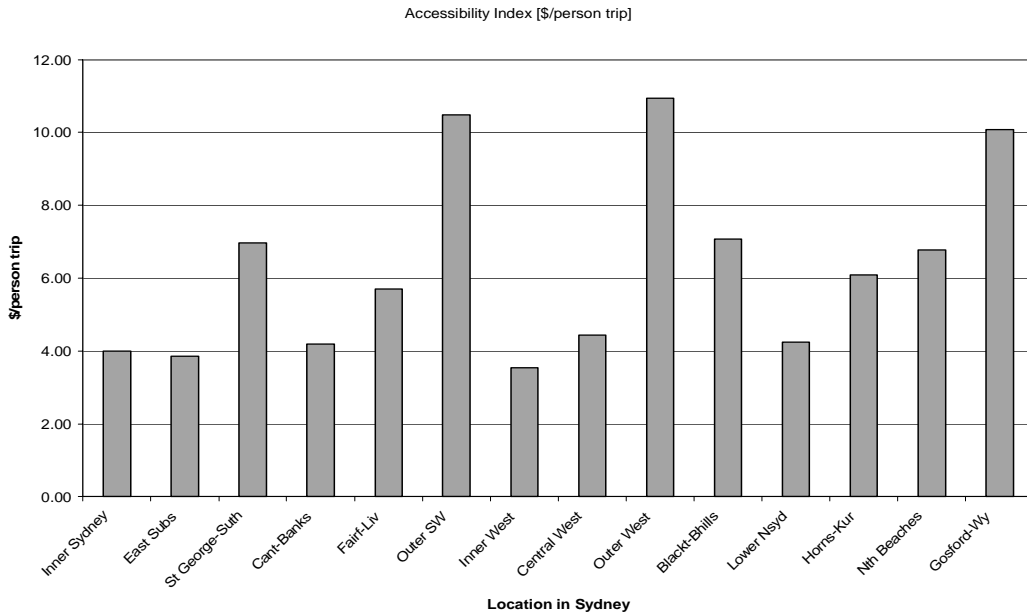
Poor service frequency and coverage by buses, the major mode in the outer suburbs, underpins low usage levels. Improving these service levels in outer areas is central to growing public transport patronage and improving the sustainability of city passenger transport systems, as discussed in Chapter 3.

### **2.4.2 Sydney**

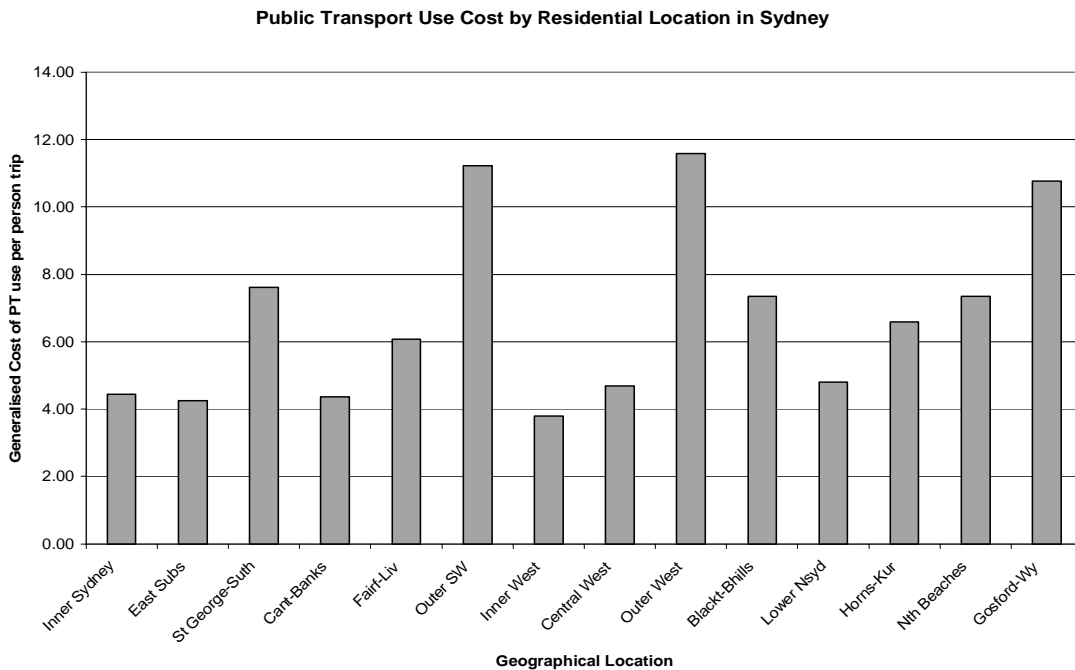
Figure 2.4 illustrates accessibility performance for different parts of Sydney. Sydney is typical of all metropolitan areas in Australia in terms of the relative transport disadvantage of residents living in urban fringe locations. Evidence is available for Sydney from the Institute of Transport Studies (The University of Sydney) to illustrate the higher travel burden imposed on fringe dwellers relative to other parts of Sydney. Such individuals face greater costs of using available public transport modes (bus and train) to access work and non-work activities and also are “forced” to acquire more cars per capita to be able to compensate for the relatively poor provision of public transport services. Key messages are:

1. Transport accessibility per person trip is noticeably worse for residents of the urban fringe (i.e. outer west, outer south west, St George-Sutherland and Gosford-Wyong) than for those living closer to the centre. In dollars terms this equates to approximately \$10 (of generalized cost) per person trip compared to \$4-\$5 for individuals living in other locations in the urban area. Trips by all modes (Figure 2.3) and trips by public transport (Fig. 2.5) are both more costly for outer urban residents of Sydney than for those living more centrally.
2. Individuals with the highest cost of servicing their transport needs are generally from households with relatively lower incomes (up to \$50,000 per annum in \$1998), giving them a substantial and inequitable burden in terms of the share of the household budget devoted to transport (the proportion of their household income spent on transport is several times higher than it is for those not living on the urban fringe).
3. Urban fringe residents travel further to accommodate their activity needs and use cars (with far less choice) more than individuals living closer to the centre of the metropolitan area. The consequence is much higher contributions to greenhouse gas emissions and other pollutants.

**Figure 2.4: Generalised transport accessibility indicators for Sydney**  
(Source: ITS, University of Sydney)



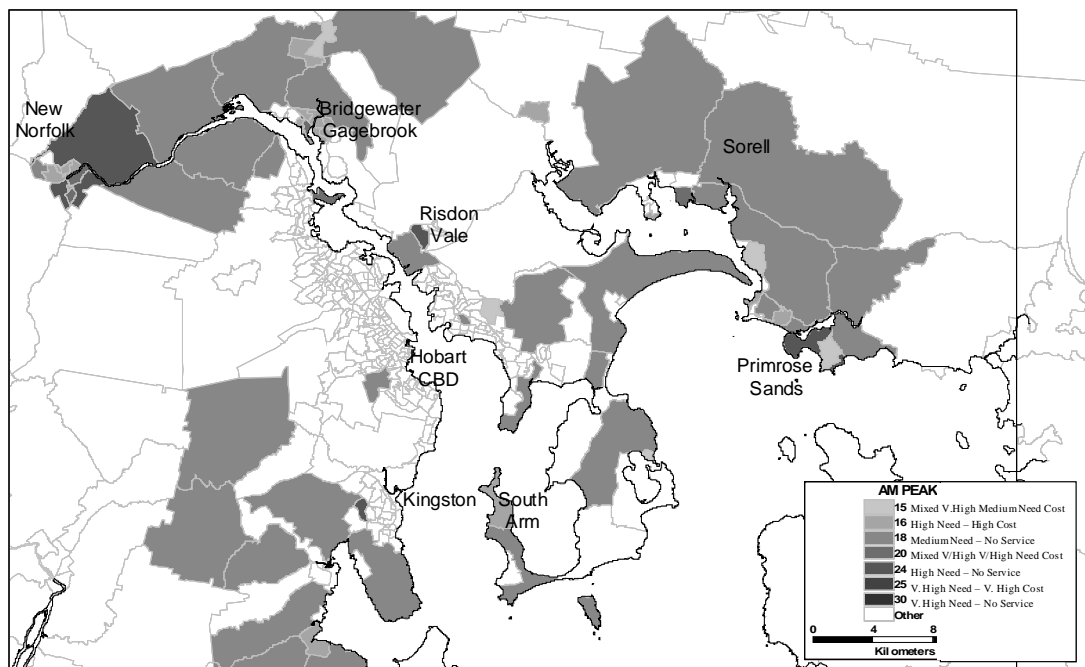
**Fig. 2.5: Public Transport Use Cost by Residential Location in Sydney**  
(Source: ITS, University of Sydney)



### 2.4.3 Hobart

Recent work in Tasmania has also illustrated the gap between the needs of the transport disadvantaged and provision of public transport. Figure 2.6 shows the results of a study of Hobart undertaken by Professor Graham Currie of Monash University<sup>4</sup>. The study found that the highest concentrations and numbers of people who could be described as transport disadvantaged live on the fringe of the metropolitan area in suburbs like New Norfolk. When the quality of public transport provided to these people is measured, a 'Needs Gap' emerges, since either no service or very poor quality services are provided to these people, compared with the rest of Hobart.

**Figure 2.6 : Gap Between Transport Need and Provision of Public Transport – Hobart Tasmania**  
(Biggest Gaps Between Need And Service Have Heavier Shading)



### 2.4.4 Conclusion on Accessibility

These examples illustrate that the levels of accessibility available to people living in Australia's major cities vary substantially, which BIC believes is inequitable. In particular:

<sup>4</sup> Reported in Currie, Enright, Hoey and Paterson (2003) 'Quantitative Approaches to Needs based Assessment of Public Transport Services - The Hobart Needs Gap Analysis', Australasian Transport Research Forum, Wellington NZ October 2003

- those dependent on public transport are at a disadvantage compared to those with a car available in terms of accessibility; and,
- those living in outer suburban areas are at a disadvantage compared to inner and middle urban dwellers. Outer suburban dwellers dependent on public transport are doubly disadvantaged! Bus service improvements are most suited to meeting the latter needs.

Also, state government support provided for public transport services is not evenly spread across the community.

There are important links between the transport disadvantage experienced on the fringes of our cities and the social exclusion this causes residents on the fringe. Recent work by Hine and Mitchell (2003)<sup>5</sup> has illustrated that the gaps between transport provision and those with limited transport choices results in non-participation in employment, education, social and leisure activities. This tends to affect the young, those on low incomes, women, the elderly and the disabled more than other groups in society. It is a significant contributor to poverty in Australia.

BIC contends that differential accessibility reduces the social sustainability of passenger transport systems. This feeds through to reducing the economic and environmental sustainability of these transport systems because it reinforces a relatively high level of car use in areas where public transport accessibility is relatively poor.

Curitiba saw this challenge and designed a system over 30 years that recognised the different needs for mobility throughout the metropolitan area, focussing on flexible (speedy) buses throughout outer suburban areas, linking to fixed route feeders into key corridors (structural axes) for longer distant public transport trips. The experience in Sydney with the M2 cross-regional services to Sydney CBD shows that it can work, provided the appropriate infrastructure is in place (in this instance a high quality dedicated lane on a tollroad).

**BIC contends that all Australians have the right to basic transport choices and national land transport policy should ensure that this is treated on an equitable basis across our cities and regional areas. Improved public transport systems are increasingly being recognised as one element in improving such access options, with improved bus service levels in outer suburban areas being particularly important.**

## 2.5 Road Trauma

During the 1990s, around 1800-2000 people died and over 20,000 sustained serious injuries each year on Australian roads. While there was a significant downward trend in

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<sup>5</sup> Hine, J and Mitchell, F (2003) 'Transport Disadvantage and Social Exclusion' Ashgate Publishing Ltd ISBN 0 7546 1847 1

road accident numbers over the 70s, 80s and to about 1997, numbers have been more difficult to reduce since that time.

BTE estimates the national cost of these accidents at \$15 billion annually. BIC (2001) reports analysis that suggests perhaps one-third of these costs are external to road users, being met by the broader community.

The Australian Transport Safety Bureau Monthly Bulletin, *Road Fatalities Australia*, August 2003, indicates that over the last five years, typically one-third of fatal crashes have occurred in speed zones of up to 60 kph, one-fifth in zones from 65-95 and almost one half have been in 100kph zones. However, this data does not indicate the numbers that occurred in cities. The Australian Transport Council's *National Road Safety Strategy 2001-2010* sheds light on this matter by indicating that capital cities have the lowest road fatality rate per 100,000 population, with the risk of dying increasing with distance from capital cities.

The Australian Transport Safety Bureau, in its report on *Australian Bus Safety* (2001), provides clear evidence that buses are the safest form of motorised travel. The report shows that the fatality rate associated with bus travel in 1997 was 0.06 fatalities per 100 million passenger kilometres. The passenger car fatality rate was 8 times as high, rigid trucks 10 times as high, articulated trucks 13 times as high and motorcycles a huge 173 times as high. For hospitalisations, the bus rate was 0.47 per 100 million pkms, cars being 14 times higher and motorcycles 316 times higher. Rigid trucks were 10 times higher and articulated trucks 8 times higher. In short, passengers are safest in a bus and behavioural change policies and programs that encourage bus use would improve safety outcomes. Trains and trams were not included in the analysis but would also have better safety records than cars.

The Australian Transport Council's *National Road Safety Strategy* recognizes that encouraging alternatives to motor vehicle use will reduce exposure to road trauma, as well as achieving environmental and other benefits. However, that strategy does nothing to promote use of such alternatives.

**In planning for reduced road trauma in our cities, BIC believes that increased emphasis should be placed on the gains that are achievable from a greater role for public transport.**

## **2.6 Environmental Sustainability**

### **2.6.1 Air Pollution**

Air pollution and greenhouse gas emissions associated with personal travel in our cities are significant external costs of such travel. Our high degree of reliance on the private car drives relatively high emission rates.

It is estimated some 2,400 people die each year in Australia from air pollution, and some 10-15% of the population display respiratory symptoms (NEPC, 1998). These health impacts have major economic costs, estimated at around \$A18 billion/year<sup>6</sup>. These costs will tend to be concentrated in our cities, where the problems are based. BIC notes, however, that air pollution costs attributable to motor vehicle use can be expected to fall in coming years, as tighter emission standards and lower diesel sulfur levels come into use, under the Federal 1999 *Measures for a Better Environment* package and as in-service emission requirements are tightened.

Studies of air pollution episodes have shown that very high levels of ambient air pollution are associated with strong increases in adverse health effects. Recent studies also reveal smaller increases in adverse health effects at the current levels of ambient air pollution typically present in urban areas. Victorian EPA research, for example, has found a strong association between air pollution and daily mortality (particularly respiratory mortality in Melbourne, with the main sources of these pollutants being motor vehicles and industry.

It is now widely accepted that transport related emissions are associated with short-term health effects at the concentrations found in most cities. There is also a broad consensus that the effects of these pollutants on health can be quantified using exposure-response relationships based on epidemiological studies that link pollution concentrations or increments to levels of health effects. These health effects are usually valued using willingness to pay (WTP) estimates.

In preparing its 2001 submission to the Commonwealth Fuel Taxation Inquiry, BIC enlisted the assistance of expert consultants to the European Commission, drawing particularly on their work on air pollution and climate change. Our submission to that Inquiry presented air pollution cost estimates for Australian cities. Within the time available for that submission, it was not possible to undertake separate analysis for the range of sites and locations needed to develop original Australian cost estimates. Instead we drew on very extensive analysis of different transport systems in Europe, and transferred these values to Australia, taking into account local conditions and using unit pollution factors (costs per tonne) that were matched as far as possible to the Australian context.

BIC estimated that air pollution from motor vehicles in Australia costs about \$4.3 billion annually. These costs are, of course, essentially based in our cities. They represent externalities and, if a reasonable pricing mechanism was available, it would be appropriate that they be levied on road users as charges, to make users more accountable for the implications of their travel choices.

To fully capture air pollution effects would necessitate a complicated charging system, involving (for example) area access charging with differentials set on the basis of vehicle type/Euro standard, together with differing fuel charges dependent on emission performance. A more simplified approach implemented through fuel taxation may be

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<sup>6</sup> Although this estimate in NEPC (1998) is partly due to the use of a high value for loss of life, at \$A7million per life lost.



easier to implement in the short term. BIC (2001) suggests how such an approach might look.

**BIC proposes that fuel taxation should be restructured by the Commonwealth Government, to better reflect the external costs of road use, including the environmental damage associated with use of different fuels. Emission control standards should continue to be tightened, in line with international best practice, and fuel quality should continue to be improved.**

### *2.6.2 Climate Change*

The effects of global climate change from greenhouse gas emissions are diverse and potentially very large. They are likely to have very large economic costs, both from adaptation (e.g. coastal protection costs) as well as from damage to health and the environment.

Transport accounts for 16.1% of total national net greenhouse gas emissions in Australia, with road transport representing 90.2% of transport emissions (or 14.5% of total national emissions). Cars alone contribute 9.1% of national emissions. Road transport emissions in 1999 were 21.5% higher than in 1990 and are among the fastest growing sources of greenhouse gas emissions. **The road transport sector must thus be a major focus of efforts to contain greenhouse gas emissions.**

The externalities of greenhouse gas emissions are ideally suited to recovery through fuel taxes (charges), as emissions are directly related to the energy and carbon content of different fuels. Greenhouse gas emissions should thus be a key factor taken into account in restructuring fuel taxes, to make them more reflective of external costs of road use.

## **2.7 Overview**

This chapter has summarized BIC's views on key areas in which Australia's city passenger transport systems need improvement from a sustainability viewpoint. Attention has focused on:

- economic costs of congestion;
- risks to dynamic urban economic growth posed by congestion and poor urban amenity related to transport;
- transport disadvantage and road trauma as indicators of social unsustainability; and,
- environmental sustainability concerns posed by air pollution and climate change.

These problems all stem primarily from our high reliance on the private automobile for personal travel. All are, in essence, "external costs" of automobile dependence. Given

the long period of time over which our car dependence has developed, the sheer convenience which the car provides to most people for most travel in our cities and the slow rate of change of our urban systems, BIC recognizes that the car will continue to be the major means of personal transport. However, the sustainability issues raised in this submission illustrate the need for our **relative reliance** on the private car for travel in our cities to be substantially reduced. A greater role is required for more sustainable forms of transport: walking, cycling and public transport. This must be supported by land use strategies that reduce the need for travel. Chapter 3 provides BIC's views on key measures to encourage such change, focusing on what we term the **three levers** for more sustainable personal transport systems in our cities.

### 3. Three Levers Towards More Sustainable Personal Transport in Australian Cities

#### 3.1 The Levers

BIC sees three major sets of policy instruments as central to improving the sustainability of Australia's city personal transport systems. We call these the three levers. They are:

- public transport service quality;
- land use /transport integration; and,
- road pricing reform.

Using all three sets of instruments will maximise the chances of delivering more sustainable outcomes.

#### 3.2 Public Transport Service Quality

##### 3.2.1 *Building A Public Transport Culture*

BIC has studied urban transport systems in a large number of countries and concluded that those cities where public transport's modal share is highest can be characterized as having a **public transport culture**. This contrasts with Australia's car culture.

A public transport culture will only develop where people know that they can rely on public transport to meet a significant proportion of their travel needs, whatever the spatial orientation and time of that travel. A public transport culture can, of course, co-exist with a car culture, since public transport is never likely to carry more than a quarter of total trips in a developed western city (although it may carry a much higher proportion of trips to the central area). Examples of cities, in a country like Australia, that BIC believes have a strong public transport culture are Toronto, Ottawa and Vancouver in Canada. A public transport culture is also strong in places like Curitiba (Brazil), Bogota (Columbia), Hong Kong, Singapore and Zurich (Switzerland).

While buses are often thought of as the 'second cousin' to Australia's excellent urban rail and tramway systems, buses actually represent the main transport alternative to the private car for most Australians. As Figure 2.3 showed, Melbourne's metropolitan strategy identified that over two thirds of Melbourne residents are only ever likely to be able to walk to a bus. Despite Australia's most extensive urban rail and tram networks, less than a third of Melbourne residents live anywhere near to tram and rail services. BIC's own view of this issue is that the predominance of bus in Melbourne is likely to be mirrored in every other Australian city including Sydney. In addition, many of our major capital cities, including Canberra, have entirely bus based public transport systems.

**BIC believes that, due to the extensive and spread out nature of our metropolitan areas, substantial improvement in the quality and quantity of bus services is a cost-effective public transport option for improving the sustainability of travel options.**

### *3.2.2 Service Standards*

As part of its research for the Melbourne Bus Plan, conducted for the Victorian Department of Infrastructure, consultants Booz Allen and Hamilton asked a number of recognized international experts what they thought were the key drivers of increased city public transport patronage levels. The key drivers identified were:

1. higher frequency operations;
2. improved reliability (eg on-road priority) (these first two factors standing well out from the rest); and,
3. better marketing/branding.

Other factors of note were integrated fares, better network design(including better connectivity)/ticketing and fare reductions.

Consultation programs also conducted for Bus Plan, concerning bus improvement priorities for Melbourne, closely reflected this international finding. The consultations showed that bus users wanted high frequency services, better coverage of nights and weekends and more reliable services. To a lesser extent they also wanted better information, faster travel times, better spatial coverage of services and improved co-ordination with rail. Market research conducted about two years earlier for DOI for its Smart Bus initiative in eastern Melbourne repeated these priorities.

Where frequency levels are relatively poor, this factor typically rates first among improvement priorities. BIC notes that, in inner suburban areas, however, the number one priority for service improvements tends to shift to more reliable services. In Melbourne, inner areas already have good frequencies, provided mainly by tram and train networks. The on-road tram and bus services are often slowed by traffic congestion. This slowing is also associated with more variable arrival times, making reliability the major concern. Similarly, in places like Toronto, where frequencies are already high, reliability has become the number one priority.

Overseas and Australian experience provides good indicators of the service standards required to attract users to public transport. These are illustrated below.

Maximum walking distances of 400-500 metres to a bus stop (train?)

Frequencies

- trunk routes: peak 10 minutes (5 if a busway); off-peak 20 minutes (15 busway)
- feeder routes: peak 20 minutes; off-peak 30 minutes

#### Service span

- trunk routes: 05.00 to 24.00
- feeder routes: 06.00 to 22.00

#### Running time

- trunk routes: faster than the car
- feeder routes: close to competitive with the car on route

Following a comprehensive review of existing bus service standards in Australian cities and many comparable overseas cities, John Deveny of Maunsell McIntyre P/L concluded as follows (Deveny 2000, p. 18):

*In some urban centres in Australia, the minimum service standards, especially in the outer suburban areas, have been set too low to promote public transport as a viable alternative to other modes. Furthermore, residents who live in the fully developed, outer suburban areas may have services with lower frequencies than people who live in the inner suburban areas or are close to a busway or rail line. Higher minimum levels of service, in terms of frequency and span of hours, are needed to give the community better and more convenient access to the bus and rail network during the evenings and weekends, especially along busway corridors.*

The current typical service standards for train, tram and bus in Melbourne, for example, presented earlier in Table 2.1 of this submission, reflect Deveny's findings. The service standards nominated above are indicative of what is needed if public transport is to compete better with the private car in our cities and, in consequence, provide a real choice to travelers.

### **3.2.3 Reliability**

On-road public transport requires priority road access if it is to provide a real alternative to the car in congested operating conditions. Some Australian cities have recognized this and are providing increased on-road priority. Sydney, for example, has announced an \$800 million busway program, mainly in the outer suburbs, to improve cross-town movements. Brisbane has constructed a \$500 million south-east busway and is developing a northern corridor (Gympie Rd). Melbourne has implemented Smart Bus programs on Springvale and Blackburn Roads and is extending the program to Warrigal Rd. The Melbourne Bus Plan (yet to be accepted by the State Government) proposes extending these isolated initiatives to form three Orbital Corridors around Melbourne, at a capital cost of \$70 million (plus additional funding for improved service frequencies). BIC strongly supports these initiatives.

### **3.2.4 Bus Rapid Transit**

Bus Rapid Transit (BRT) is the name for the emerging new trend in providing high quality public transport systems using rubber tyred vehicles. The US Federal Transit Administration considers BRT a 'third option' for providing excellent transit, located between the traditional bus service and the popular but highly expensive heavy and light

rail options. BRT was identified by the US Breakthrough Technologies Institute as a new means of addressing the problems of unsustainable cities, noting that it combines the most popular features of rail with the flexibility and cost advantages of roadway transit and observing that it has been successfully implemented in South America and Europe and is now gaining popularity in North America. The US Government is supporting BRT initiatives on a national basis because of the cost effectiveness and has invested over \$1B US in these systems over the last 3 years.

BRT is a roadway-based public transport system using high quality buses but which looks and feels much like a subway. It uses dedicated lanes and/or arterial streets but with high degrees on priority provided to vehicles. Stops are designed like stations and people board through multiple doors, much like trains. Vehicles commonly have low emission rates. The service provided on BRT systems is very high frequency and operates 24 hours a day. BRT systems also use new technology developments including real time information systems.

The trend in developing BRT systems internationally has influenced the development of recent bus public transport system initiatives in Australia. The recent Busway in Queensland, Sydney's Transitway networks and the 'premium' bus networks being developed in Melbourne, Brisbane, Perth and Adelaide are all examples of BRT initiatives.

**BIC believes the Federal Government should encourage the development of Bus Rapid Transit system initiatives in Australia, since they represent cost effective means of addressing the urban transport problems of metropolitan Australia.**

### **3.3 Packaging Improvements to Lift Public Transport (Bus) Service Quality**

The Victorian State Government has set a visionary target of increasing public transport patronage from 9% of motorized trips today to 20% by 2020. In the Melbourne Bus Plan, Train Plan and Tram Plan studies carried out for the Department of Infrastructure, the kind of improvements programs needed to deliver this 20% outcome have been identified. BIC focuses in this submission on the proposed bus improvements.

Melbourne Bus Plan proposed a combination of:

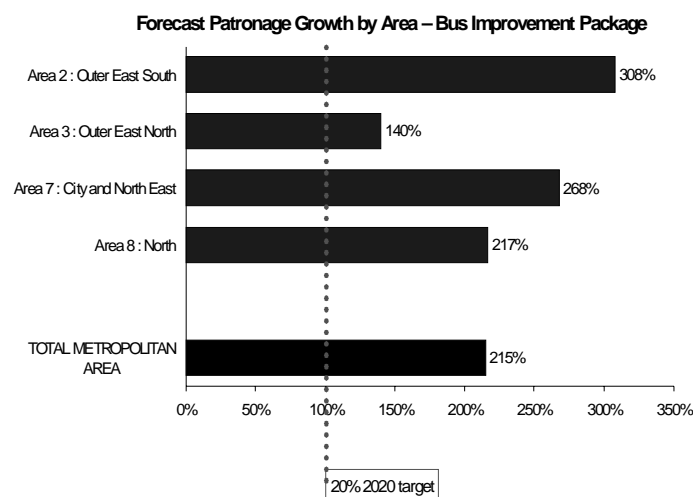
- improved service frequencies, longer span of hours and increased weekend services, covering both trunk and feeder routes;
- bus priority measures (Orbital Corridors and additional Smart Bus Routes);
- interchange upgrades; and,

- improved marketing of services, including comprehensive implementation of a Travel Smart program.

Total estimated net costs of the proposed initiatives was an additional \$214 million annually for operational costs (a little more than double the current cost of service provision) and \$470 million over ten years in infrastructure costs. The projected outcomes were as follows:

- social benefit/cost ratio of over 2;
- NPV of benefits = \$2.7 billion;
- patronage increases of 215%. In the outer south-east, where existing service levels are low, patronage was expected to more than treble, as shown in Figure 3.1 below;
- car traffic reduced by 143 million vkms;
- substantial improvement in accessibility for Melbourne residents and visitors, improving the equity of access for those reliant on buses (compared to those with trains/trams available nearby).

**Fig.3.1: Melbourne Bus Plan Projected Increases in Bus Patronage**



The Booz Allen Hamilton findings demonstrate that it is possible to improve the sustainability of city personal transport systems and the patronage increases already being achieved on new/improved services in a number of cities demonstrate that the growth expectations are not “pie in the sky”. BIC notes that the substantial patronage increases projected in Bus Plan do not assume the implementation of reformed road pricing arrangements. London’s experience (discussed in Section 2.3.1 of this submission),

demonstrates that congestion pricing could add further increases in public transport patronage, while reducing road use and its associated social costs.

While their social benefits substantially exceed the costs of implementation, the financial costs of a program like Bus Plan exceed the expected gains in fare revenues. Implementing such programs will, therefore, require a significant increase in governmental funding devoted to public transport. The submission returns to this issue in Chapter 4.

**BIC concludes that substantially improved service frequency and coverage, enhanced service reliability and better marketing of public transport services will lead to a significant increase in public transport use in Australian cities.**

### 3.4 Urban Structure and Form

Transport is not usually demanded as an end in itself but as a necessary component of engaging in various activities, such as work, shopping and recreation. The spatial relationship between services and activity locations in our cities (sometimes known as “urban structure”) and the nature and density of development (known as “urban form”) are important influences on how much travel takes place. The more accessible such activities, the less will be the need for travel.

Australian cities have tended to be based on a rigid separation of housing, employment and retail land uses at low density, dependent on road based transport. This underpins a high reliance on the private car for personal travel, since public transport modes face difficult operating economies in such environments.

Cross-country studies have suggested a link between urban density and three factors: car ownership, fuel consumption per capita, and the share of the journey to work catered for by public transport, walking and cycling - the higher the density, the lower the level of car use and fuel consumption and the higher the mode share of public transport.

The Commonwealth’s *Green Cities* (AURDR 1995) report argues that the major trends in Australian land use and settlement patterns which have encouraged high levels of motor vehicle use, fuel consumption and associated emissions include the following:

- suburbanisation at low densities and the continued predominance of single detached dwellings in the housing stock (a trend that has been slowly changing, in relative terms, in favour of multi-unit developments) ;
- the tendency of people to respond to the opportunities provided by relatively low cost motorised transport by traveling further;
- the separation of land uses, particularly workplaces and shops, from living areas, through the implementation of strict zoning;
- the orientation of economic activity around city arterial road networks and often away from public transport; and,



- the tendency to achieve economies of scale in supply of some services (for example schools or shopping centres) by withdrawing facilities from local areas.

Research points to various combinations of geographical compactness, concentration around strong urban centres, transit supportive development and localised employment and services as contributors to transport energy savings and contributors to a larger role for public transport. From the available evidence it appears that shifting urban structure in these directions can, over a period of about twenty years make a worthwhile contribution to greater sustainability of cities.

Transit Oriented Development (TOD) is the now a major international trend aiming to address a number of urban problems including traffic congestion, affordable housing, air pollution and incessant sprawl. TOD can be characterised by:

- mixed use development;
- development close to and well served by public transport;
- development that encourages riding by public transport;
- compact and higher density development;
- pedestrian and cycle friendly environments; and,
- traffic calming features to control and reduce traffic speeds.

TOD projects have been associated with increased public transport ridership and reduced car dependence. They have also been the focus of major urban regeneration projects.

There is clear interest among Australian States in moving their city development processes in this direction. For example, *Melbourne 2030: Planning for Sustainable Growth* proposes to integrate land use and transport policies around activity centres, to create a more “balanced and workable city”, with an emphasis on greater compactness than in the past few decades. A small number of “Transit Cities” will form the primary focus for a more concentrated future development pattern in Melbourne, reinforced by a far more numerous number of activity centres, which will be promoted by encouraging their development as mixed use centers served by high quality, integrated public transport services.

This approach to the future urban structure of Melbourne is seen as maximizing the probability that Melbourne’s key strengths will be enhanced and shared equitably. Melbourne 2030 sums up these strengths as: economic competitiveness, liveability, diverse people and an attractive urban environment. Outer city growth is to be encouraged to be located close to transport corridors and services. The linkage between sustainability, greater compactness and high quality public transport services is a recurring theme of Melbourne 2030.

The Warren Centre for Advanced Engineering at Sydney University has been vocal in supporting changes to improve Sydney’s sustainability. The Centre reports that Sydney residents have a deep and passionate interest in major issues affecting their city but that they perceive a lack of effective long term planning for the city. It notes that today’s shape of the city is based on the skeleton provided by the rail network, with low density

infill served by private vehicles. The Centre notes that the need for travel can be reduced by assisting Sydney's (internal) cities to develop their own mix of housing, jobs, services, education and cultural facilities to meet their citizens' needs, with planning and transport policies and programs directed to encouraging this increase in regional/local independence.

*Sydney's traditional transport vision of building more infrastructure to improve travel speed over greater distances is not working and is ultimately unsustainable. The better alternative is to plan land use to give access to activities while reducing the need to travel. Good land use planning can also encourage more sustainable modes of transport.* (Warren Centre 2003b).

The Centre drew attention to a dilemma with pursuing increased density. Its community attitude surveys noted that there is resistance to medium/high density developments and urban consolidation in people's "backyards". However, they point out that, when people understand the nature of the long term trade-offs, there is support for higher densities rather than continued low density fringe development. Better planning of urban consolidation was seen as being important, with associated policies required to improve public transport and protect open space (Warren Centre 2003a).

**BIC concludes that increasing the relative compactness of Australian cities and increasing the relative degree of concentration of activities will lead to improved sustainability, by reducing the need for travel and encouraging a greater reliance on public transport, walking and cycling for travel. Integration of land use and transport planning and development is essential to delivering this outcome. Careful attention to urban design can also encourage more sustainable means of travel.**

### **The Vancouver Example**

Developing more sustainable personal transport systems in Australian cities requires planning of city development and transport systems to be performed as part of a single process, which links closely to transport pricing, funding and investment processes. By way of illustration, if road users are not confronted with the full social costs of their travel choices when they make those choices, it becomes correspondingly harder to encourage the increased use of public transport, walking and cycling that is needed to improve sustainability. Equally, it is difficult to achieve increased use of public transport if new urban freeways are being constructed in the outer suburbs without prior upgrading of public transport services. All policy measures need to be used in an integrated way if major social change is to be delivered. Institutional processes can encourage or discourage such outcomes.

Cities like Vancouver and Curitiba (Brazil) have shown that effective integration of transport and land use needs to be driven from the land use side, with a vision of the way a community wants its city to grow and develop and a sustained commitment to achieving this vision over a 20+ year time frame.

Vancouver opted in the late 60s for a future city emphasising high environmental quality, saw this as threatened by freeway development and has adhered to a no-freeways policy position since that time. Vancouver is the only city in North America with less than one kilometer of freeway within its city limit. It is also Canada's fastest growing city. While fast growth always brings problems, the Vancouver population continues to make choices that support relatively compact development and use of public transport.

In 1990 the Greater Vancouver Regional Board (of local municipalities) adopted its *Creating Our Future* vision:

*Greater Vancouver can become the first urban region in the world to combine in one place the things to which humanity aspires on a global basis: a place where human activities enhance rather than degrade the natural environment, where the quality of the built environment approaches that of the natural setting, where the diversity of origins and religions is a source of social strength rather than strife, where people control the destiny of their community, and where the basics of food, clothing, shelter and useful activity are accessible to all.*

These values would find wide support in Australian cities. Vancouver has pursued this vision in a sustained manner:

- in the mid 90s with the Greater Vancouver Regional District's *Livable Region Strategic Plan* and Regional Transportation Plan (*Transport 2021*). The focus has been on careful planning, clustered development and a pervasive commitment to public transport. Under this strategy, growth has been focused in large town centres that are linked to the centre by Sky Train or buses;
- then with the Translink (the regional transportation agency) Strategic Transportation Plan 2000-2005, which works within the framework set by the Livable Region Strategic Plan and takes the long term transport strategy to a manageable implementation time-frame at the regional level;
- the City of Vancouver Transportation Plan of 2000 then fits within the framework provided by the preceding land use and transport documents, proving a consistent line of follow through in pursuit of shared city goals.

The Canadian Federal Government is now seeing the importance of cities to future economic, social and environmental wellbeing and has begun the process of developing specific urban policies.

BIC believes that the particular values and directions espoused in the Vancouver land use/transport development strategies are strongly supportive of sustainable city development. Importantly, BIC believes that the **process** that has been used to achieve the goals of these strategies contains lessons for Australian cities.

Interestingly, however, Vancouver has stalled somewhat in the pursuit of its mode share targets for public transport. A major reason for this development seems to be the lack of a **sustainable funding source** to meet the implementation costs of the public transport development initiatives in the Strategic Transportation Plan. This has meant that the service expansions that have taken place have been less than was planned in the Strategic Plan.

**BIC concludes that the availability of a sustainable funding source for improved public transport services is critical to achievement of more sustainable personal transport systems in Australian cities.**

### 3.5 Urban Design

It is not only the structure or layout of a city that influences its sustainability from a transport perspective. Detailed design considerations are also important, since they can influence the relative attractiveness of public transport, as compared to the private car. A couple of examples can illustrate this point.

In major suburban shopping centres, the location of bus stops can play an important part in influencing how well the bus services involved will be used. If bus stop bays are integrated into the fabric of the shopping centre at a highly convenient location, close to the entrance and protected from the weather, usage will be greater than if the stops are exposed to the elements some distance from the entrance to the centre (e.g. past the car park!).

Similarly, the design of new residential subdivisions can affect potential public transport use. If neighbouring subdivisions are directly connected by a bus route, service operating times will be better than if the vehicle needs to go in then out of each subdivision separately. The more convenient the service, the higher will be its usage.

Local government has a key role to play at the urban design level in ensuring that public transport is provided with the opportunity to deliver a convenient service.

**BIC concludes that approval of new subdivision, activity centre and shopping centre development plans should be dependent on adequate provision being made for public transport operation. State Planning Frameworks should mandate this requirement.**

### 3.6 Road Pricing Reform

The discussion in Chapter 2 emphasised that road use in Australian cities is characterized by numerous instances where users are not meeting the costs attributable to their travel choices. Improved resource allocation in urban transport requires that users are confronted by these costs. The relevant costs to be met for improved allocation are **marginal social costs**. These costs include road damage, air pollution, noise, climate

change, costs accidents and congestion costs. BIC's submission to the Commonwealth Fuel Taxation Inquiry presented estimates of such costs for Australian cities.

Congestion costs will range from zero in rural areas at most times to costs exceeding \$1/km in parts of the major cities at peak times. Stanley and Ogden (1993) estimated an "average" marginal congestion cost of 5.9c/km in Melbourne in 1991. Meyrick (1994) estimated "average" marginal congestion costs at 6c/km. Updating these figures to current prices and recognising that costs for cars would be less than for larger vehicles would produce a current (averaged) figure of perhaps 7c/km for cars, which converts to a broad externality cost of 60-70c/L for cars. The charge per litre is useful as a comparison against current fuel excise rates. As indicated previously, however, peak marginal costs are far higher (at over \$1/km in Melbourne, for example).

Noise costs are difficult to value in marginal cost terms. However, Delucchi and Hsu's (1998) base case estimate for principal arterials suggests an estimate of about 0.25c/km (2.5c/L) for cars.

Road damage costs are very low in marginal social cost terms for cars. Meyrick (1994) produced estimates of 2.5c/L for rural car use and 1.25c/L for urban car use. Even allowing for inflation since that time, figures are unlikely to exceed 3c/L (0.3c/km) for rural car use and 2c/L (0.2c/km) for urban use.

Accident costs on Australian roads average about 8c/L. (BIC, 2001). These are not marginal costs. The recent UK work on *Surface Transport Costs and Charges* (Sansom et. al. 2001) suggests that marginal accident costs exceed average costs, so the 8c/L figure (or 0.8c/km) can be taken as possibly underestimating marginal accident costs. However, there is likely to be a difference between urban and rural accident costs, which BIC has not taken into account in these figures.

Table 3.1 sums up BIC's estimated marginal social costs of car use in Australian cities. The costs for urban car use are far in excess of marginal revenues paid to government for car use in urban areas (the 38c/L fuel excise charge) but the reverse situation applies for rural use. The major reason for the revenue shortfall in urban areas is congestion costs. At peak times on congested networks, the marginal social costs are far higher again than the figures shown in Table 3.1 (over \$1/km in Melbourne, as cited in Chapter 2). If the efficiency of resource use is to be improved, tackling urban congestion costs is essential. Lowering the level of taxes on rural car use also emerges as a desirable direction for policy. Ideally, this analysis would be completed for all vehicle types.

The differences between the external costs shown in Table 3.1 and the current level of excise underline the urgency of doing something to reform Australia's road transport pricing. The current arrangements provide very inefficient signals for resource allocation.

**BIC concludes that the Australian Transport Council should direct the National Transport Commission to review all of Australia’s existing transport taxes and charges and to make recommendations on changes that are needed to achieve a pricing framework that internalizes the external costs of road use.**

BIC re-iterates that measures to reduce urban congestion should be a high priority, towards improving the efficiency of resource use in road transport. Public transport can play a significant role in this regard. Lowering the tax level on rural car use also appears desirable from an efficiency perspective.

**Table 3.1: Approximate Marginal Costs of Australian Car Use (c/L)**

<b>Cost Item</b>	<b>Urban</b>	<b>Rural</b>
Road damage	2	3
Congestion	60	minimal
Air pollution	2-10	minimal
Climate change	9	9
Noise	3	minimal
Accidents	8	8
<b>TOTALS</b>	<b>84-92</b>	<b>20</b>

Source: BIC estimates.

The costs of road use shown in Table 3.1 are indicated as a charge rate per litre, implying possible charging through a fuel tax. However, this is not easy to achieve, since the rates are vastly different between urban and regional areas. Substantially different excise rates would be needed as between the two areas. Going further, congestion costs vary substantially by time and place within cities, such that excise is not a good mechanism by which to levy these costs. Congestion pricing is a more finely honed policy instrument, albeit one that is not easy to implement for political reasons. However, as pointed out in Section 2.3.1, London has shown that effective schemes are possible if the political will exists.

While congestion pricing is usually envisaged as a means of improving transport resource allocation, it has a related beneficial dimension: it generates funds that can be used to invest in improved transport services, such as upgraded public transport, and in environmental enhancement (e.g. of areas adversely affected by traffic volumes). These funds come both directly through the congestion charging process and through increased public transport fare revenues, as patronage levels increase. BIC believes that earmarking funds from congestion pricing for (1) road improvements (2) public transport improvements and (3) general amenity improvement in traffic-affected areas will increase the community acceptance of congestion charging. This belief is supported by London’s experience and by research undertaken by the Warren Centre (2003c), which indicates resentment if transport pricing is seen as a general taxing mechanism. The Centre’s work shows that the community supports the hypothecation of transport pricing revenues to

transport projects. Community education to promote public acceptance is an important element for implementation.

### **Parking Charges**

While BIC sees congestion pricing as the most important reform in the area of transport pricing, this will take time to implement. In the shorter term, governments should examine levies on parking spaces in congested areas as a second best way of approaching congestion costs. Sydney, for example, already has such a charge. Parking levies have the disadvantage of not affecting those who drive through a congested area and of being unrelated to the level of use of congested roads. However, they do provide a means of partially impacting on travelers in congested areas. Charges for on-street places should be higher than for off-street spaces, because the on-street spaces directly hinder traffic movement and add to congestion.

**BIC supports levies on parking spaces in congested areas as a useful step towards improved road transport pricing.**

### **3.7 Technological Progress**

The methods of improving the sustainability of personal transport in Australian cities that have been considered above focus on ways of encouraging changes in demand for travel away from the private car and towards more sustainable modes, particularly public transport. Sustainability of our personal transport systems can also be improved by technological change. BIC has not focused on this area because we see the demand side as requiring, by far, the greatest changes. We do offer some overview comments, however, on the role of technological progress and how it is likely to impact on sustainability over the period to 2025.

The emission performance of the Australian vehicle fleet is significantly influenced by Australian Design Rules, which specify new vehicle emission performance requirements, in-service emission performance and fuel quality. For many years Australia lagged international best practice in **emission performance** requirements for new vehicles but this lag has largely been removed today. BIC strongly supports the trend towards harmonization with European emission standards and believes that this has been significant in improving the outlook for air quality in Australian cities.

**In-service emission performance** of our vehicle fleet is more problematical. While there are programs such as smoky vehicle programs to place some limits on how vehicles might operate from an emission perspective, these do not impact on many vehicles. There is no requirement on motorists or anyone else to ensure that vehicles comply with emission targets over their lifecycle and there are very few facilities available nationally to test emission performance. While in-service requirements are being implemented for heavy duty vehicles (such as buses and trucks), the absence of compliance assurance programs will mean that these are essentially tokenism.

**BIC proposes that there should be a regulatory requirement, implemented as part of a National Environment Protection Measure for air quality, that all vehicles undergo periodic testing of their emission performance, to ensure compliance. To help facilitate implementation of this program, the Federal Government should assist with funding of a core set of emissions testing facilities throughout the country, starting in the major capital cities where air quality concerns are greatest.**

On the matter of **fuel quality**, BIC has been a strong supporter of moves to introduce ultra low sulfur diesel, because of the contribution this will make to reducing particulate emissions. Longer term, and possibly within the 2025 time frame, we see fuel cell technology as being the major means of powering the vehicle fleet. This will be associated with very major reductions in emissions, as the technology spreads.

The other important area where BIC sees technology contributing to more sustainable city transport is in the area of traffic control. Specific examples include Smart Bus systems, which enable faster bus operation through implementation of intelligent priority measures, and real-time driver information systems, which assist drivers (for example) in choice of routes with lower congestion levels and may encourage some mode shift to public transport, if this can be indicated as operating faster than the car.

Over a time frame of 20-30 years, it is feasible to imagine a car fleet that is virtually emission free. What does this mean for the sustainability issues considered in this submission? BIC believes that the arguments in favour of a larger relative role for public transport, walking and cycling, are only marginally weakened by the long term prospect of clean cars. The major sustainability arguments against the car, in our view, relate to congestion and transport disadvantage. These arguments are essentially unaffected by vehicle emission performance.

### **3.8 Public Support for Improved Public Transport**

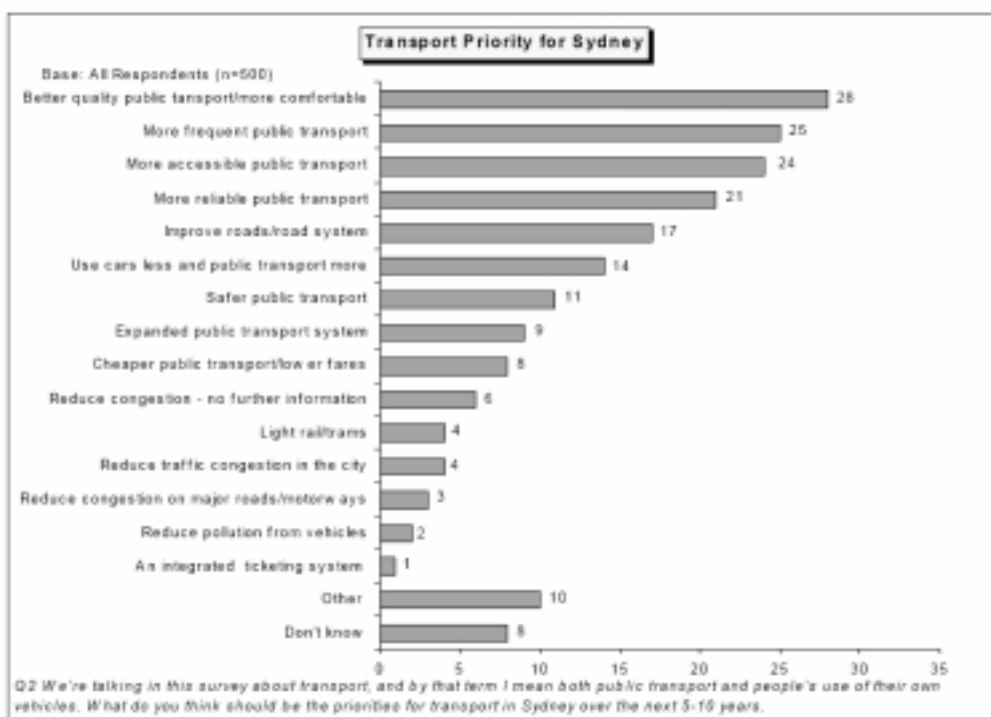
There is considerable Australian evidence of much public support for improved public transport services, as a part of redeveloping our major urban centers:

- public consultations undertaken as part of the Melbourne Metropolitan Strategy identified improving public transport as the number 1 priority out of all planning issues in the city;
- the Warren Centre has highlighted the range of public support for improving public transport as a main priority over roads to address Sydney's transport issues. They have also contrasted the differences between public views and decision makers' views in this area.

The NRMA, a motoring organization, undertook a review of the public's views on addressing Sydney's transport problems (Figure 3.2). The four most popular responses involved improving public transport. Eight of the top ten answers involved public transport.



**Figure 3.2: Public Views on Solutions to Sydney's Transport Issues**



Source: 'Tackling Transport Pricing' H Wise Australasian Transport Research Forum Wellington NZ October 2003

The same study asked the public about the most effective ways to fund public transport improvements. Almost half the respondents supported congestion charging of some kind. It was clear from the study findings that support for pricing was related to its direct 'hypothecation' to improving public transport.

### 3.9 Overview

To improve the sustainability of personal transport systems in Australia's cities, three major policy instruments should be used in concert, to encourage behaviour change:

- public transport service quality should be improved to attract people out of their cars and to give greater choice to those without access to private vehicles. A sustainable means of funding such initiatives is integral to successful implementation;
- land use should be arranged to reduce the need for travel and to enhance the attractiveness of public transport, walking and cycling. This essentially means increasing activity densities over parts (at least) of our cities;
- road users should be made to confront the social costs of their travel choices, through road pricing reform.

From the supply side, technological change will continue to improve some aspects of the sustainability of the car and of other motorized vehicles but issues of congestion and transport disadvantage will remain as compelling arguments for a shift to more personal travel by public transport, walking and cycling.

There is growing evidence that Australian city communities are prepared to see this increased emphasis on public transport solutions to sustainability in our cities.

Chapter 4 considers how to encourage the kind of institutional setting where such changes can actually be achieved.

## 4. Institutional Reform

### 4.1 Why?

Improving the sustainability of personal travel in Australia's cities will require a significant shift from car to public transport, walking and cycling, particularly in the larger cities where the external costs of road use, such as congestion, transport disadvantage, air pollution and road trauma are highest. With car use in our cities growing at about 1% annually, increasing public transport mode share from the 5-8% range now found in most cities to about 20% would effectively remove over 10 years growth in road traffic volumes in our cities. With congestion costs projected by BTE to grow by about 150% between 1995 and 2015, road traffic reduction of this order of magnitude could be expected to leave congestion costs under \$20 billion annually, instead of them reaching \$30 billion annually as projected by BTE. These are huge potential benefits from growing the public transport mode share in our cities to the 20% range and they are complemented by additional benefits such as cleaner air, lower greenhouse gas emissions, less road trauma and improved equity in access to transport services and to the opportunities they open.

There is ample international evidence that providing public transport services that are frequent, reliable, integrated and well marketed can attract mode shares in the 10-15% range, about twice the typical Australian city shares. Achieving shares around 20% requires this to be supported by the other two levers discussed in Chapter 3: close integration of land use and transport planning and development, with a focus on approaches such as transit-oriented development; and, reform of road pricing arrangements to make road users accountable for the costs of their travel choices. It is unheard of for all three instruments to be used in concert! In most cases, reliance is placed on improving public transport service quality, with

- land use changes being seen as too long term to interest many decision-makers in a clear direction over a sustained period of time and
- road pricing, particularly congestion pricing, being too difficult for decision-makers to contemplate in a society so wedded to their cars.

This situation is compounded in Australia by the dominance of short term Treasury thinking in budget management processes. However, achieving the scale of switching from private to public transport that will be needed to make a significant improvement in sustainability will require that all these instruments are brought into play in combination, over many years.

Delivering change of this magnitude will take 15-20 years, or more, and will be beyond the scope of any single level of government. More importantly, dealing with the sustainability issues involved should necessarily mean **engagement of all levels of government** and the broader community in partnership relationships, because the issues

involved are of national, State and regional/local significance, as pointed out in BIC's submission on the Commonwealth's Auslink Green Paper (BIC 2003). Without strong community engagement, change of the magnitude required will not be achievable. The Warren Centre (2003d, p. 6) makes the strong point that:

*The community has said that current levels of consultation are not sufficient and occur too late in the process. To support the changes being proposed, the community does not want to be consulted but to be represented in the process from the outset.*

This chapter of our submission suggests ways in which a broader and more inclusive approach might be achieved.

BIC notes that its perspective has much in common with that of the Canadian Prime Minister's Caucus Task Force on Urban Issues. The November 2002 Final report of that Task Force, Canada's *Urban Strategy: A Blueprint for Action*, argued (p. 5) that:

*An enhanced relationship between the Government of Canada and among our urban partners, provincial and municipal governments, the private sector, community and business leaders and the voluntary sector, will guide strategic federal capital-investment in our cities and will improve the quality of life for millions of Canadians living in our urban regions.*

*This innovative relationship will form the foundation for a new approach. This is the basis for Canada's Urban Strategy. How we move forward on these issues will ultimately be shaped by partnerships that share a vision of what is important for our nation and its citizens.*

## **4.2 A Proposed Australian Model**

A broad **urban transport development** framework that:

- ties pricing, investment and funding decisions more closely together,
- allows for a range of solutions to be funded without premature imposition of constraints on the type of solution (e.g. road improvement or public transport improvement),
- is closely integrated with urban development decision-making and
- recognises that all levels of government and the broader community have legitimate interests in the outcomes of the process

will enhance the efficiency and effectiveness, including sustainability, of transport resource allocation. However, because of the **national interest** issues involved in the development of our cities, for the economic, social and environmental reasons discussed in Chapter 2 and summarised in Table 4.1 below (drawn from BIC 2003), the approach to these transport matters in our cities needs to be one part of a broader national approach to

transport decision-making, beginning with Institutional reform of the current Federal Regulatory Framework and establishment of a clear National Strategy on Sustainable Transport delivered through a new Intergovernmental Agreement on Land Transport.

**Figure 4.1: The National Interest in Improved Public Transport in Australia**

<b>Criterion/ Area</b>	<b>Metro Areas</b>	<b>Regional Areas</b>	<b>Remote Areas</b>	<b>Global</b>
Economic	<ul style="list-style-type: none"> <li>- Congestion costs, including costs to business</li> <li>- Cities as engines of economic growth</li> </ul>	<ul style="list-style-type: none"> <li>- Service delivery efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Service delivery efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Pricing for more efficient resource allocation</li> </ul>
Social	<ul style="list-style-type: none"> <li>- Transport disadvantage on the fringe of cities (access standards)</li> </ul>	<ul style="list-style-type: none"> <li>- Social inclusion (access standards)</li> </ul>	<ul style="list-style-type: none"> <li>- Social inclusion (access standards)</li> </ul>	<ul style="list-style-type: none"> <li>- Safety (accidents)</li> <li>- Aging population</li> <li>- Public transport security</li> <li>- Obesity from lack of walking</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>- Air pollution, water pollution</li> <li>- Noise</li> <li>- Health impacts of the above</li> </ul>			<ul style="list-style-type: none"> <li>- Climate change impacts of motor vehicle use</li> </ul>
Process				<ul style="list-style-type: none"> <li>- System integration</li> <li>- Leadership</li> <li>- Vision</li> <li>- Pricing/tax framework</li> <li>- Transport culture</li> <li>- Sustainability</li> </ul>

Figure 4.1 illustrates how this approach might work in schematic form in an Australian setting.

**BIC proposed the Review and Institutional reform of existing Federal Departmental portfolio arrangements, and National Institutional arrangements as they relate to National sustainable transport policy programs.**

**BIC believes that development of more sustainable personal transport systems for our cities must be a key focus of the implementation of a more integrated national transport system. The States should form the hub of the approach, because they have the primary responsibilities for service delivery on land use and transport. This means that a State Transport (Pricing and Funding Allocation) Agency (the Central Agency) should be established as its cornerstone, in each state. Other levels of government and the broader community also need to be involved, however, because they have important interests in the economic, social and environmental outcomes of the land use/transport process.**

The Agency should thus bring together all levels of Government plus user and community representatives at Board level, to establish a broad base of legitimacy. It should channel funds from the State and Commonwealth Governments and the private sector (as appropriate) into programs and projects that meet criteria it develops, taking account of the roles that can be played by:

- other funding sources, such as local government, and
- other policy instruments that can contribute to improved sustainability (e.g. legislation and regulation).

Bids for program and project funding would come from area-based Funding Boards, as suggested in Figure 4.2, these bids being based on criteria laid down by the Central Agency. Establishment of principles to match expenditure requirements with funding sources, including improved pricing-based sources of funding, should be an early priority for the Agencies, within a nationally co-ordinated framework.

The Commonwealth should be represented on the Board of the State Transport (Pricing/Funding Allocation) Agency for a number of reasons:

- to ensure that the economic, social and environmental issues of national importance that are related to/affected by city land use/transport developments (dealing with the Standing Committee's current interests) are adequately recognised in the process;
- in recognition of the funding contribution which the Federal Government should make through this framework to pursuing the respective national interest issues. This funding contribution could be via tied grants, to ensure that federal policy objectives, which would be communicated to the Central Agency as part of the Federal input, are given due weight in the (integrated) decision processes;
- because it has influence over a number of policy levers that can directly influence various objectives set for, and/or outcomes achieved by, transport systems (e.g. fringe

benefits tax, the Motor Vehicle Standards Act, fuel standards, disability requirements; National Roads Programs).

While BIC has emphasised the importance of much closer integration of urban land use and transport planning and decision-making, we have not proposed an all-inclusive land-use/transport agency for each city, believing that transport is only one dimension of the life of a city, albeit an important dimension. Instead, we see the movement for sustainable cities being grounded at Heads of Government and State Cabinet Committee levels, with our proposed Central Transport Agencies operating within framework (including integration) guidelines set at this peak level.

From a practical viewpoint, we also believe that it will be easier to start a process towards increased sustainability by improving existing inter-governmental relationships and processes within the transport sector. Provided there is pressure maintained to include the land use perspective, delivering progress in the short to medium term and engaging the community in a process that delivers results might be better commenced in improvements to how the transport sector functions. These improvements should focus, in particular, on delivering change in the four dot point areas noted at the start of this section (4.2) of the submission.

Figure 4.2 shows management decision making flowing in both directions between a State Government and its State Transport (Pricing/Funding Allocation) Agency. This reflects:

- policy decisions at State level about priorities and how much money it is prepared to commit to transport programs/projects, including the sourcing of such funds;
- State/Commonwealth decisions about transport pricing systems and the principles that should govern these charges, which will influence some State charges for transport (e.g. road user charges by heavy vehicles, under a national charging system). Most transport charges will remain matters for State deliberation, such as congestion charges, which should reflect local conditions in particular congested areas, but **pricing principles** should be agreed on a consistent basis for a national transport policy and plan to have meaning.

The Federal Government's input into the Agency would need to encompass its interests in encouraging economic growth, in developing strategic transport networks and implementing efficient pricing systems that are nationally uniform/consistent in approach. It would also need to cover Federal interests relating to achievement of environmental outcomes (e.g. on greenhouse gas emissions) and to basic standards of access that should be delivered by transport networks to all residents in a State (where these standards will differ between metropolitan, regional and remote areas, for example).

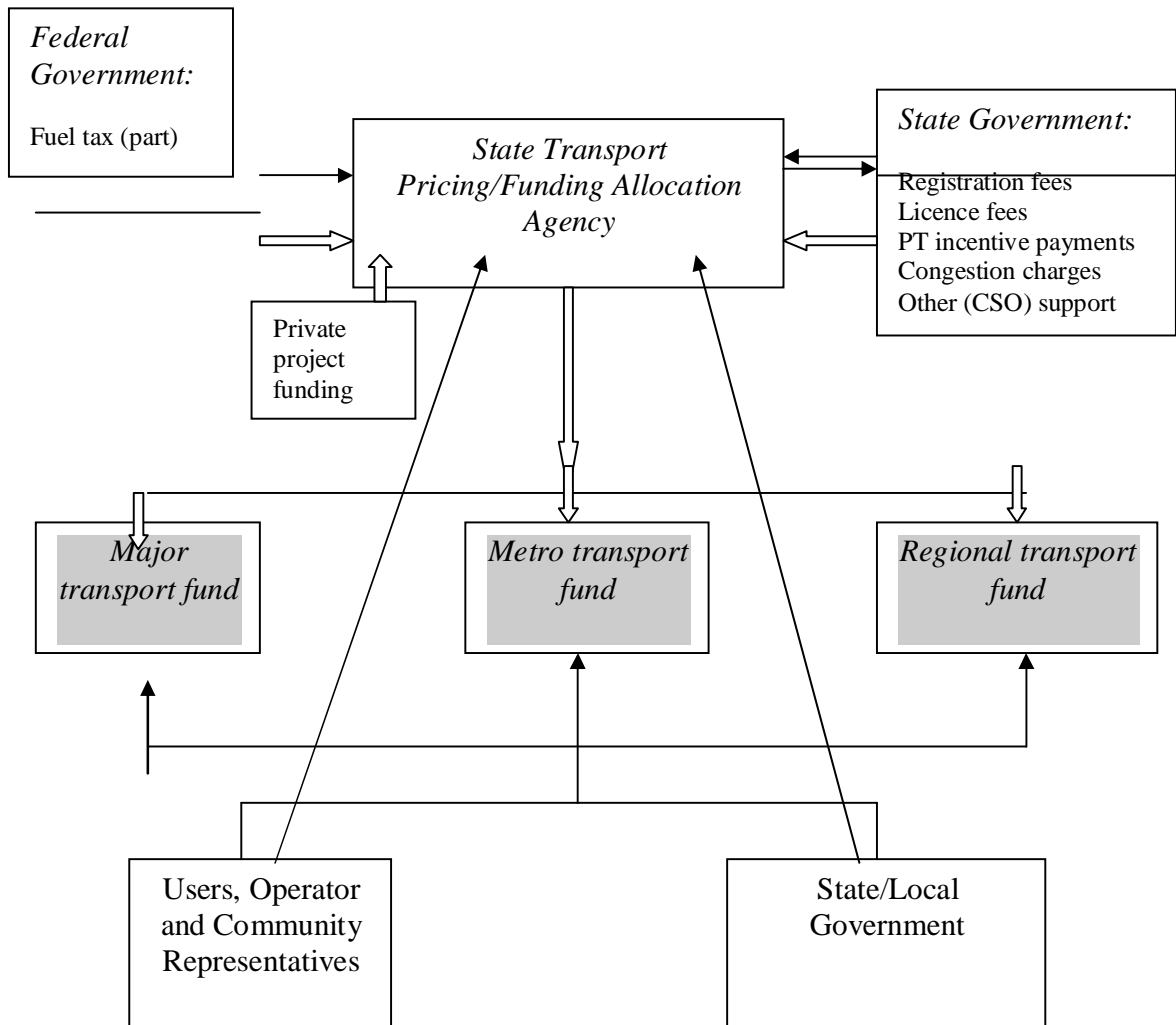
Figure 4.2 suggests the framework is multi-modal in scope, recognising (for example) that roads are only one option for delivering desired transport outcomes. The target must be an integrated approach, without preference for specific modes and with adequate

recognition of the role that land use factors play in land transport decisions and outcomes. To encourage such an integrated approach from an early stage, Federal funding support for city transport initiatives, such as major freeways, should be made conditional on a State having an integrated land use/transport decision making process in place, from which the transport initiatives for which Federal funding assistance is being sought have emerged.

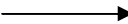
Federal involvement is shown as being at the Central Agency level but would also be appropriate at Board level in the Major Transport Fund, where funding of some Federally supported projects would be based. The Metro and Regional Transport Funds should not need Federal Board involvement because the level of detail is getting too fine. National interests at this level should relate more to programs than to projects and can be adequately dealt with by block funding flows to the Metro and Regional Boards, consistent with the explicit program/project evaluation criteria from the Central Agency.

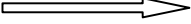
Explicitly establishing funding bodies at metro and regional levels, in the context of improved pricing regimes, will highlight issues of service standards and the need for funding support to deliver these standards. This will encourage Federal and State Governments to be more specific about their objectives.





**Figure 4.2: Possible National Transport Management/Funding Process.**

Representation in Management decisions 

Funding flows 

### **4.3 Why the Need for Such Radical Change?**

BIC believes that radical change is required because of the failure of existing policies and programs to make substantial progress towards delivering more sustainable land transport systems, particularly in our cities, and the huge national social costs resulting from present land transport choices (BIC 2001). Apart from the success in reducing air pollution from traffic in Australian cities (attributable to tighter emission control requirements and cleaner fuel), traffic congestion is worsening, with huge costs, climate change implications of road use remain high and are growing, the road toll is still at unacceptable levels and large numbers of people remain transport disadvantaged. Real progress in these areas requires radical changes, particularly cultural and related behavioural change. It requires an integrated (whole of governments) approach, that brings all relevant policy instruments to bear on sustainability.

Integration in our view encompasses a wide range of key components, such as:

- objectives – where we have indicated there are distinct national interests in land transport. There are also State, regional and local interests and the development of the most effective outcomes from a sustainability perspective needs a process that reconciles and integrates these various levels of interests. We believe that a State-based Central Agency, with Federal Government, Local Government, private sector and community input (at Board level) in each State, is the best way to achieve strategic integration, which is probably the most important integration if improved outcomes are to be achieved;
- options – socially desired outcomes in transport can come from implementation of transport solutions and from non-transport solutions, including land use alternatives. There is increasing questioning of the ability of roads-focussed approaches to deliver more sustainable land transport systems, with multi-modal approaches and behavioural change being seen as a key element of the way ahead. Mechanisms are needed to ensure that the full range of suitable options is canvassed, consistent with the issues being considered. Institutional frameworks that encourage a search across a range of options are more likely to deliver best value for money in our view.

Some programs and projects to encourage behavioural change towards more sustainable personal travel choices can be (and are being) fitted within existing Federal support structures. Thus, for example, Greenhouse funding programs can be used to assist behaviour change programs like Travel Smart. However, these are of marginal impact when Federal urban road funding (for example) is encouraging growth of road use, with its attendant social costs, at the expense of more sustainable means of transport. A more radical and integrated approach is needed to improve sustainability of our land transport systems, rather than tacking bits on to the current process. More of the same will not produce the answers.

The Federal Government must take a broader view of the scope and impact of its involvement in land transport. It should make its objectives clear, align its support programs with its objectives, and make its funding support dependent on States and Territories establishing processes to incorporate these objectives, with behaviour change towards more sustainable transport choices being a central objective.

Some States are already adopting elements of more integrated transport planning approaches but without the inclusion of linked pricing regimes and with inadequate recognition of the national significance of much of the subject matter. The States and Territories need to co-operate in this process because it is partly, at least, a national problem that involves them all.

A new Inter-Governmental Agreement on Land Transport will be needed to put the model in place. The success of the National Road Transport Commission process has shown that such an inter-governmental approach can achieve support across the governmental spectrum and engage the players in seeking solutions in line with the objectives of the process.

**BIC proposes that the Commonwealth should initiate the development of a New Inter-Governmental Agreement on Land Transport, whose focus should be on the establishment of more sustainable land transport systems, utilising the three key policy/program levers of improved public transport services, better land use/transport integration and reformed land transport pricing systems.**

**BIC proposes that the Federal Government kick-start this process of change by establishing a Sustainable Infrastructure Fund, to support investment in major infrastructure improvements that have a strong sustainability rationale (e.g. improved public transport systems). States seeking projects for funding support from this Fund should be required to meet certain conditions specified by the Commonwealth, namely that they: (1) comply with any specific sustainability objectives nominated by the Federal Government in proposing projects for funding support from the Infrastructure Fund; (2) demonstrate that any transport projects for which they are seeking funding support have emerged from an integrated land use/transport planning and development process; (3) are prepared to match dollar for dollar the Federal funds being sought for any project (without offsetting cuts in funding elsewhere); and (4) sign off on a New Inter-Governmental Agreement on Land Transport within twelve months of the announcement of the Infrastructure Fund.**

The Warren Centre provides some encouragement for the prospects of a radical approach to more sustainable city transport systems actually working (Warren Centre 2003d, p. 3):

*...Sydney has never been better positioned to move towards a more sustainable transport outcome. Current levels of political commitment to sustainable transport and the community's growing awareness and concern about its city offer an unprecedented opportunity to act and move towards a sustainable transport vision for Sydney.*

Consultations held in Melbourne during the Department of Infrastructure's preparation of *Melbourne 2030* are similarly supportive.

The BIC recognises the development of the National Charter of Integrated Land Use and Transport Planning to support existing and future planning mechanisms and provides a model in which the BIC 'Sustainable Cities' policies could be implemented and perhaps form the basis of New Intergovernmental Agreement for Land Transport.

#### **4.4 Federal Involvement in Public Transport – International Evidence**

All modern western countries, with the exception of Australia, obtain financial support for public transport from their national Government.

The Federal Transit Administration of the United States Government administers over \$US7Bn in both capital and recurrent funding to transit systems throughout the US. They also support the development and dissemination of best practices in public transport planning and management through the Transit Cooperative Research program and through seed funding for transit development projects.

Canada now has a national policy of supporting major infrastructure programs, including transit, which is seeing a substantial growth in involvement of the federal government in both funding and support for new projects throughout the country.

A study of public transport funding policies in Europe<sup>7</sup> showed that:

- all national governments provided funding for new public transport capital projects;
- for over 40% of these countries, the funding represented 100% of the project's capital costs, while in all but two of the countries examined, federal capital funding represented over half the projects' costs;
- over 70% of the European countries examined had direct Federal funding to cover annual operating costs.

Federal involvement in supporting public transport improvements in Australian cities would thus bring our arrangements more into line with normal arrangements elsewhere.

#### **Figure 4.5: National Institutional Reform**

Currently within the transport sector there exists at the National level, several key bodies involved in National Transport reform, policy and strategy.

These bodies are highlighted in the form an organisational chart below. It is evident when looking at the mission statement, charter or work programmes of each of these bodies, there is no clear area or organisation which has responsibility for the development of a National Passenger Transport Strategy, a Moving People Strategy, or a Sustainable Cities Policy. These matters are currently managed in an adhoc manner and as an add-on to other issues rather than any specific focus or particular body focussing its attention to the future mobility needs of Australian citizens how these will be best provided and how it fits within the overall scheme of things.

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<sup>7</sup> Halcrow Fox (95) 'Research into Pricing and Financing of Urban Transport : Final Report. Report of the European Commission

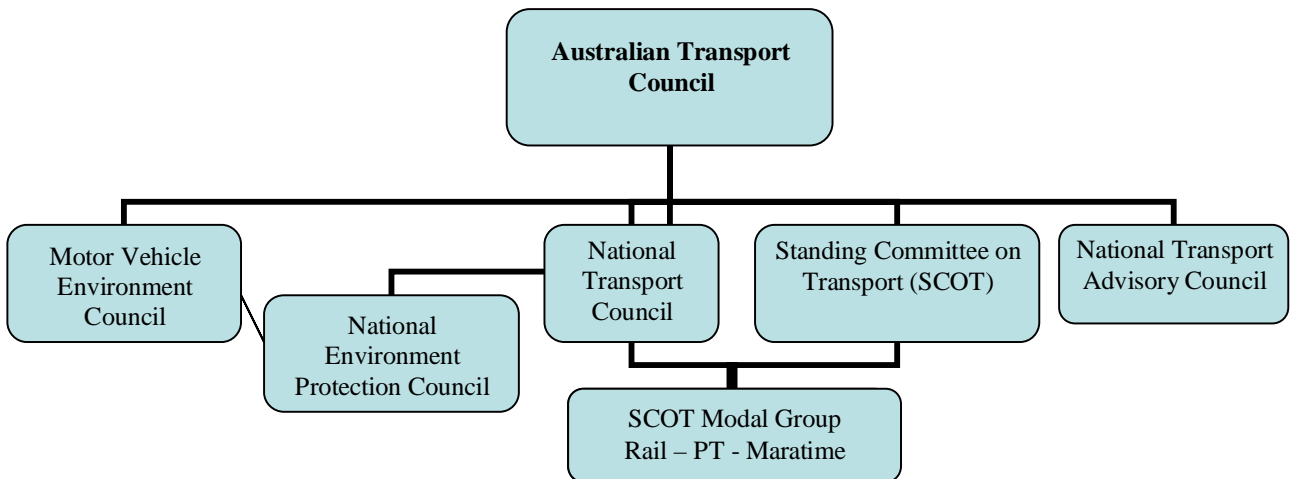
A new Inter-Governmental Agreement on Land Transport should be part of the process of change. The success of the National Road Transport Commission process has shown that such an approach can achieve support across the governmental and other stakeholder spectrum and engage the players in seeking solutions in line with the objectives of the process. Sustainability outcomes should figure very prominently in the objectives of the Agreement.

BIC believes that the Federal Government should kick-start this process of change by establishing a Sustainable Infrastructure Fund, to accelerate delivery of major projects that will enhance the sustainability of our cities (and regions). This fund would form part of Auslink or be a separate fund established with clear Sustainable Transport outcomes as its objective.

The National structures that have been established up until now have played little role or given priority to these issues.

In the context of the challenges that face Australia's cities in the future, access to employment, basic and essential services and an ageing population mean that a clear National Institutional framework within which public passenger transport and personal mobility issues are addressed in a co-ordinated and strategic manner is required.

**CURRENT NATIONAL  
INSTITUTIONAL ARRANGEMENTS FOR TRANSPORT**



It is proposed that a key strategic role is required within these existing structures in providing analysis and advice to Ministers re – a National Passenger Transport Strategy or ‘Moving People’ Strategy and co-ordinating activities of NTC and MVEC in these areas into a cogent and articulated Sustainable Cities policy for Australia.

The proposed links with NTAC and Auslink, make it common sense for NTAC to adopt a Sustainable Transport Role and be integral also in the proposed Sustainable Infrastructure Fund outlined in this submission.

The BIC, within this framework sees the development of a new Inter Governmental Agreement on Land Transport and the Establishment of a Sustainable Infrastructure Fund to assist in the funding of major Sustainable Transport projects within this framework. These are outlined in the BIC Submission.

## **Figure 4.6: Commonwealth Institutional Reform**

This would involve Prime Minister and Cabinet establishing a Sustainable Cities taskforce with its primary aim to identify and co-ordinate the cross portfolio policy programmes and initiatives that exist between the Departments of Transport, Health, Veterans Affairs, Indigenous affairs, Environment Australia and the Greenhouse Office (and any others) in relation to passenger transport activities. This is outlined in greater depth later in the document.

Currently within each of these portfolios, Ministers and Departments have responsibility for programmes and initiatives which are passenger transport based but not co-ordinated in any transport policy sense to a National Transport Strategy or plan.

The programmes that exist such as HACC (Health and Community Care), do provide important transport services, but these are being delivered in isolation of the Transport Portfolio and the broader transport outcomes being sought in the National interest.

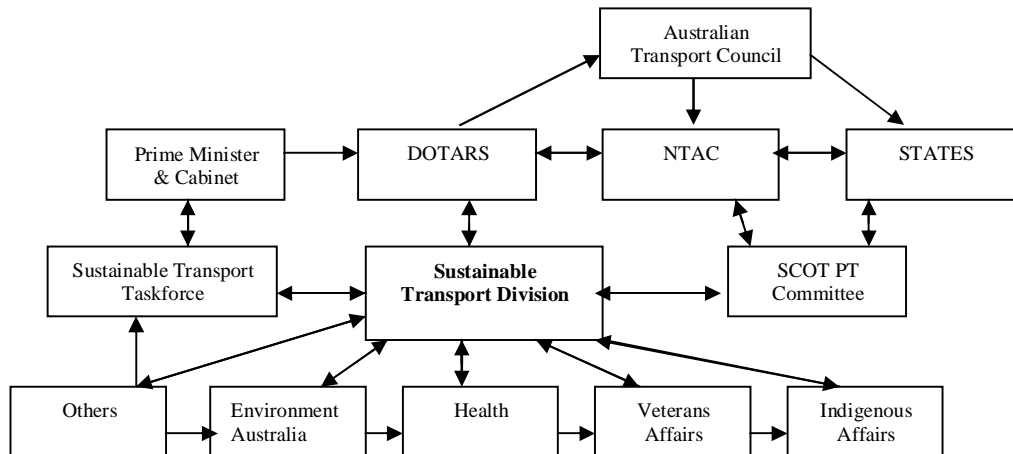
As part of this restructure, the Bus Industry Confederation sees the need for an appropriately well resourced Sustainable Transport Division within DOTARS. This Division would co-ordinate sustainable transport initiatives and be the conduit between other Commonwealth departments for passenger transport initiatives.

To this end BIC suggests that TravelSmart and related Travel Demand Management and vehicle related programs such as 'Alternative Fuel Conversion', emission testing initiatives etc should be delivered by the Sustainable Transport Division within DOTARS who have direct links through State Transport Jurisdictions and agencies, local Government and industry to more effectively communicate the messages to the key users of the road and passenger transport network.

A flow chart outlining a proposed organisational plan follows.



## PROPOSED FEDERAL GOVERNMENT INSTITUTIONAL FRAMEWORK



DOTARS Sustainable Transport Division would pick up programs from other Departments and portfolios that are related to;

- Travel Demand Management
- Vehicle Related eg: Alternative Fuel Conversion; Emission Testing

Prime Minister and Cabinet Sustainable Transport Taskforce will co-ordinate the cross departmental and portfolio involvement in passenger transport, the outcomes being sort and develop an agreed Federal 'Sustainable Transport' policy to be delivered through the Sustainable Transport Division of DOTARS.

## **Conclusions**

BIC contends that Australia's cities face major sustainability issues in terms of personal transport systems, particularly related to:

- the economic significance our cities and the importance of ensuring that high quality transport systems are provided to facilitate future economic growth in these cities, particularly with respect to reducing the adverse impacts of congestion, balanced with meeting environmental and social needs;
- ensuring that a decent basic level of access is available to all Australians, irrespective of where they live; and,
- dealing with the continuing problems associated with road trauma.

These sustainability issues all derive primarily from our high dependence on the private car.

The submission argues that improving sustainability requires Institutional Regulatory Reform and three key policy levers to be used:

### **Lever 1      Quality Service**

- improving service levels by public transport (and also encouraging travel by other low impact modes such as walking and cycling), to increase their use relative to the car, particularly in middle and outer suburban areas. Bus service levels should be the primary area for public transport service improvement because of the orientation of bus services to middle and outer urban areas;

### **Lever 2      Planning**

- improving the integration of land use and transport to reduce the need for travel and to facilitate greater ease of travel by low impact modes (public transport, walking and cycling); and,

### **Lever 3      Pricing**

- reforming road pricing, to make road users more accountable for the costs of their travel decisions, while providing a flow of funds to assist implementation of transport sustainability initiatives. Parking levies on spaces in congested areas are a handy starting point towards improved pricing.

Our submission suggests that the Victorian Government's target of 20% of motorized trips being made by public transport by 2020 is an appropriate target for Australian cities and that this outcome will only be achieved if all three policy levers are pointing in this direction and being delivered through an agreed Federal/State approach and agreed National Strategy. The benefits of achieving this target, however, are potentially huge, particularly given the scale and growth in congestion costs.

The submission argues for a major change in the nature of Federal-State land transport relationships, to assist in delivery of the desired change in policy and program direction.

Cities have been the focus of the submission but the key points in favour of a more integrated approach apply more broadly than just our cities. The submission supports major change because

- all levels of government have an interest in better sustainability outcomes in our cities
- the costs of not improving sustainability are so high and
- progress under current arrangements has been inadequate.

The submission proposes an integrated approach to policy and program priority determination on land use and transport development, beginning with Institutional reform of the Federal and National Regulatory frameworks in which passenger Transport is currently engaged. It proposes, in particular, a more integrated approach to transport development, pricing and funding, involving all levels of government and with involvement of other key stakeholders, including the broader community, working through central State-based agencies set up for the purpose. Pricing, investment and funding processes should be integrated through this mechanism, with the Federal Government being specific about its outcome objectives and using funding leverage as a means of ensuring that these objectives are incorporated as criteria to be met by the State-based land use and transport planning and decision-making process. Federal leadership is required to drive this change process, which will rely on effective partnerships across all levels of government, business and community stakeholders.

A new Inter-Governmental Agreement on Land Transport should be part of the process of change. The success of the National Road Transport Commission process has shown that such an approach can achieve support across the governmental and other stakeholder spectrum and engage the players in seeking solutions in line with the objectives of the process. Sustainability outcomes should figure very prominently in the objectives of the Agreement.

BIC believes that the Federal Government should kick-start this process of change by establishing a Sustainable Infrastructure Fund, to accelerate delivery of major projects that will enhance the sustainability of our cities (and regions).

**There is extensive evidence that the communities living in Australian cities will support these initiatives if they are engaged in their pursuit from an early stage.**

## **Some Particular Conclusions**

**BIC concludes that the current scale of road congestion costs in Australian cities and the growth in the size of these costs indicates that current city land transport systems are not sustainable in economic terms. Urgent policy attention should be devoted to ways of reducing these huge economic costs. Long term, congestion pricing is likely to be a central part of the solution to congestion costs, as one element in integrated urban transport and land use development strategies.**

**While urban traffic matters have traditionally been seen as matters for the State Government in Australia, the national economic need for dynamic urban economies, set alongside the high costs of congestion, air pollution and noise, means that these are now clearly matters of national economic concern. The contribution that urban public transport can make to reducing these problems, as one part of integrated urban transport/land use systems, means that urban public transport should become part of the scope of national land transport policy and programs.**

**BIC contends that all Australians have the right to basic transport choices and national land transport policy should ensure that this is treated on an equitable basis across our cities and regional areas. Improved public transport systems are increasingly being recognised as one element in improving such access options, with improved bus service levels in outer suburban areas being particularly important.**

**In planning for reduced road trauma in our cities, BIC believes that increased emphasis should be placed on the gains that are achievable from a greater role for public transport.**

**BIC concludes that substantially improved service frequency and coverage, enhanced service reliability and better marketing of public transport services will lead to a significant increase in public transport use in Australian cities.**

**BIC believes that, due to the extensive and spread out nature of our metropolitan areas, substantial improvement in the quality and quantity of bus services is a cost-effective public transport option for improving the sustainability of travel options.**

**BIC concludes that the availability of a sustainable funding source for improved public transport services is critical to achievement of more sustainable personal transport systems in Australian cities.**

**BIC concludes that increasing the relative compactness of Australian cities and increasing the relative degree of concentration of activities will lead to improved sustainability, by reducing the need for travel and encouraging a greater reliance on public transport, walking and cycling for travel. Integration of land use and transport planning and development is essential to delivering this outcome. Careful attention to urban design can also encourage more sustainable means of travel.**

**BIC concludes that approval of new subdivision, activity centre and shopping centre development plans should be dependent on adequate provision being made for public transport operation. State Planning Frameworks should mandate this requirement.**

**BIC concludes that the Australian Transport Council should direct the National Transport Commission to review all of Australia's existing transport taxes and charges and to make recommendations on changes that are needed to achieve a pricing framework that internalizes the external costs of road use.**

**BIC supports levies on parking spaces in congested areas as a useful step towards improved road transport pricing.**

**BIC believes that development of more sustainable personal transport systems for our cities must be a key focus of the implementation of a more integrated national transport system. The States should form the hub of the approach, because they have the primary responsibilities for service delivery on land use and transport. This means that a State Transport (Pricing and Funding Allocation) Agency (the Central Agency) should be established as its cornerstone, in each state. Other levels of government and the broader community also need to be involved, however, because they have important interests in the economic, social and environmental outcomes of the land use/transport process.**

## **Proposed Actions by the Commonwealth**

**BIC proposes that the Federal Government kick-start this process of change by establishing a Sustainable Infrastructure Fund within Auslink, or as an integral part of any transport infrastructure funding arrangements put in place to support investment in major infrastructure improvements that have a strong sustainability rationale (e.g. improved public transport systems). States seeking projects for funding support from this Fund should be required to meet certain conditions specified by the Commonwealth, namely that they: (1) comply with any specific sustainability objectives nominated by the Federal Government in proposing projects for funding support from the Infrastructure Fund; (2) demonstrate that any transport projects for which they are seeking funding support have emerged from an integrated land use/transport planning and development process; (3) are prepared to match dollar for dollar the Federal funds being sought for any project (without offsetting cuts in funding elsewhere); and (4) sign off on a New Inter-Governmental Agreement on Land Transport within twelve months of the announcement of the Infrastructure Fund.**

**BIC proposes that existing National Institutional Arrangements and existing Federal Departmental and portfolio arrangements be reviewed and made relevant to the development of a National Sustainable Cities policy**

**BIC proposes that the Commonwealth should initiate the development of a New Inter-Governmental Agreement on Land Transport, whose focus should be on the establishment of more sustainable land transport systems, utilising the three key policy/program levers of improved public transport services, better land use/transport integration and reformed land transport pricing systems.**

**BIC believes the Federal Government should provide a positive tax environment for public passenger services, providers and passengers.**

**BIC proposes that fuel taxation should be restructured by the Commonwealth Government, to better reflect the external costs of road use, including the environmental damage associated with use of different fuels. Emission control standards should continue to be tightened, in line with international best practice, and fuel quality should continue to be improved.**

**BIC believes the Federal Government should encourage the development of Bus Rapid Transit system initiatives in Australia, since they represent a cost effective means of addressing the urban transport problems of metropolitan Australia.**

**BIC proposes the Federal Government make all road funding programs such as Roads to Recovery conditional or inclusive of the requirement to include public passenger transport planning and infrastructure provision.**

**BIC proposes that there should be a regulatory requirement, implemented as part of a National Environment Protection Measure for air quality, that all vehicles undergo periodic testing of their emission performance, to ensure compliance. To help facilitate implementation of this program, the Federal Government should assist with funding of a core set of emissions testing facilities throughout the country, starting in the major capital cities where air quality concerns are greatest.**

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**ADDITIONAL INFORMATION HELD BY THE COMMITTEE**

**ATTACHMENT TO SUBMISSION NO. 97**

**ATTACHMENTS, APPENDICES AND PHOTOGRAPHS PROVIDED WITH SUBMISSIONS  
ARE HELD IN THE COMMITTEE OFFICE**