



**INDUSTRY
COMMISSION**

Urban Transport

Volume 1: Report

REPORT NO. 37

15 FEBRUARY 1994

Australian Government Publishing Service
Melbourne

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ISBN 0 644 33300 6

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Acknowledgments

The Commission is grateful for the cooperation and assistance of the many participants in this inquiry.

The Commissioners also record their appreciation of the application and commitment of the staff who assisted in the preparation of this report.



INDUSTRY COMMISSION

15 February 1994

The Honourable George Gear MP
Assistant Treasurer
Parliament House
CANBERRA ACT 2600

Dear Minister

In accordance with Section 7 of the *Industry Commission Act* 1989, we have pleasure in submitting to you the report on Urban Transport in Australia.

Yours sincerely

Keith J Horton-Stephens
Presiding Commissioner

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Commissioner

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ABBREVIATIONS

AAA	Australian Automobile Association
ABS	Australian Bureau of Statistics
ACTION	Australian Capital Territory Internal Omnibus Network
ALGA	Australian Local Government Association
ARF	Australian Road Federation
ARRB	Australian Road Research Board
ATIA	Australian Taxi Industry Association
BTCE	Bureau of Transport and Communications Economics
CBD	Central Business District
CGC	Commonwealth Grants Commission
CPI	Consumer Price Index
CPL	Cents Per Litre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	Community Service Obligation
CTC	Consumers Transport Council
CUTS	Coalition for Urban Transport Sanity
ENP	Electronic Number Plates
ERP	Electronic Road Pricing
ESD	Ecologically Sustainable Development
ETC	Electronic Toll Collection
GTE	Government Trading Enterprise
HACC	Home And Community Care
IVU	In-Vehicle-Unit
LCV	Light Commercial Vehicles
LRT	Light Rail Transit
WTFP	Multilateral Total Factor Productivity
MTT	Metropolitan Transport Trust

MULTI	Model of Urban Land use and Transport Interaction
NHS	National Housing Strategy
NRMA	National Road and Motorists' Association
NRTC	National Road Transport Commission
PPK	Per Passenger Kilometre
PSA	Prices Surveillance Authority
PTC	Public Transport Corporation (Victoria)
PTU	Public Transport Union
PTUA	Public Transport Users Association
RACV	Royal Automobile Club of Victoria
RDO	Rostered Day Off
RTA	Roads and Traffic Authority, New South Wales
SEPTS	South East (Queensland) Passenger Transport Study
SRA	State Rail Authority (New South Wales)
STA	New South Wales State Transit Authority
	State Transport Authority of South Australia
TFP	Total Factor Productivity
TPC	Trade Practices Commission
TWU	Transport Workers Union
Vicroads	Roads Corporation of Victoria

GLOSSARY

Access fee (or charge)	A fee paid by an operator of transport services for the use of infrastructure
Build-own-operate-transfer	An arrangement wherein a private firm builds, owns and operates infrastructure for a period of time and subsequently transfers the facility to government
Busway	A road provided for priority bus travel only
Community Service Obligation	A community service obligation arises when a government requires a public enterprise to carry out activities (relating to outputs and inputs) which it would not elect to do so on a commercial basis or which it would only do commercially at higher prices
Community transport	Transport services provided by local and/or voluntary organisations to meet specialised local transport needs Impediments on the use of a fixed resource or one with a capacity constraint (at least in the short run), imposed on users by the activity of other users
Contestability	The degree of ease with which firms can enter or leave a market. In a contestable market the threat of new entrants causes the incumbent firms to operate at levels approaching that expected in an competitive market
Cordon toll	Road tolls which cover all entry and exit points to a designated area such as the CBD
Cost-effective	The least cost approach of achieving a particular Goal
Economies of scale	Factors which cause the average cost of producing a commodity or service to fall as the firm produces more of it, for example, a firm enjoying economies of scale would less than double its costs if it doubled its output

Elasticity of demand	The percentage by which the quantity of a good demanded decreases in response to a one per cent increase in the price paid for the good while holding all other factors constant
Electronic Road Pricing	The use of electronic technology to automatically identify and charge individual vehicles for use of particular parts of the road system
Express lanes	Lanes designated for use by particular types of vehicles. (See high occupancy vehicle (HOV) lanes)
Exclusive franchise	The right to be the sole operator of urban transport services in a designated area for a specific period of time
Externalities	The impact of activities that confer costs or benefits on a third party. These effects may arise during production or consumption phases of an activity and may be of an environmental, social or financial nature
Farebox revenue	The revenue a public transport operator collects from fares only
Government Trading Enterprise	A publicly owned entity trading in a defined market, for example, a rail or bus authority
High occupancy vehicle lanes	Lanes designated for use by vehicles, including buses, carrying more than a certain number (usually two or three) of passengers. Sometimes called express or transit lanes
Light rail Transit	A modern tram system incorporating modern technology capable of on-street running, but segregated from road traffic as much as possible
Natural monopoly	Occurs when economies make it possible for one firm to supply the entire market more cheaply than a number of firms
O-Bahn	A bus system which is guided along a fixed track for part of its journey
Partial factor productivity	A measure of productivity, expressing one or more outputs relative to one particular input

Performance indicators	Quantitative and qualitative measures used to assist in determining how successfully objectives are being achieved. They may be measures of, say, workload, efficiency or effectiveness
Road tolls	Charges made for the use of particular roads
Sunk costs	The part of capital expenditure which is unrecoverable, due to limited alternative uses, if an enterprise is insolvent such as permanent ways in urban transport
Technical efficiency	An organisation or a system using its available resources in an optimal manner to maximise outputs
Total factor productivity	A measure of productivity, expressing total output relative to all inputs used
Transit lanes	See high occupancy vehicle (HOV) lanes

TERMS OF REFERENCE

I, JOHN SYDNEY DAWKINS, under Section 7 of the Industry Commission Act 1989 hereby:

1. refer urban transport to the Industry Commission for inquiry and report within fifteen months of receiving of this reference;
2. specify that the Commission is to report on institutional, regulatory and other arrangements affecting transport operations in Australia's major metropolitan areas and larger cities and towns which lead to inefficient resource use;
3. request that the Commission give priority to areas where greatest efficiency gains are in prospect and early action by Governments is practicable, and advise on potential implementation strategies and responsible agencies;
4. without limiting the scope of the reference specify that the Commission is to report on:
 - (a) the provision, pricing and subsidisation of, and access to, urban transport p services, including rail;
 - (b) the extent to which current patterns of, and policies on, urban settlement in Australia may affect the efficient use of urban transport and the role of transport infrastructure in shaping the nature and pace of urban development;
 - (c) the impact of Commonwealth, State, Territory and Local Government taxation and funding policies on the development of urban transport systems and traveller behaviour;
 - (d) work practices inhibiting the efficient provision of existing or alternative transport services;
 - (e) the gains to be achieved from adopting international best practice in the provision of urban transport infrastructure and services;
 - (f) factors adversely affecting private sector investment in urban transport
 - (g) the nature and scale of the external benefits urban areas and the implications for pricing policies and for assessing the performance of service providers; u an
 - (h) ways of achieving improved efficiency and integration within Australia's urban transport systems including private vehicle usage; and
 - (i) the social, environmental and economy-wide implications of current, and proposed changes to, urban transport services;
5. specify that the Commission is to have regard to the economic, social and environmental objectives that Governments identify for their urban transport policies; and
6. specify that the Commission is to take account of recent substantive studies.

John Dawkins
18 September 1992

* The Treasurer extended the reporting date to 15 February 1994.

OVERVIEW

The movement of people, goods and services is vital to city life.

Cities give their residents access to a wide range of economic, social and cultural activities. To enjoy them, people have to be able to move around the city or to have goods and services brought to them. For most people, urban travel and transport are costs to be minimised, rather than things to be enjoyed in their own right. Fast, efficient, reliable and safe urban transport systems are therefore vital.

Transport shapes cities and is shaped by them

Urban transport shapes urban land use. A good illustration of this was the rapid development of Melbourne during the 1880s on the heels of its expanding railway system. Land use, in turn, influences the nature and viability of urban transport systems. This may be seen in the historical evolution of most of the urban transport systems in Australia's cities where their extension and upgrading has followed increases in urbanisation. Because of the strong and reciprocal relationships between land use and transport in Australian cities, State and Territory governments have sought to integrate their strategic land use and transport planning.

Urban transport in Australia

Urban transport consists of private vehicles and public transport

In Australia, the urban transport systems consist of the road network, together with the private car and other motor vehicles that use them, the various scheduled public transport modes (for example, buses, rail, trams and ferries), taxis and, of course, paths for cycling and walking. While trains and trams run on their own tracks, buses and taxis share the road network with the private car, bicycles, freight trucks, delivery and service vehicles. The road network is entwined with the networks of bicycle paths, footpaths and walking tracks.

Private vehicles are used for 90% of urban trips...

Cars and other private motor vehicles are used for nearly 90 per cent of in Australian cities. Their use reflects preferences from a range of suburban lifestyles, as well as the increasingly complex, cross city travel which suburban living entails. This complexity is a function of many factors, but among the more significant are the growth in the proportion of two-income households and the shift of employment and retail activity to the suburbs. On the other hand, the use of the motor car, notably in the peak hour, is associated with a range of adverse environmental and social impacts which are of increasing and justifiable concern to the community.

...but public transport plays a key role.

Scheduled public transport is responsible for about ten per cent of all urban trips in Australia. It is better suited to journeys to or from city centres and the larger sub-centres, especially along the more densely populated and patronised corridors in the peak hour. These largely radial trips are dominated by the daily task of moving large numbers of children to school and city workers to and from their places of work. The importance of this task underlines the key role public transport plays in the life of our cities. Without it, Australia's larger cities would simply grind to a halt and the environmental amenity of all of our cities would suffer. Public transport also contributes to a more just society by providing essential mobility to many disadvantaged people who do not have or cannot use a motor car.

Individuals should meet all the costs of their travel...

In devising ways to handle the adverse social and environmental impacts of urban travel and the motor car, Australians do not need to deny themselves the substantial benefits they provide. The more sensible approach is to ensure that every individual pays all the costs that his or her travel imposes on the community, while adequately protecting the disadvantaged. These costs are not confined to the costs of building and maintaining the transport infrastructure and operating the transport services which use it. They also include the economic costs of road accidents, the impacts on the environment and the other consequences of urban travel which are not reflected in the fares or user charges imposed on travellers.

*...while not lessening
the efficiency of
moving goods and
services*

At the same time Australians need to take care not to lessen the efficiency of moving goods around and accessing services within our cities. Although the issues of urban freight and commercial distribution were not examined in depth in this inquiry, their contribution to business activity and employment in our cities is well recognised. All this underlines the value of having urban transport systems which are efficient, adaptable and responsive. Such attributes are essential to the quality of life for those who live in cities. They are also crucial to the international competitiveness of Australia's trade and commerce, and hence to its economic well being.

Can urban transport perform better?

*In many respects,
urban transport
performs well...*

The Commission's analysis of the performance of Australia's urban transport systems reveals much with which to be satisfied. Each day these systems move large numbers of people and goods around Australian cities in safety, in relative comfort and with a high degree of certainty. Virtually all individuals and businesses are able to fulfil all of their basic travel requirements and most do a lot better than that.

*...but there is scope
for improvement*

This analysis also points to a number of areas where there is scope to improve the performance of urban transport in Australia.

*Transport systems are
generally inflexible.*

Urban transport systems generally lack the to cope with changing travel patterns and with social and technological changes. With the exception of the traffic code and other public safety regulation, the use of private motor vehicles (cars, trucks, delivery vehicles, etc) is unconstrained by government regulation.

In contrast, virtually every aspect of public transport is regulated by government. Regulation governs who will provide the services, the routes on which the services will run, the type and size of vehicle to be used, the frequency and timing of the services and the fares to be charged. This regulatory web may well protect individual operators but is at the expense of public transport's collective ability to meet its greatest competition, the private motor car.

Service delivery is often inefficient and short on innovation

Service delivery in public transport is often inefficient and short on innovation. There is little direct competition in public transport due to the practice of granting what are effectively monopoly rights over particular routes in perpetuity. Regulation has accelerated the loss of public transport's share of the urban travel market to the private car.

Substantial efficiencies can be made by opening up the rights to provide public transport to competition from other operators, who can also offer more effective competition with the private motor car. Such savings have been made in many countries, including Canada, Denmark, New Zealand, Sweden, the United Kingdom, and the United States. Similar policy changes are under consideration in a number of other countries, for example Germany and Switzerland.

In Australia, State and Territory Governments have begun to open up their public transport to greater competition and are starting to see the benefits in lower operating costs.

The performance of government transport agencies in the delivery of public transport services compares unfavourably with international best practice and there is scope for greater efficiency in the provision and management of transport infrastructure.

Service quality can be improved

While the data are generally poor, the available evidence suggests that **service quality** in urban transport leaves room for considerable improvement in many areas. Users complain that public transport services are too often unreliable, infrequent, uncomfortable and insecure. Where service is poor or non-existent, regulation often impedes taxis or community transport from filling the gaps. For example, a community mini-bus service in Pakenham (on the south-eastern fringe of Melbourne) is prevented from advertising or charging fares even though there is no local bus service.

Access for the disadvantaged can be enhanced.

Measures to improve the **accessibility** to urban transport for the disadvantaged in the community are not well targeted. The substantial subsidies to public transport do not always help the transport disadvantaged as many of the beneficiaries are the better-off members of the community. Moreover, most people with disabilities cannot use scheduled public transport and therefore do not benefit from this assistance.

Travel has major impacts on the environment.

Urban transport has major **environmental impacts**, especially in terms of local air quality, noise and risks to life and limb, with motor vehicles the largest contributor. There have been significant reductions in some emissions, for instance carbon monoxide and ozone in Sydney and Melbourne. In other cases, the situation appears to have deteriorated (for example, ozone in Perth) or to be unchanged (for example, oxides of nitrogen). At present, the main air quality problems are in Sydney and Melbourne but as other cities grow, they also could encounter similar problems, particularly as road congestion builds up.

Fares and user charges do not reflect the economic costs.

Fares and user charges do not reflect the economic costs of provision to the individual. Although motorists make significant financial contributions by way of taxes, fees and charges, they do not pay for their actual use of urban roads. Accordingly, road congestion in Sydney and Melbourne is estimated to cost the economy some \$4 billion a year and this falls disproportionately on trade and commerce. Fare schedules for public transport are largely invariant with distance and time of travel, and so do not reflect the costs of service provision, even ignoring the costs of constructing the track.

The impacts on taxpayers and public sector budgets are substantial.

The drain on **public sector budgets** and the **cost taxpayers** from building and operating urban transport systems are both high. Each year, the public sector spends over \$2 billion building and maintaining urban roads and up to \$3 billion subsidising public transport services. Together, these amount to more than \$900 a year for each household in Australia. While governments levy a range of taxes, fees and charges on drivers, their vehicles and the fuel they use, the revenue obtained (over \$9 billion) is unrelated to public expenditure on transport, let alone urban transport.

The benefits of reform are considerable.

The obverse of these problems is the substantial benefits that would flow from fixing them. Box 1 outlines the broad nature and level of the benefits that can be captured by transforming Australia's urban transport systems into the efficient, dynamic and innovative systems which our cities and our economy require.

Box 1: The promise of reform

- The reduction in traffic congestion as a result of road pricing will lower travel times and local air pollution.
- The savings from reducing road congestion, which costs up to \$4 billion a year in Sydney and Melbourne alone, will especially benefit business activity and international competitiveness.
- Improved management of urban transport infrastructure will bring savings to taxpayers in the costs of building and maintenance.
- Better quality and a wider range of services will be available to public transport users, especially in those areas which are poorly serviced at present.
- The transport disadvantaged, especially people with disabilities, will enjoy better access to public transport.
- There will be savings in the cost of operating public transport, for example, for buses about \$250 million a year (or 40 cents per passenger journey).
- Taxi fares will fall by up to \$2 a trip on average, saving users some \$300 million a year.
- Land use and transport planning will be assisted by fares and user charges which better reflect the economic costs of all urban transport modes.

Governments play many roles in urban transport but some are poorly executed.

What should governments do?

Australia's urban transport systems are largely creatures of its governments. Between them, the three levels of government play many roles which affect the performance of our urban transport systems. In particular, they:

- plan and regulate land use;
- plan the urban transport infrastructure;
- build and manage the transport infrastructure;
- regulate the operators of public transport services;
- operate most of the scheduled public transport services;
- coordinate public transport services within the
- larger urban areas; and
- take steps to make transport more accessible to the disadvantaged.

Solutions need to be based on certain principles.

The Commission found flaws in the manner of the execution of some of these roles, even where there is a sound reason for government to be involved. The correction of these flaws lies in governments more clearly specifying their policy aims and adopting more efficient ways to achieve them. The following principles should underlie the selection of specific solutions.

Integrate land use and transport planning.

First governments need to integrate effectively the planning of land use with the planning of transport infrastructure in Australian cities. The planning decisions need to be supported by the application of appropriate land use regulation.

Seek greater efficiency and innovation.

Second, opening up the provision of both public transport services and transport infrastructure to new players is essential to greater efficiency and innovation in their delivery. Government can achieve its social, environmental and public service policy objectives without itself being the operator or coordinator of public transport services in a city, or the provider of its transport infrastructure.

User charges should reflect costs.

Third, fares and charges for the use of urban transport infrastructure and services should reflect all the economic costs imposed by individual use, including the costs imposed on third parties and impacts on the environment, accidents, and congestion.

Each role of government conducted by a specialised agency.

Fourth, each of the roles of government should be separated and preferably conducted by a specialised agency. This facilitates setting clear objectives for agencies, selecting the most appropriate means for attaining them and establishing clearer lines of accountability for agency performance.

Fifth, as far as possible, decisions on the development and management of public transport services and transport infrastructure should be made by those closest to the market.

Planning and funding at the lowest practical tier of government.

Finally, the public sector's role in planning and funding urban transport systems is best conducted at the lowest level of government which is practicable. It would be impractical to make local government, as presently constituted, responsible for planning an entire transport network, particularly in the larger cities. Nevertheless, local government does have an important role to play in planning land use, transport infrastructure and public transport services.

The Commission's reform package

These reform principles are being implemented...

In the last few years, governments in Australia have made progress in implementing many of the above principles. Progress has been most striking in New South Wales and Victoria. Plans to implement policy changes are well advanced in Queensland, South Australia and Western Australia.

...but too slowly.

But the progress has not been as rapid as in other areas of transport in Australia, such as long distance road transport and domestic aviation, and in other sectors such as finance and telecommunications. Much remains to be done to bring urban transport up to the standards the community is looking for.

A flexible approach is essential

There is no 'quick fix' to the problems facing urban transport, in large measure because of the complexities of modern urban transport systems. As a result, many of the Commission's recommendations are interdependent but most can be progressed in isolation from others. Although coordinated implementation offers enhanced benefits, a constraint on change in one area should not delay action in another.

The key is to reform the operating environment for urban transport...

Whilst presented as a package, some recommendations are clearly more pressing than others. The greatest emphasis should be on reforming the environment within which services and infrastructure are delivered. On this basis, reform should seek to:

- introduce constructive competition in public transport services;
- reform the agencies involved in transport infrastructure and public transport;
- price urban transport so as to encourage the more efficient use of both roads and urban public transport;
- promote better environmental outcomes associated with urban travel;
- better target and deliver measures to make urban transport more accessible to the disadvantaged; and
- promote better decisions on investments in transport systems.

Introducing constructive competition

by introducing competition in public transport,...

The need for competition in the delivery of urban public transport services is most pressing. Services should be opened to greater competition both within and between transport modes. Every operator, whether publicly or privately owned, should be subject to regular competition. This is the most effective way of securing the lowest possible operating costs and the service improvements that people value most.

without prejudicing safety or coordination.

The introduction of greater competition in the delivery public transport services should not be at the expense of either passenger safety, coordinated services or system-wide ticketing in public transport. Regulations which set minimum *safety standards* for public transport vehicles and their operators, do not need to be changed as a result of the Commission's recommendations.

Where the benefits justify it, governments need to take steps to ensure that *coordinated services and system wide ticketing* are provided in scheduled public transport. There are a variety for governments to so. They range from requiring the operators undertake these functions collectively (as happens in some other countries) to their being performed by an agency of the government. The former has the advantage of having these tasks undertaken by those who have the most to gain from doing it right and the most to lose if they do not.

Each mode needs a different recipe.

Individual approaches are needed to introduce competition for the different modes that take into account the characteristics and circumstances of each.

Tendering of bus franchises.

In the case of *urban buses*, the Commission recommends the tendering of a series of service franchises for each city. The franchises would be automatically re-tendered when they end. Once experience has been gained with franchising, a case by-case consideration should be given to whether unrestricted access to any service area would be beneficial. This consideration would be aided by conducting demonstration projects of open access to selected service areas for specific periods.

The areas covered by government-owned bus operators should be divided into a series of service areas, where appropriate, and the service areas progressively franchised. While the government owned operators should be free to bid for the franchises, they should first be divided into commercially autonomous units, say, on a depot by depot basis.

Separating railway infrastructure and services.

This division should be done as early as possible in the franchising process so that the government operators are given a reasonable time to make the efficiency improvements necessary for them to compete with the private sector for the franchises of their former service areas.

Railway infrastructure and services should be separated into commercially autonomous business units. Where appropriate, urban rail networks should be divided into geographically-based business units. Looking ahead, State Governments should be open to other options, including the creation of separate infrastructure authorities and the franchising of rail services. Seeking expressions of interest from potential operators could be a way of generating information about the costs and benefits of these options.

Increasing taxi licences...

State and Territory Governments should progressively eliminate all restrictions on the numbers of **taxi** licences. They should do so by selling new licences each year by public tender, with financial compensation to existing licence holders if necessary. Taxi fares should be deregulated, but taxis operators required to notify the maximum fares (and any changes to them) to government.

And opening-up community transport.

Community transport operators should not be restricted to providing feeder services to other transport operators or to servicing those with special needs.

With the liberalisation of access, some transport operators will face increased competition. But **all public transport operators** will have opportunities to compete for the larger urban travel market which will have been created by reform.

*Separate service
delivery from other
public administration...*

Institutional reform

The *separation of the roles of government* in urban transport would enhance the achievement of the many public objectives of urban transport policy. This implies dividing responsibility for delivery of public transport services from other aspects of government administration in urban transport, including economic and safety regulation, and the administration of service franchises.

*and corporatise the
agencies.*

Another priority is the *corporatisation of public sector transport agencies*.

Efficiency would be enhanced if government-owned public transport operators were, as far as possible, subject to the same incentives and disciplines as privately owned ones. This can be achieved by giving the government operators clear commercial objectives, making them fully accountable for their overall performance but allowing them autonomy in the conduct of their day-to-day operations.

State and Territory road agencies should be predominantly responsible for planning and managing the road infrastructure. Where these agencies or local government maintain a capacity to build or maintain road works themselves, the allocation of such work should be the subject of open, competitive tender.

Better pricing

The key to reforming pricing in urban transport involves progressively aligning fares and user charges with the economic costs of individual use of urban transport infrastructure and services.

*Large gains from
rationing road use...*

While *road use* is not rationed, the costs of congestion suggest there are large efficiency gains from pricing the actual use of roads. Ideally, user charges should be tailored to the costs associated with individual use, including pavement damage, congestion, road accidents and any environmental damage. Since most urban freight is moved by road, a rational system of road pricing should benefit trade and commerce, and hence the community.

can be captured by progressively introducing electronic road pricing...

Electronic technologies to price road space are technically feasible and able to protect the privacy of the individual motorist. The Commission favours their progressive introduction. Moves to do so could commence with the introduction of tolls on certain new or upgraded urban arterial roads, bridges and tunnels to reduce congestion. Wherever practicable, tolls should be progressively extended and differentiated by time of travel, so as to control access to congested urban areas, and converted to electronic collection.

Community acceptance of road user charging would be enhanced were the total revenue collected from motorists not to increase. Rather the objective should be to shift more of the revenue burden towards those users who impose the greatest economic costs on the community.

in combination with parking and fuel taxes.

Whether direct road pricing is implemented or not (or in the interim until it is), a package of restrictions, and taxes on car parking, differentiated franchise fees on fuel, and traffic regulation offers a practical, second best solution to the issues of traffic management and congestion. Such a package is best implemented on an area-wide basis. In the case of fuel franchise fees, the Commission recommends that State governments consider introducing a differential on fuel sold in the major urban regions compared with the rest of the State. While subsidisation of public transport is inefficient in reducing road congestion on its own, measures to promote a more efficient use of roads will improve the appeal of public transport and reduce the adverse environmental impacts from urban transport.

Recast public transport fares progressively...

Public transport fare schedules should be restructured both to create a greater differential between peak and off-peak fares and to increase with the distance travelled. Improvements in the quality of services and reductions in operating costs are essential throughout the country and should accompany, if not precede, any fare

While improving services and protecting the disadvantaged.

restructuring. General fare increases, which may result from fare restructuring and moves to lift cost recovery, would best be phased in over several years. The approaches recommended on charging for actual road use will also help to counter the continuing loss of patronage from public transport.

Responsibility for meeting social justice and equity objectives should remain with government and not be devolved to their public transport agencies. If governments require variations from what a public transport operator judges to be commercially justified, they should be handled through a formal community service obligation (CSO) contract with the appropriate operator which specifies the nature of the CSO to be provided and the level of government funding to be paid in exchange for it.

A similar approach should be adopted to address any adverse equity or social consequences associated with road user charging. On equity grounds, concessional road user charges should be given to the transport disadvantaged in much the same way as they are for public transport.

A cleaner environment

There is much scope to reduce the adverse environmental impacts...

Both private and public transport have the scope to reduce the environmental impacts associated with urban travel. In the case of public transport, the scope to do so is considerable.

There is a lack of comprehensive data on the level of vehicular emissions associated with urban transport and their impact on air quality in Australian cities. Accordingly their economic costs are unclear and more work remains to be done on them.

In the meantime, governments will have to make difficult judgements about the likely extent of these economic costs. This uncertainty underlines the importance of appropriate caution in designing and implementing measures to ameliorate the adverse environmental impact of urban transport. Otherwise they may impose costs greater than the expected value of any reductions which they achieve.

*by emission standards
for new cars,...*

Emission standards for new motor vehicles are playing a role in ameliorating air pollution in Australian cities and should continue to do so. The control of these emissions will increasingly take effect as older cars are replaced by newer, cleaner vehicles. A system of emission testing of motor vehicles, with penalties for 'dirty' vehicles, should be introduced in the larger cities with the most severe air quality problems. The emission standards for such tests should vary with the age and type of vehicle.

*emission testing for
older vehicles...*

*and electronic road
pricing.*

Reforms in other areas will indirectly enhance environmental quality. Higher priority to pedestrians and cyclists in transport planning will help. Road user charges will promote car pooling, help to reduce unnecessary travel and encourage more travel by public transport.

Better access for the transport disadvantaged

*Helping the
disadvantaged is a
matter of social
justice...*

As a matter of social justice, the community requires the provision of assistance to those who are judged to be disadvantaged in their access to transport services. The incremental costs of this assistance should be funded directly by taxpayers from general revenue, rather than from other transport users. This will help governments in setting the priorities for such community service obligations and in ensuring that they are being met efficiently.

*Which should
encompass all the
options for improving
access.*

Assistance to the transport disadvantaged has traditionally taken the form of non-commercial services and fare concessions provided by public transport and is often confined to particular operators. In selecting the means of providing assistance to the transport disadvantaged, governments should recognise the existence of alternatives to both the traditional operators and to conventional public transport.

The disadvantaged will gain from the Commission's reforms.

People who are disadvantaged, especially those with disabilities, would be major beneficiaries from the Commission's recommendations. Among the more important changes for them are the taxi reforms and the greater scope for the development of community and scheduled public transport services that should flow from reduced regulation in these areas. On the other hand, there may be specific inequities associated with individual recommendations (for example, the introduction of road pricing). In such cases, governments should introduce specific remedies (for example, concessional road user charges).

Better investment decisions

Urban transport projects should be fully evaluated...

Major investments by government authorities in urban transport services or infrastructure (including roads) should be subject to prior economic evaluation with a full assessment of the environmental impacts. Evaluations should examine all feasible alternatives to the investment project, including other transport modes such as bicycles and traffic management options. The evaluations should be made public.

as should their funding possibilities.

Value capture and contributions from non-users who benefit from urban transport, can be useful to help fund urban transport infrastructure. To realise its potential benefits, value capture has to be negotiated.

The phasing of reform

In its terms of reference, the Commission was asked to report on implementation strategies for introducing policy reform.

Change must be phased in for practical and equity reasons...

Decisions about the pace and sequence of reform need to recognise the practicalities involved. As far as possible, the approach should be to minimise the costs of transition, while maintaining a degree of stability. Considerations of equity and social justice reinforce the need for phased, rather than immediate, change. These considerations also demand that, as far as possible, the community ameliorate any adverse consequences of change on the those who are disadvantaged.

but without neglecting urgency.

These practicalities should not overshadow the urgency of commencing the process of reform. The extent of the benefits and the unsustainability of the existing arrangements all point to the need to start the process without delay. The indicative timing proposed by the Commission is neither precise nor rigid, but should be interpreted as guidance on the broad order in which the changes recommended might best be tackled.

most pressing is the staged introduction of competition...

Most pressing is the introduction of competition in the rights to provide public transport services. This should begin by commencing processes to tender increasing numbers of taxi licences and franchise service areas for buses. It should be extended subsequently to the provision of tram and train services as opportunities to do so arise.

The existing government-owned public transport operators should be divided into autonomous units and corporatised as soon as possible. Functions associated with the administration and regulation of urban transport should be assigned to other agencies of the government. The operators should be given a reasonable time to make operating efficiencies before franchises for all their service areas have been put out to tender.

with steps to ensure service are coordinated.

As and where this is considered to be necessary, governments should take steps to ensure that machinery is put in place to coordinate services among individual public transport operators and to provide system-wide ticketing.

The changes recommended would help to move people, goods and services around Australia's cities more cheaply, reliably and in safety.

MAIN FINDINGS AND RECOMMENDATIONS

How well do our urban transport systems perform?

- The Commission's analysis highlights the significance of transport for the life and efficient working of Australia's cities:
 - transport gives people access to a wide range of economic, social and cultural activities;
 - the different modes of transport allow people to choose how they go to work, school, shops and so on;
 - technological change and other improvements to transport have increased the opportunities and choices that are available;
 - although private cars dominate urban travel, public transport, cycling, walking, taxis and community transport have significant roles; and
 - efficient urban freight movements are essential for trade and commerce.

[Chapters A1 and A2]

- The Commission finds the main problems with Australia's urban transport systems are that:
 - the cost to taxpayers of urban public transport is high;
 - road congestion is a growing problem in the larger cities;
 - the delivery of public transport services and road infrastructure is often inefficient;
 - the quality of public transport is often poor, particularly in terms of reliability and frequency. Criticisms from participants also included unattractiveness, lack of safety, and inconvenience;
 - while some steps have been taken to improve management and work practices, public transport agencies have a considerable way to go to achieve best practice and there is room for improvement in the performance of road agencies;
 - urban transport has major environmental impacts, especially on local air quality, noise and risks to life and limb; and

-
- measures to improve accessibility to urban transport by the disadvantaged in the community are not well targeted.

[Chapters A6 and A11]

Introducing constructive competition

- Urban transport services should be determined by what people need rather than what transport agencies decide to provide.
- The need to inject competition between service providers is a high priority. It will allow the most efficient mix of transport services to develop in response to changing travel demands - securing service improvements, innovation and lower costs. Regulatory and subsidy arrangements should ensure that every operator, both public and private, is subject to competition or the threat of competition.
- Until full competition is achieved, any preference given to particular modes should be publicly disclosed.
- The introduction of greater competition in the delivery of public transport services should not be at the expense of passenger safety, nor of the effective coordination of services.

[Chapters A6 and A11]

Buses

- The fundamental ingredient to improving the performance of the Australian urban bus industry is to open it up to competition or the threat of competition.
- State and Territory Governments should (continue to) introduce progressively a system of exclusive franchises to operate bus services in urban areas. Such franchises should be:
 - up to seven years in duration, allocated via open public tender and automatically retendered at the end of their term;
 - open to all prospective operators without restriction with no preference for any franchisee at renewal time; and
 - awarded under a tender evaluation process in which any underlying weighting of individual service variables is transparent.
- Competition needs to be extended to all urban bus service markets as existing agreements expire.

-
- Each government owned bus operator should be separated into commercially autonomous units, say, on a depot by depot basis.
 - After the initial experience with exclusive franchising has been evaluated, consideration should be given to the introduction of open access to all bus services by any operator.

[Chapters A6 and B3]

Rail

- Options for structural reform of urban rail include:
 - separation of urban passenger services from other rail traffic;
 - separation of urban passenger operations into geographically-based units;
 - separation of services from infrastructure; and
 - franchising rail services.

As a minimum, rail infrastructure and different types of rail traffic should be operated by commercially autonomous business units. Where appropriate, existing urban rail networks should be divided into geographically-based business units.

Looking ahead, State Governments should be open to other options for reforming urban rail in ways that promote greater efficiency, including the creation of a separate infrastructure authority, and the franchising of rail services. Seeking expressions of interest from potential operators could be a way of generating information about the benefits and costs of pursuing these options.

[Chapters A6 and B1]

Taxis

- Major benefits would accrue from introducing open entry into the taxi industry over a number of years, while retaining all aspects of public safety regulation. State and Territory Governments should sell new licences by public tender every twelve months. Two variations are suggested: the first involves distribution of the sale proceeds in equal shares to existing licence holders; the second does not provide such financial compensation but has fewer new licences released each year. Under either variation, taxi fares should be deregulated immediately.

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- If State and Territory Governments are unwilling to adopt the above recommendation at this time, they should consider three other options:
 - separating the taxi rank and phone booking segments of the market;
 - tying taxi licence numbers to performance requirements; and
 - capping the present value of taxi licences.

[Chapters A6 and B4]

Road use

- Care should be taken not to lessen the efficiency of freight movements in the development of any policies affecting urban transport. Since most urban freight is moved by road, more rational road pricing and investment should benefit trade and commerce and hence the wider community.
- An incremental approach should be adopted to the introduction of area wide electronic road pricing. This would start in Sydney and Melbourne with tolls (preferably electronic) on certain new or upgraded urban arterial roads, bridges and tunnels, so as to reduce congestion and to familiarise the public with electronic collection. In addition, wherever practicable, tolls should be extended to existing arterial roads, and differentiated by time of travel, so as to create controlled access to congested areas.
- The tolls and other such charges should not be used to raise additional revenue from motorists in total, but rather shift the burden towards those who impose the greatest costs. A policy of revenue neutrality should be adopted, by offsetting the costs of user charges with equivalent reductions in either the Commonwealth fuel excise or State franchise fees on fuel. The Commission recognises that this policy will have adverse impacts on some of the transport disadvantaged and recommends the introduction of appropriate concessional arrangements.
- If electronic road pricing is not implemented (or in the interim until it is), parking restrictions and taxes offer some practical solutions to congestion control. They should be part of any sensible demand management strategy and are best implemented on a city-wide basis. State Governments should also consider differentiating their fuel franchise fees between the major urban areas and the rest of the state.
- Subsidisation of public transport is an inefficient way of reducing road congestion

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- There should be a thorough review of third party insurance arrangements and their role in making the full costs of accidents part of the internalised costs of road users.

[Chapter A9 and A10]

Other modes

- The management of *light rail and tram services* should be separated into commercially autonomous business units within corporatised transport agencies.
- The Commission endorses the elimination of two-person *tram* operation.

[Chapter B2]

- For *community transport*:

- State and Territory transport licensing arrangements should not be used to restrict its provision and development;
- services should not be restricted to people with special needs or to feeder services;
- where there are no existing bus or rail services, community transport operators should be allowed to establish new services and to charge fares; and
- greater cooperation between local councils, welfare groups and bus and taxi operators should be encouraged, for example, through the appointment of a community transport officer or broker.

[Chapter B5]

- The potential role of *cycling* should be given full consideration in transport and urban planning.

[Chapter B6]

Institutional reform

The efficiency of transport agencies would be enhanced if, as far as possible consistent with their functions, they were exposed to the same incentives, rules and regulations as private enterprise. This can be achieved through the process of corporatisation.

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- The following initiatives be implemented for all urban transport Government Trading Enterprises without delay:
 - they be constituted as statutory corporations, which are separate from the departmental structure of government;
 - regulatory functions be removed from their responsibility;
 - board members be appointed on the basis of individual experience, knowledge and skill, and not as representatives of interest groups;
 - boards be accountable to the parliament through the relevant minister(s);
 - all directions issued by government be in writing, and tabled in the parliament;
 - boards prepare corporate plans for approval by the relevant Minister(s). Each corporate plan should contain appropriate financial and non-financial targets, including target rates of return on assets;
 - governments clearly specify and make public the community service obligations they expect the enterprises to satisfy. Their costs should be funded by direct budgetary payment;
 - they be liable for all taxes and government charges (or their equivalents);
 - they be made subject to the Trade Practices Act and no longer be excluded from the coverage of the Prices Surveillance Act; and
 - they be free to determine their terms and conditions of employment, not subject to the constraints of government employment policies and practices.
 - State and Territory road agencies should be predominantly responsible for planning and managing road infrastructure. Where these agencies of local government maintain a capacity to build or maintain road works themselves, the allocation of such work should be the subject of open, competitive tender.

[Chapter A5]

More efficient pricing

- Transport prices should be restructured so that they more closely reflect the cost of providing services. In particular:

-
- there should be a greater differential between peak and off-peak prices; and
 - prices should increase with distance travelled in such a way as to reflect the incremental costs associated with the additional distance.
- In setting access fees for use of infrastructure, all the incremental costs of infrastructure provision which are associated with an individual users should be charged to them, and users should make some contribution towards the remaining costs of infrastructure. The contribution to the remaining costs should be negotiated between the infrastructure provider and the user, subject to fair access principles.
 - Priority should be given to restructuring public transport fares so that they more closely reflect the costs of providing individual services, to improving service quality, and reducing costs. Any fare increases should be accompanied, if not preceded, by improvements in service quality and should be phased in over several years.

[Chapter A7]

Better investment decisions

- For major infrastructure investments, cost-benefit analysis should be undertaken and made public. This would facilitate community debate about the relative merits of different investment options. Investment analysis should include all feasible options and the effects on third parties.
- Value capture, or contributions from non-users who benefit from urban transport, can be useful to help fund transport infrastructure. To realise its potential benefits, value capture has to be negotiated.

[Chapter A7]

A cleaner environment

- There have been significant reductions in the levels of emissions from motor vehicles in Australia's cities. The main problems of local air pollution from motor vehicles are in Sydney and Melbourne. In the absence of corrective measures, as other cities grow in size, they also could encounter decreased air quality.
- The economic costs of pollution in Australian cities remain unclear. There is a need for further careful assessment of the costs of pollution.

-
- Measures to alleviate pollution need to be carefully targeted, so as to minimise the costs imposed on those responsible for causing the problem.
 - Emission standards for vehicles are playing a role in ameliorating pollution. They should continue to do so. Standards should continue to be based as far as possible on performance outcomes rather than technical design characteristics of equipment.
 - The control of emissions resulting from these measures will increasingly take effect as the old car fleet in our cities is eventually replaced by newer vehicles. Reductions in motor vehicle tariffs should assist this process.
 - A system of random emission tests, with fines or loss of registration for 'dirty' vehicles, should be implemented in Australia's larger cities, where pollution problems are most severe. Alternatively periodic testing of vehicles, say every five years, could be required for registration. The emission standards for such testing should be set according to the age, type and model of vehicle.
 - The Commission does not favour subsidisation of public transport as a cost-effective means of reducing the environmental impacts associated with transport. Wherever possible, environmental impacts should be addressed by well targeted policies.

[Chapter A10]

Better targeted social policies

The cost of meeting various social objectives should be made explicit by identifying the costs of providing concessions to particular groups and the incremental costs of providing non-commercial services.

- Concession fares should be set in a way which gives the same proportional reduction in fares, of say 50 per cent, for both peak and off-peak concession travel.
- Transport concessions for the elderly should be targeted at those in need and not provided universally.
- To improve accountability and ensure that appropriate allocations are made among expenditure items within the education budget, subsidies for the travel of school children should be funded explicitly from the education budget.

-
- Transport concessions should be available throughout the city to people who satisfy eligibility criteria, and not restricted to those who have access to particular public transport providers.
 - There is scope to introduce some competition into the supply of subsidised services. For example, contracts could be let to supply after-hour services, or services to particular locations which would be open to public buses, private buses, taxis and rail services. This process would replace many mode-specific CSO payments.
 - Every effort should be made to eliminate quickly all unnecessary restrictions and regulations on importing modified vehicles into Australia for use by people with disabilities.

[Chapter A8]

Intergovernmental relations

- Urban transport systems are best planned at the lowest practicable level of government. However it would be impractical to make local government, as it is presently constituted, responsible for planning an entire urban transport network, particularly in the larger cities. Local government does have an important role to play in planning land use, transport infrastructure and public transport services.
- Whatever the urban transport responsibilities of local government, they will have little effect without adequate funding. The Commission appreciates that this point impinges on the financial responsibilities of the three levels of government in Australia, a matter which goes beyond urban transport. Yet it needs to be resolved if urban transport is to be delivered more efficiently in our cities.
- The Industry Commission considers that the question of continuing to include the urban transit category in the Commonwealth Grant Commission processes is complex and warrants further consideration as to both principle and method, particularly in light of the increasing commercialisation of Australia's urban transport agencies. However, the Commission appreciates that such an assessment would need to take place in the context of a broader review of CGC processes.

[Chapter A4]

THE INQUIRY

The efficiency of our urban transport systems has a large impact on the daily lives of most Australians, of whom around 85 per cent live and work in urban areas. Every day, millions of individual journeys are undertaken within our cities. We use our transport systems to go to work, to go shopping, to engage in leisure pursuits, and for many other day-to-day activities, as well as for supplies of goods and services. More efficient and better coordinated transport systems within our urban areas permit better access to jobs and to education and recreational opportunities. They also make for quicker and more efficient movement of freight with benefits to industry and to international competitiveness. In short, an efficient transport system is essential for a city to function effectively as an economic and social system.

In recent years there has been growing public debate on the efficiency of urban transport systems. There is concern about:

- escalating public transport deficits and their contribution to State's debt;
- patterns of urban development (for example, suburban sprawl) which some see as inefficient and unsustainable;
- lack of adequate access to transport for many people in the community;
- the contribution of urban transport systems to environmental problems (for example, noise and air pollution);
- traffic congestion and road accidents; the reliability, safety, and comfort of public transport; and
- impediments to the growth of efficient and flexible transport options.

The terms of reference for this inquiry were prepared in consultation with State and Territory Governments and are reproduced in full on page xviii. The Commission was asked to report on factors affecting transport operations in Australia's major metropolitan areas and larger cities and towns which lead to inefficient resource use. Priority is to be given to areas of largest potential gains in efficiency and where early action is practicable, with advice on potential implementation strategies.

Specific issues set down in the terms of reference include the provision, pricing and subsidisation of, and access to, urban transport services; the relationship between transport systems and patterns of urban development; the impact of Commonwealth and State Government taxation and funding of urban transport systems; barriers to private sector investment in urban transport; work practices; the external benefits and costs of urban transport; and the social, environmental and economy-wide implications of current urban transport services and possible changes to them.

Scope of the inquiry

The terms of reference for this inquiry are very broad.

The Commission has focussed on transport within urban centres including not only State and Territory capital cities but also other provincial cities such as Newcastle, Geelong, Toowoomba, and Launceston. Transport between major urban centres does not fall within the terms of reference except where there is a significant daily transport flow (for example, between Geelong and Melbourne).

The Commission appreciates that freight, commercial and business traffic represent a vital part of the urban transport task, and has taken this into account, particularly in dealing with issues relating to road use. The Commission has not, however, conducted an in-depth examination of the urban freight transport industry. The Commission understands that the urban component of major interstate freight corridors will be part of the inquiry being conducted by the National Transport Planning Taskforce.

The Commission's approach

In accordance with the Commission's policy guidelines, in examining the issues and formulating recommendations, the Commission has had regard to their effects on urban systems and the economy as a whole, rather than from the single perspective of transport efficiency.

The Commission has sought to offer solutions to the problems in urban transport systems as they exist today, and to recommend changes which will allow the systems to develop so as to meet the needs of the future.

Cities differ in their history, patterns of development and transport policies. Priorities for transport reform consequently also differ. The Commission has not formulated detailed plans for individual cities or towns. Rather, it has sought to identify broad policies which, if implemented at the local level, will lead to better ways of moving people and goods about urban areas.

As noted earlier, the Commission was asked to focus on those areas where greatest efficiency gains are in prospect and early action is practicable. There are short-term and longer-term options for reforming urban transport. Some changes could, in the Commission's view, be implemented without delay while others necessarily involve longer time frames (for example, those relating to urban form). The Commission's approach has been to canvass the full range of options but to prioritise recommendations for reform and map out a program for implementation.

Inquiry procedures

In preparing this report, the Commission has drawn on information from a wide range of sources. It released an issues paper early in the inquiry and received evidence in submissions and at two rounds of public hearings. Approximately 340 submissions were made to the inquiry. The Commission also held informal discussions with a range of different interest groups including Commonwealth, State and local government interests (regulators, public transport authorities and road agencies), unions, user, pensioner and other community groups, and other interested parties. These discussions and industry inspections were held in all States and Territories in Australia and included regional centres as well as capital cities. The Commission visited briefly several other countries during the inquiry: it has been able to examine at first hand experience in New Zealand, Singapore, Germany, Switzerland, the United Kingdom, Ireland, the United States, and Canada.

The Commission also arranged two consultancies: one to examine performance in the Australian urban bus sector, and another to compare the performance of urban bus operations in the United Kingdom and New Zealand with those in Australia. These reports are available on request and are summarised in appendices E and F.

Further information regarding the conduct of the inquiry is at appendix A.

How to read this report

This report is in two volumes. Volume 1 (this volume) contains two parts (A and B) while Volume 2 contains part C.

Part A discusses urban transport as a system and provides the reader with a broad overview of the issues. This commences in chapter AI with a discussion of the relationship between transport and city development. This is followed by an overview of the patterns of urban transport in Australia (A2) and an assessment of how well our urban transport systems are performing (A3). Chapter A4 examines the role of governments in urban transport, and leads on to a discussion of reform of government agencies involved in urban transport in chapter A5. More fundamental reform, involving the injection of competition, is the subject of chapter A6. The issues of pricing and

investment of urban transport are then discussed in chapter A7. Equity issues, including ways to increase accessibility for the transport disadvantaged, are examined in detail in chapter A8. Chapter A9 examines issues associated with the use of roads, motorists and the problem of congestion. Chapter A10 addresses what have been termed the adverse impacts of road use, accidents and pollution. Chapter A11 draws together the Commission's conclusions and recommendations and proposes a package and timetable for reform.

Part B of the report examines in depth the components of the system. Chapters B1 and B2 cover fixed track modes (urban rail, and trams and light rail). Chapter B3 examines urban route bus services. More flexible modes (taxis, hire cars and community transport) are examined in chapters B4 and B5 respectively. Cycling is the subject of chapter B6.

Part C of the report (Volume 2) contains supporting appendices including detailed productivity studies and other background information.

PART A

THE URBAN TRANSPORT SYSTEM

- A1 The city and transport**
 - A2 Urban transport patterns**
 - A3 Indicators of performance**
 - A4 The role of government**
 - A5 Reforming government transport agencies**
 - A6 Regulation and competition**
 - A7 Pricing and investment**
 - A8 Social issues**
 - A9 The use of roads**
 - A10 The environment, accidents and roads**
 - A11 Reform: an integrated approach**
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A1 THE CITY AND TRANSPORT

Transport is the cement that binds cities and their activities. Many concerns about urban transport, including the role of the motor vehicle, are intimately associated with concerns about the way our cities are developing. There is much that can be done to incorporate the costs (including transport costs) of different urban structures into prices faced by residents. These prices need to play a greater role in planning urban transport and land use.

A1.1 Introduction

People who live in cities have access to a wider range of economic and cultural activities than they can in rural areas. Transport helps make that possible.

Transport is a significant influence shaping the urban environments in which the majority of Australians live. Because objectives for cities vary widely through the community, central issues are the sort of cities we want and how differing objectives can be best accommodated. A key question for this inquiry is how urban transport can best contribute to the well-being of those who live in cities.

The Commission addressed some of the general questions of city planning and development in its report on *Taxation and Financial Policy Impacts on Urban Settlement* (IC 1993).

A1.2 Transport and objectives for Australian cities

In order to consider what sort of transport systems we want, we must first consider what we seek from our cities. After all, transport systems are, in the words of the Royal Australian Planning Institute, 'one element of a very complex urban structure' (Sub. 304, p. 1). A number of participants argued that the ideal city structure could only be determined after careful consideration of the purpose and benefits of urbanisation.

Objectives for city life vary among individuals, communities and cities, although there are several common themes. Cities consist of large concentrations of people, and we expect cities to provide a wide range of goods and services, employment, educational, social and cultural opportunities to satisfy a large variety of tastes and preferences. Some services, especially urban infrastructure such as roads, water and sewerage, can often be provided more cheaply in cities by virtue of the higher density of population.

The diverse range of objectives held for Australian cities was reflected in submissions to this inquiry. The Coalition of Urban Transport Sanity (CUTS) suggested that city life was at its most beneficial when it involved maximisation of exchange and minimisation of travel, drawing the Commission's attention to a 'rich intellectual tradition of urban studies' which:

... recognises the original purpose of cities as a place of exchange for information, friendship, material goods, culture, knowledge, insight, skills, and emotional, psychological and spiritual support, and seeks to place these values at the centre of urban planning and design. The submissions based on this premise include those which called for *urban villages* which integrate living, shopping, recreation, social interaction, work and cultural activities into a compact location. The approach seeks to put new life into local neighbourhood centres as a place of community interaction. This requires transport forms which facilitate this exchange, not just movement. (Sub. 250, p. 2)

Like CUTS, many participants emphasised the role of transport in achieving these objectives. The Coalition of Transport Action Groups argued that 'the search for a solution to the recognised problems of urban transport should be approached from a vision of a better functioning, more pleasant, healthier city and the means to achieve that goal'. The WA Government considered that:

A lack of suitable transport can prevent reasonable access to the majority of opportunities available for education, employment, health care, adequate housing, recreation, shopping and social contact (Sub. 170, p. 49).

The Commonwealth Department of Human Services and Health emphasised that transport's role was to serve the city, while Dr Kenworthy described how he saw different transport modes creating better, more livable, diverse and convenient cities. The Victorian Government argued that its recent reform is:

providing an opportunity for transport to play an affordable but central role in creating a revitalised, livable, sustainable and economically competitive city... (Sub. 319, p. 10).

At the same time, city living brings costs such as loss of privacy, congestion of roads and public facilities, and noise and air pollution. Controlling such impacts is a major concern of urban policy.

Many of these effects are intimately related to the provision of transport. For example, the amount and mix of transport affects pollution, congestion and social interaction. More broadly, the availability and price of transport affect the size and density of cities that can be supported. This is one reason why policy towards urban transport is seen as a potential means for creating cities that better suit residents.

A1.3 How are cities shaped?

To what extent do urban form and transport systems, as they currently exist, reflect community preferences and allow the achievement of people's goals at least social and economic cost? Have past and present institutional structures permitted changes in transport and urban form that reflect alterations in cost structures and preferences? Or have we become bogged down in too rigid a system that will be slow to take on new and innovative ideas or respond to changing needs?

Urban form has affected transport...

Transport is only one of many influences on the way cities develop. Others include the preferences of inhabitants, their incomes, the structure of production, land use planning and regulation, and geography.

In Australia, comparatively high incomes combined with an abundance of land have played a key role in the development of cities. The Australian dream of owning a relatively dispersed, free-standing house with a garden, when associated with different phases in transport technology, also encouraged relatively low density patterns of urban development. Geographic constraints such as rivers, harbours, mountains and soil have also affected the nature of development in different ways in each Australian city. Land use zoning, building and land title regulations have encouraged and facilitated low density development, sometimes without adequate consideration of the cost of service provision, such as public transport, to these developments.

Social changes have also influenced the shape of our cities. As Messrs Gargett and Hutchinson noted:

The two most dynamic trends that have affected the form of our cities since the middle 1940s have been the increasing demand for housing (due to population growth) and reduction in the density of residential development (due to a trend to smaller families). During this period our urban areas have largely grown out from and beyond the transport infrastructure (fixed rail systems) which shaped them up to the 40s. This infilling and fringe growth has been made possible by the increasing availability of private cars as a preferred alternative to public transport ... To date., the response to the increasing demand for travel has been to build more transport infrastructure. (Sub. 56, P. 1)

The nature of economic activity in cities can also have a major impact on urban form and on the use of transport. Australian cities show trends towards decentralisation of production and employment that tend to favour the non-fixed track modes of freight and personal transport.

The Metropolitan Transport Trust of Tasmania said:

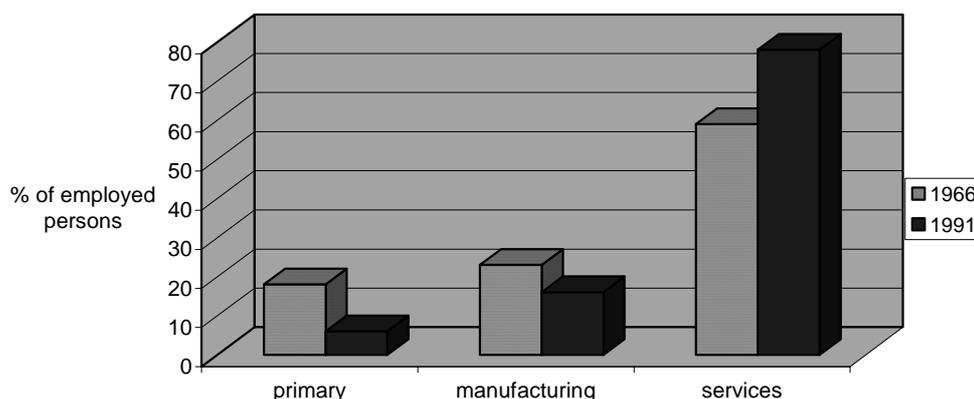
Our changing work patterns demonstrate that the geographic location of employment may be increasingly flexible. The shift in employment from primary and secondary industries (particularly manufacturing) to tertiary industries (including information, technology and service) necessitated a greater focus by governments on desired forms of urban transport. (Sub. 148, pp. 23-24)

Other participants commented on the changes in communications technology since the 1960s which have facilitated the 'suburbanisation' of industrial and commercial activities and a trend towards multi-centred, dispersed cities. The CSIRO Division of Building, Construction and Engineering observed the impact this new technology is having on transport patterns:

The increasing integration of telecommunications and computing and their interactions with production, service activities and transport, are changing land-use patterns and the resulting transport task ... Many of these activities are choosing suburban locations as a result of increased freedom of location enabled by information and communications technologies. Jobs are following people into the suburbs and because of the benign nature of many of these activities they can locate close to, and in some cases within, residential areas. This is changing substantially urban transport patterns, particularly commuting, shopping and freight movements. Cities are changing from essentially single-centred to increasingly multi-centred. Transport patterns are changing accordingly, with multiple centres and multi-directional flows. (Sub. 43, Appendix 1, P. 1)

The growth in suburban employment can be partly attributed to the growth in, the service sector. Currently 77 per cent of the workforce is employed in the service sector, compared with 16 per cent in the manufacturing sector and seven per cent in the primary sector (see figure AI. 1).

Figure A1.1: **Employment by sector**



Source: ABS Catalogue 6201.0.

The continuing growth of the services sector -- the associated decentralisation of travel times and patterns -- and technological and social changes will continue to impact on urban travel. Without corrective action these trends seem likely to accentuate the dominance of the motor vehicle in moving people and goods around our cities.

The relative size and density of a city's population also affects its transport needs. Typically, the greater a city's population density, the more it is suited to mass transit. However, increased populations also usually lead to more congestion. It is not surprising that Sydney, the most populous Australian city with the greatest congestion problems, has the highest percentage of public transport use.

Finally, government taxation and financial policy towards the provision of urban infrastructure is often thought to be an important influence. This question was the subject of the Commission's report on *Taxation and Financial Policy Impacts on Urban Settlement* (IC 1993).

... and transport has affected urban form

At the same time, methods of transport have had a major impact on the way cities have developed. The availability of relatively cheap land on urban fringes, combined with technological advances in transportation, has enabled cities to become both more populous and extensive. As different methods of freight and personal transport have developed, cities have altered their forms: mass transit producing corridor or linear development, the motor vehicle facilitating settlement between corridors. Box ALI illustrates the historical relationship between transport systems, land use and urban form in Melbourne.

The Western Australian Government described the role of transport as 'critical ... in the achievement of desirable forms of urban development'. It noted that:

... construction of roads and improvements to the public transport system alter accessibility within the region and, therefore, have a substantial influence on the location and rate of major new development (Sub. 170, p. 22).

The impact of developments in transport has not been uniform, however. Cities reflect the history of their transport systems. More recently settled North American cities, for example, have been able to take greater advantage of developments such as the motor vehicle. Older European cities with settlement patterns based on different methods of transport, can change only slowly because of the long life and high value of many of their buildings and urban structures. As the Commonwealth Department of Human Services and Health noted:

... the city forms we have now have been significantly influenced by the transport and land-use decisions of previous generations. Similarly, today's decisions will shape future transport and land use patterns. (Sub. 321, p. 8)

Box A1.1 The evolution of transport and urban settlement in Melbourne

In 1835 the Port Phillip District of New South Wales was established on the northern bank of the Yarra River, 2km from the river mouth at Port Phillip Bay. Early residential development was consolidated in the inner east and south due to poor water facilities and unsuitable physical conditions in the west and north. During this period, walking was the main method of transportation which constrained the spread of residential development away from employment areas, although horses and bullock drawn carriages were in use.

Manufacturing was initially, located in the western suburbs, influenced by the availability of cheap land and its positioning between the city and the booming goldfields and pasture lands of the west. Road development in this area was slower than in the eastern districts. Better climatic and physical conditions attracted small scale farming to the east and a well developed grid-like road network developed around the farm perimeters.

Melbourne's first railway line between the docks at what is now Port Melbourne and Flinders Street was opened in 1854. Over the next decade several other rail lines were established to the west, south west, east and south east. The railways encouraged development up to 30 kilometres from the city centre, but remained unaffordable for much of the population. Residential development continued to focus on the physically superior east and south. According to Beed (1981), service provision to this area was also cheaper, acting as an incentive to residential development. Poorer access to urban facilities and physical conditions dampened demand for residential development in the west and north.

A horse omnibus service commenced in 1869, initially between the city and Fitzroy to the north, and subsequently further into northern and southern suburbs. These services were gradually replaced with cable tram services from 1885. Over the next 5 years, cable lines were extended to many of the suburbs immediately surrounding the city. The trams were comparatively quick and cheap, enabling many workers to move away from the city centre. It encouraged development of areas located between rail routes. Commercial development reflected the linear nature of the tram routes, typified today by Sydney Road, Chapel Street and Toorak Road.

The rail network, combined with Melbourne's topography, directed urban expansion from the 1930s in corridors, particularly in the east and south. From 1967 Government urban planning policies sought to reinforce these patterns, advocating growth 'primarily along the along the general axes of principal rail and road routes.'

Increasing car ownership in the post war period facilitated urban consolidation, initiated by the tram, to continue, opening up development in the outer suburbs, away from the public transport routes. New subdivisions filled in the areas between the radial rail lines, and lower density housing patterns emerged. The advent of motor vehicles also increase the flexibility of urban freight movements, enabling factories and warehouses to move away from wharves and rail sidings to cheaper industrial sites on the city fringes. Examples include Clayton in the south-east and Broadmeadows in the north-west.

Source: Beed 1981

Partly because Australian cities were still developing when use of the motor vehicle became widespread, Australian cities are much more like newer North American cities than those in Europe or Asia (see table AI. 1). In terms of urban form, both United States and Australian cities have relatively low population and employment densities. Older Asian and European cities have higher densities. In terms of transport usage, cars are used less and public transport more in Australian cities, relative to United States cities. When compared with European cities, Australians use the car more than twice as often, and public transport nearly one half as much.

Table A1.1 Summary of transport and land use in 32 cities, 1980

	<i>United States Cities</i>	<i>Australian cities</i>	<i>European cities</i>	<i>Asian cities</i>
Car use (000) (passenger kms/ capita)	12.6	10.7	5.6	1.8
Public transport use (000) (passenger kms/ capita)	0.5	0.8	1.8	3.1
Public transport (% of total travel)	4.4	7.2	24.8	64.1
Walking/ cycling (% of total journey to work)	5.3	5.4	21.3	25.1
Urban density (persons/ ha)				
Population	14	13	54	160
Jobs	7	5	31	71

Source: Newman and Kenworthy 1992, p. 11

What are the implications for Australian cities?

In light of these influences it is hardly surprising that Australian cities show a relatively high degree of dispersion and car orientation. As the WA Government noted, 'no one expects that cities such as Perth will, in the foreseeable future, become European-style public transport cities' (Sub. 170, p. vi). Indeed the Australian style of development is entirely consistent with a Picture of cities developed in conditions of relative affluence with abundant cheap land and at a time of rapid technological advance favouring car use.

Australian cities still exhibit a large variety of urban forms and structures, including their transportation systems. This diversity reflects the variety of historical, topographical, cultural, economic and other influences which pertain to each of the cities. They have developed differently in the past, and will continue to develop differently into the future.

This shows a flexibility to respond to changes in economic and social conditions and changes in technology. It illustrates the interdependence that Mr Cotgrove emphasised:

Urban growth has always depended on transportation technology. Transportation allows the specialisation of function necessary to achieve economies of scale, which in turn leads to a spatial pattern of segregated, specialised, interdependent land units. The demand for economic efficiency stimulates the need for improved transport systems, while the development of transportation facilitates the opportunities for economies of scale. (Sub 160, pp. 1-2)

Although they can be altered, the complex determinants of current transport and land use patterns are not readily overturned. As the Chartered Institute of Transport in Australia observed:

Once travel patterns have been established by the prevailing land use policies, infrastructure and generally poor level of public transport service provision, it is difficult or impossible to change them without changing their determinants ... the impacts of and inter-relationships between changing economic structures, technology and the nature of work are elemental to urban structure and consequent structure and pattern of urban transport demand and vice versa. (Sub. 106, pp. 5, 10)

A1.4 Concerns with current urban forms

A number of participants criticised the degree to which urban forms are based on motor vehicle travel. It is often argued that car domination has reduced the amenity of cities, particularly by isolating those with limited or no car access. For example, some new home owners are forced to locate on the relatively poorly serviced fringe, and have limited choice between poor public transport and multiple car ownership with its inherent high costs. Associated with this loss of access are concerns about pollution, the greenhouse problem, oil vulnerability, and other adverse environmental impacts that are associated with motor vehicle usage. According to the *Integrated Transport Strategy for Greater Sydney*:

The ability to establish and operate viable mass passenger transport systems has been compromised by the low density of development, and the high level of employment dispersal. On a metropolitan basis, this has added air quality problems to other concerns about the capacity of the environment to cope. At the local level, high volumes of vehicle movement are reducing urban amenity. (NSW Government 1993b, p. 2)

A study of urban fringe families, conducted by the Australian Institute for Family Studies (AIFS) (1993), addressed some of the issues associated with urban sprawl and arrived at mixed conclusions. The study found that the majority of residents in Berwick, on the south-eastern fringe of Melbourne, were not forced to locate on the urban fringe for reasons of affordability:

It must be recognised that the option of the detached house with its own backyard still has its place and that the residents of Berwick eminently prefer to live in Berwick than in the inner city (AIFS 1993, p. 457).

At the same time, the study confirmed the view that public transport services on the fringe are generally poor or non-existent. The majority of the driving age population was car dependent, with 98 per cent of households surveyed having at least one car. Journey to work times for the few people using public transport were nearly twice as long as for car drivers:

The small number of families without a car or individuals who could not drive were at a substantial disadvantage. Outside peak periods, public transport provision is poor or non-existent and it is inadequate for the lateral (rather than radial) journeys that people make. Transport was a major problem for young people not old enough to drive, not only because of lack of provision of public transport but also because of safety problems on public transport. (ALFS 1993, p. 459)

The study concluded that, in many cases, the choice to live on the urban fringe involved a trade-off between higher travel costs and fewer services on the one hand, and newer and larger housing in a desirable environment on the other.

Closer settlement

Closer settlement involves a change in living and activity patterns which can reduce the need for travel and reliance on the motor vehicle.

Many participants argued that city life could be improved if higher densities of settlement could be achieved in all or part of the city. One approach involves the development of 'urban villages'. Dr Kenworthy described the strategy:

A promising option to bring back diversity and choice into our cities would appear to be the development of urban villages based around existing and future heavy and light rail lines. Urban villages would see a concentrated mixture of housing, shops, work places, community facilities and open spaces mixed together to create a high quality private and public environment. In these more intensely self-sufficient environments, walking and cycling would be viable for many trips and fast, efficient rail transit and buses would be an option for longer radial and cross-city trips between centres, because the public transport system would have the strong nodes and generally higher density residential environments it needs to provide competitive levels of service. (Sub. 77, p. A-6-23)

The Town and Country Planning Association explained:

The central strategy in the so-called urban village is to maximise mobility by placing a maximum number of destination (that is, outside the home) activities within close reach of the home (by walk, cycle, short car or transit ride) in a *cluster* relationship, and placing those land use activities having a regional travel catchment in these clusters. These clusters, which are really urban centres in a multi-centred city ... are strongly connected by rapid transit and road. (Sub. 283, p. 1)

Alderman Masterman (of Leichhardt Council), an advocate of such a development strategy, saw the inner-west Sydney suburbs of Balmain, Leichhardt and Rozelle developing into a series of urban villages. He suggested that:

a policy where each municipal area would achieve one job for each person in the workforce within each municipal area. ... if you didn't take on that job opportunity that was within your suburb, that would be filled by someone coming in from outside ... traffic automatically becomes two-way and instead of having this very coarse radial development of cities, you would have a tapestry which is like a fine weave. (Initial hearing transcript, p. 743)

However, while some sections of the population seek higher density living, others can find it unattractive. Troy (1992) has argued that prescriptions for urban villages are based on a 'highly romantic' view of life. He said:

Contrasts are drawn between elegant city development and ugly suburbia. Romantic pictures of cafe society are painted which are inconsistent with how people actually live anywhere ... The romantic imagery of the 'urban village' is built on a tragic - even deliberate - misinterpretation of village life. The appeal is to a middle class or gentrified form of rural village which is not based on reality. (Troy 1992, p. 10)

There is of course a continuum of possible urban forms. A central issue is where Australian cities should be along this continuum. The ACTU and Public Transport Unions reflected a common sentiment when they said that they were:

... proposing a much greater emphasis on providing higher density residential living opportunities in the future than there has been in the past, to cater for the substantial and growing section of the population who are likely to find such arrangements more attractive and viable than detached housing on suburban blocks (Sub. 27 1, p. 7).

Meeting preferences for city living

Some participants interpreted the Commission's draft report as arguing against the concept of higher density living and in favour of dispersed urban form. The Commonwealth Department of Human Services and Health (Sub, 294, p, 1) suggested that the Commission had identified 'a low density form as given' and Dr Kenworthy said:

... the essential message that you're conveying in your report is that the notion of urban restructuring away from typical suburban sprawl towards more compact forms of development, especially urban villages linked to public transport, is unachievable, if not undesirable (DR transcript, p. 138).

The Commission does not seek to prescribe (or proscribe) any particular urban form for Australian cities. Rather, the key issue is how to determine what density best suits the wishes of residents, given that people have a wide variety of preferences for urban living. There is a need to balance the disposition of some for the urban village atmosphere and minimal travel against the desires of others, who are prepared to accept longer journeys, for open space.

As the Royal Australian Planning Institute stressed, all our cities are different and consequently there is no single, optimal urban structure, each city being required to develop 'home-grown solutions':

... it should be recognised ... that solutions suitable to one city structure are likely to differ markedly from solutions for another city. What may be more efficient in a strongly monocentric city, such as Sydney, may be less so in a strongly multcentred city such as Canberra. (Sub. 230, p. 1)

Several participants cited Toronto as a model of a successful urban system. This particularly relates to its achievements in terms of urban transportation and urban form. However, the durability of existing urban and transportation structures together with the inherent differences between all cities, constrain the extent to which the Toronto-style lessons are applicable to Australian cities.' The Toronto experience and the transferability of its lessons are examined in box AI. 2 and appendix G.

In attempting to determine how closely cities should be settled, there are some very difficult choices to be made about how closely settlement patterns are regulated. Some participants stressed the costs that arise when individual preferences are given free rein. Unconstrained choice may, in some circumstances, compromise collective preferences about the urban environment (in the broadest sense) such as those for clean air and attractive neighbourhoods. Put simply, choices that give individual pleasure may give collective offence. The Commonwealth Department of Human Services and Health, in response to the draft report, said:

It is optimism in the extreme to assume that a complex structure such as a city will somehow achieve optimality and the social, economic and environmental objectives of governments through the sum of individual preferences in response to pricing of transport and other infrastructure which reflects full costs (Sub. 321, p. 9).

Box A1.2: The Toronto experience

A number of commentators pointed to Toronto as a model for integration between transport and land use. Following the construction boom of the 1950s and 1960s in metropolitan Toronto, substantial investment in the rapid transit and the major roads network was complemented with private sector development of high density commercial and residential areas around subway stations. Planning strategies since the early 1980s have attempted to reinforce the interdependence between transport and land use. Dr Kenworthy commented:

... Toronto has succeeded in increasing public transport's share of the urban transport task and in reducing car dependence in recent decades. Crucial to these achievements have been land use policies which have brought significant residential development to its central area, have successfully established transit-oriented urban centres involving mixed residential and commercial development, and have increased overall urban densities. (Sub. 77, p. A-6-73)

Recent changes in the pattern of urban growth have begun to undermine this success. More than three quarters of population growth in the last 10 years has occurred in the regions surrounding metropolitan Toronto. The suburbanisation of industry and business and trends towards detached, single family housing has encouraged low density settlement in these areas. Mr McManus noted:

While older areas of Toronto reflect the integration of transport and land use planning, the recent expansion of outer Metro and the Greater Toronto Area has been based on the automobile. 'Vienna surrounded by Phoenix' is how a visiting Toronto, planner recently described the urban growth of Toronto. (Sub. 11, Attachment 2, p. 10)

The outer regions are characterised by high levels of car use. While around 25 per cent of trips in metropolitan Toronto are made on public transport, in the surrounding regions, public transit use is only in the range of 7 to 11 per cent (Greater Toronto Coordinating "Committee 1992, p. 38). The Toronto Commissioner of Roads and Traffic stated:

The driving population of Toronto is drawn from a vast and growing hinterland. Public transit is no longer a one hundred percent solution - as it was conceived of in the seventies for moving people in and out of downtown. To move everybody we'd need ten times the number of subway lines we have now - and that would break us. (Sub. 11, Attachment 2, p. 10)

The picture which emerges is that Toronto, like all other cities, has its strengths and weaknesses. In terms of urban system the linkage of transport and land use is particularly evident in metropolitan Toronto. However, to a large degree, the surrounding regions face the same challenges and costs as many other cities.

The bottom line for Australian cities?

It's better to start from first principles and consider local conditions rather than simply following the herd. (Juri Pill, General Manager, Administration and Planning, Toronto Transit Commission, 1992)

At the same time, if choices and individual preferences are inappropriately restricted, another set of costs can arise. Indeed it is now being widely recognised that restrictions on location choices may well have frustrated some latent demand for more innovative settlement patterns. The Town and Country Planning Association said that:

It is often the UBRs [Uniform Building Regulations] developed in the 1950s which constrain the provision of suitable residential subdivision and building forms, and practically force residential development to the fringes, rather than permit a large proportion of it to occur by in-fill and reconstruction in established suburbs (Sub. 283, p. 3).

The Victorian Government has recently focussed on removing unnecessary impediments to planning and redevelopment projects:

Striving for these [urban development] goals requires the provision of clear direction and purpose, but has nothing to do with imposition of solutions by government on the urban community. Indeed the Victorian Government is streamlining the planning system to greatly simplify planning schemes, reduce the number of zones and related provisions, and remove unnecessary controls on desirable and straightforward projects. (Sub.319,p. 11)

The Commission endorses moves towards reducing unnecessary and outdated land use regulation.

A1.5 Choices and decisions

When residents of cities make decisions about location, it is usually within a framework that has been set by previous planning decisions about how urban land may be used. In particular:

- the 'development front' for the city has been channelled by zoning and other land use restrictions with a view to preventing excessive demands on (economic and social) infrastructure;
- the type of development in particular areas has been prescribed with a view to preventing conflicting land uses on adjacent properties, and limiting side effects (for example, encroachment on borders and blocking of natural light) arising from unsympathetic construction; and
- transport links have been established.

Within that framework, individuals make their own decisions about location, exercising their preferences about dwelling types and travel patterns, and responding to the price of land, construction, local amenity, transport costs and a host of similar considerations.

The planning framework

Planning is, and will remain, an indispensable aspect of urban development.

Planning is needed to ensure that land uses are compatible. The community has legitimate concerns about the ability of an unfettered market in urban land to deal adequately with incompatible land uses, environmental effects, and coordinated development.

However, zoning and other restrictions may have detrimental impacts on other activities, such as the provision of transport services. Land use planning should allow population density to vary so that the potential for transport to generate patronage can be realised. This is increasingly being recognised, as the Commonwealth Department of Human Services and Health noted:

... many of the initiatives of Commonwealth Government and of state governments in this area are designed to relax a lot of that regulation to in fact open up choice to allow, for example, medium density housing in places where previously that hasn't been allowed, to encourage or allow mixed uses in areas where previously regulation has separated uses out (DR transcript, p. 253).

Similarly, unnecessary restrictions on subdivision design which create difficulties for buses, garbage trucks, fire engines, freight and other vehicles should be avoided. On the other hand, subdivisions should not be planned only with transport in mind. Sometimes potential residents who expect to rely on car travel, for example, might prefer a street design that deters public transport. Provided developers are able to factor in the extent of demand among potential purchasers for this design over one which encourages public transport to residents, the potential for inefficient provision of transport is avoided. It is important to ensure that the costs of a particular settlement pattern are sheeted home to the residents who choose to live there.

The need for transport planning arises in a number of ways. In the first place transport providers are obliged to assess the need for investments and make complex decisions about the type and magnitude of investment. Requirements for planning of this type affect roads authorities and public transport providers alike.

More than this, however, as chapter A7 shows, major transport investment decisions are sometimes made in situations in which it is not possible to pass the costs of transport provision on to those who ultimately benefit.

For example the costs of major investments in rail lines are difficult to recover from those living in the railway's catchment area, either in fares or in levies. Some investments in major roads are also not recovered. When costs cannot be passed on, the price system is more restricted in its capability to perform its allocative role and developers will not receive the appropriate signals about the costs of developing in particular areas at particular densities.

In those cases other infrastructure authorities and developers need to be informed about which areas the transport authorities see as both potentially beneficial or potentially too costly to service. Otherwise, costs of major transport links may not be taken into account in development plans and inefficient settlement take place. For that reason some initial signalling of such potentially viable areas through an urban planning process will be necessary. According to the *Integrated Transport Strategy for Greater Sydney*:

For too long planners have failed to integrate transport considerations into urban development and there has been a lack of foresight in transport infrastructure and service planning. There is recognition in all sectors of government and in business and general communities that the transport modes need to be planned and operated in a more comprehensive and coherent manner and that transport needs to be an integral part of land use and economic planning, rather than an afterthought. In the absence of the integration, transport investment and service development will be ad hoc and fragmented and the efficiency benefits reaped from recent reforms will not be optimised. (NSW Government 1993b, p. 2)

Planning has limitations

Mr Cotgrove argued that planning responses were unlikely to turn back long term social developments which impact on urban form:

Whilst a socially optimum level of public transport provision is essential to cater for the travel needs of those without access to personal transport ... and as an alternative backup system for those who do, and whilst planning strategies that promote urban consolidation by enabling people to live at higher densities of their own choosing are to be encouraged, it is a gross mistake to believe that the poly-centred, low density, arealand time-spreading patterns of our motor-age cities can be reversed by the public transport-led policies advocated by the anti-car lobby.

On the contrary, there is every evidence to suggest that these deconcentrating trends will continue well into the future as car ownership continues and as society moves into the post-industrial era. (Sub 160, p. 6)

When economic incentives favour a particular development structure, planning may have limited effectiveness in changing the direction of that structure. Some recent experiences with attempts at creating greater degrees of self-contained development in Australian cities are discussed in box A1.3.

Others have highlighted strengths and weaknesses in the use of public transport provision to achieve alterations in urban form (see box A1.4).

Box A1.3: Planning for self-sufficiency

The New South Wales Bus and Coach Association (Sub. 97) described the history of a planned development in Campbelltown, Sydney. Designed to be an urban centre in the 1970s, sufficient industries were attracted to locate in the Campbelltown area to satisfy requirements for predicted residential employment needs. A light rail corridor was provided in the town plan. The designated route duplicated the existing rail line, but did not feed into it. This was consistent with the idea of predominantly intra-town, rather than inter-town, travel.

In practice, a predominantly white collar population located in Campbelltown and commuted to the CBI for work purposes, while the industry workers commuted from the inner suburbs (where the industries had previously been sited) to Campbelltown. The planned light rail corridor proved unnecessary and a bus connection to the suburban rail station was required which is hindered by congested streets not designed for such a structure (Sub. 97, p. 23).

The concept of self-containment also underpinned the planning of Canberra's regional centres, according to the ACT Government (Sub. 167). These dispersed towns were designed to provide work, education, recreation and shopping facilities for the surrounding district of around 100 000 to 120 000 residents. The aim of this policy was to offer an attractive lifestyle, and economic savings in terms of travelling time, congestion, parking and pollution.

Over time, however, there has been a significant decline in the degree of self containment, particularly in the Belconnen and, Woden districts.' A number of explanations have been offered including growth of employment in the city, the location of educational and child-care facilities, a relatively high likelihood of job changes or, employer relocation, and the high incidence of two income families, with likelihood that at least one worker will be employed in another district.

Better prices mean better decisions

The more that prices of urban infrastructure reflect costs of provision, the more that planning by both individuals and transport and planning authorities can be improved. According to the Department of Human Services and Health:

... individuals must have a say in the planning of their cities and must to the extent possible, be able to express these preferences through the prices they face for goods and services - the costs of which should incorporate all external costs. This full accounting for external costs is essential if individual decision making is to reflect overall community outcomes. (Sub. 321, p. 9)

It is clear, however, that current prices for transport of all forms are in many cases far removed from those required to match costs of travel. For example:

- motor vehicle drivers do not meet the costs of congestion;

- users of public transport often do not meet even the operating costs of providing their travel; and
- environmental costs are met only imperfectly through design rules restricting emissions.

Box A1.4: Transport infrastructure and urban development

The use of rail (especially light rail – see chapter B2) has been a key feature of proposals to improve cities through achieving consolidation and reducing urban sprawl. Professor Hensher (1993) attributes this to the ‘perceived permanency’ of rail. That is, developers will be more attracted to areas serviced by a fixed track transit than to areas serviced by more flexible modes like buses, which are perceived as less permanent, and therefore as more of a risk.

According to Cervero and Landis (1993), studies of the joint development impacts of several recent rail systems have generally concluded that urban rail transit investments will generate significant land-use impacts if:

- a region’s economy is growing; and
- there are complementary development programs in place, such as zoning policies, which support lighter densities or more intensive land uses.

They also found that rail is not the only mode capable of inducing land use changes.

Cervero argued, however, that their findings were influenced by the fact that existing pricing structures fail to account for the full social cost of private motor vehicle usage. He concluded that transit investment would be likely to have a greater impact on land use and development than freeways in the presence of accurate pricing structures.

Thus, in many cases, price signals are being distorted, which hinders planning because the costs and benefits associated with particular options are confused. Better pricing means better planning.

Without efficient prices to guide them, planners can, at times, end up with the wrong goals. For example, there is an understandable temptation to attempt to reduce costs without regard to the value of the outcomes to the residents of the city. The Australian Road Research Board pointed to:

... the single centred, high density city that would arise from the single objective of maximising public transport effectiveness and efficiency. Such gains in public transport use are likely to be at the cost of greater trip lengths and lower overall transport efficiency. Furthermore, from social, trade, manufacturing, building, individual satisfaction and perhaps health and other points of view, such an arrangement may be far from optimal, and the net result may be society’s loss. Similar suboptimal outcomes may follow from proposals, which some witnesses will probably present to the Commission, for urban structures and controls which strictly minimise the amount of total travel. (Sub. 126, pp. 1-2)

More than that, however, when appropriate price signals are absent, a much greater burden is thrown on planners to allocate resources. The ACT Government explained, for example, that one factor influencing its policy on consolidation was the savings that could be made in the public transport deficit if new development were channelled into inner areas rather than the fringe. Without questioning the policy of consolidation itself, it is clear that if fares at least matched operating costs, much of the responsibility for making such location decisions could be left to potential residents themselves. It is they who would pay the fares, and they who would make the choices about whether those costs made location worthwhile.

The achievement of desirable outcomes in urban transport will depend on much more than cost minimisation. It requires also that full attention be paid to what people want from transport and what they are prepared to pay for. It is this balancing of demand and costs of provision that suggests the need to find market-based solutions wherever possible. While the need for planning is likely to remain in major metropolitan areas, it can be facilitated by better pricing of transport.

A1.6 Concluding remarks

Successful solutions to the problems of achieving the most desirable pattern of city living require the provision of a framework within which individuals can, as much as possible, make personal decisions about their preferred urban environment.

To this end, the costs of location which vary across different areas need to be identified and charged accordingly to residents in those areas. This applies to the provision of transport as much as to other infrastructure, with charges reflecting as far as possible all the costs associated with particular locations, including third-party costs such as pollution and congestion.

Planning by individuals and urban and transport authorities is an integral aspect of urban development. It can be made more effective if there is an efficient pricing structure in place and unnecessary and outdated regulation of land use is removed.

In this way individuals can make choices about locations which incorporate the costs of their use of resources and any costs imposed on others. The location pattern which emerges then relies less on overall judgements about, for example, the appropriate density of development, but rather a conscious comparison by individuals of the benefits of different locations to them with their costs to society. And, importantly, different parts of the city can serve people with different preferences while still reflecting the collective preferences of the community.

The South Australian Government summarised the order of priorities well when it said:

Solutions cannot be imposed on society, at least in an area ... where impacts will be felt so widely. Policies for urban transport will need to emphasise flexibility and to conscript market mechanisms wherever possible to enable conscious decisions to be made about housing and transport with the full knowledge of the costs, benefits and implications. (Sub. 144, p. 9)

A2 URBAN TRANSPORT PATTERNS

Private cars dominate urban travel in Australia, accounting for nearly 90 per cent of all trips. Conventional public transport has a large role to play in Australian cities, although this has been declining. Public transport is especially important for journeys to and from work and school. Among the factors causing travellers to become less reliant on public transport are the increasing comfort and convenience associated with the motor vehicle, and trends such as the expanding service sector, technological advances and more dispersed employment patterns. Bicycles are becoming a more viable transport option.

A2.1 Why do we travel?

As the Western Australian Government put it, 'we travel to get somewhere, or we seek travel by others to bring goods and services to us' (Sub. 170, p. 9). Dr Moriarty described the demand for transport as a derived demand:

travellers are assumed to endure the outlays of time and money involved only in order to enjoy access to activities outside the home such as work or shopping (Sub. 57, p. 2).

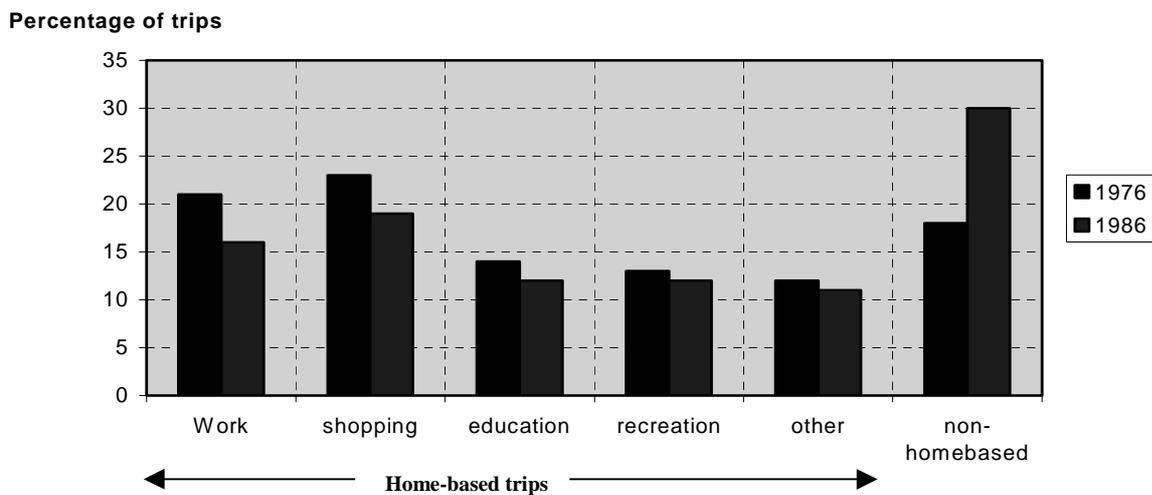
People travel around cities for a multitude of reasons. Data from Brisbane show clearly what is known for the rest of Australia: that journeys to work do not represent the greatest proportion of travel. It may surprise those caught daily in traffic jams and crowded public transport systems, but journeys from home to work represent only between 15 to 20 per cent of all trips. Trips from home to shops account for a further 20 per cent of all trips and from home for education, recreation and other purposes for another 15 per cent. All these shares have been declining over the last decade (see figure A2. 1).

Making up the difference are journeys that do not commence at home, which have increased by 50 per cent since 1976, accounting now for 30 per cent of all trips. This is explained by:

- a long-term increase in the proportion of women in the workforce, resulting in multi-purpose trips for activities such as childcare and shopping;
- a greater emphasis placed on leisure;

- the changing nature of the economy: the increasing role of the service sector (resulting in a shift away from a conglomeration of activities in the central city and the associated decentralisation of work locations); and
- improvements in telecommunications, such as the advent of the facsimile machine.

Figure A2.1: Reason for travel in Brisbane, 1976 and 1986



Source: SEPTS1991

The Transport Research Centre (TRC) found in 1992 that journeys from home to work in Melbourne represented only 14 per cent of all trips. A large number of journeys were undertaken in association with the travel of others, either to drop someone off, pick up another person or accompany someone else (see table A2. 1).

Table A2.1: Proportion of all travel by trip purpose, Melbourne 1992

Trip Purpose or Activity	Weekday trips	Weekend trips	All trips
		(% of all trips)	
Work at workplace	18	6	14
Other work	2	0	1
Education	13	0	10
Shop	17	27	20
Drop off 1 pick up or accompany someone	24	20	23
Social / recreational	19	45	26
Personal business	6	2	6
Total	100	100	100

Source: TRC 1992

A2.2 Where do we travel?

As cities have grown, employment has to some extent followed residential location and there has been less dependence on radial commuting patterns to the central city. Dr Kenworthy identified suburban employment growth as 'the biggest trend at present' and noted that 'most of it is dispersing rather than going into identifiable sub-centres' (Sub 77, p. A-6-4).

As a result, car-based travel has been increasingly favoured over public transport. As Dr Brotchie noted:

The dispersed nature of origins and destinations ruled against the use of public transport for most people but suited private transport (Sub. 43, Appendix 1, p.1).

The extent of dispersion is now quite marked. Using *1986 ABS Census* data Dr Brotchie determined that in relation to journeys to work in Melbourne:

- only 34 per cent of all people travelled to the central city for work and 34 per cent of these people used public transport; and
- the remaining 66 per cent of all workers travelled to sub-central locations with less than 6 per cent using public transport.

However, this information is based solely on journeys to work which, as noted earlier, only represent about a quarter of all trips. It could be expected that the remaining journeys would be even more dispersed. For example most shopping trips would be to regional centres or the 'shop down the road', not to the central city.

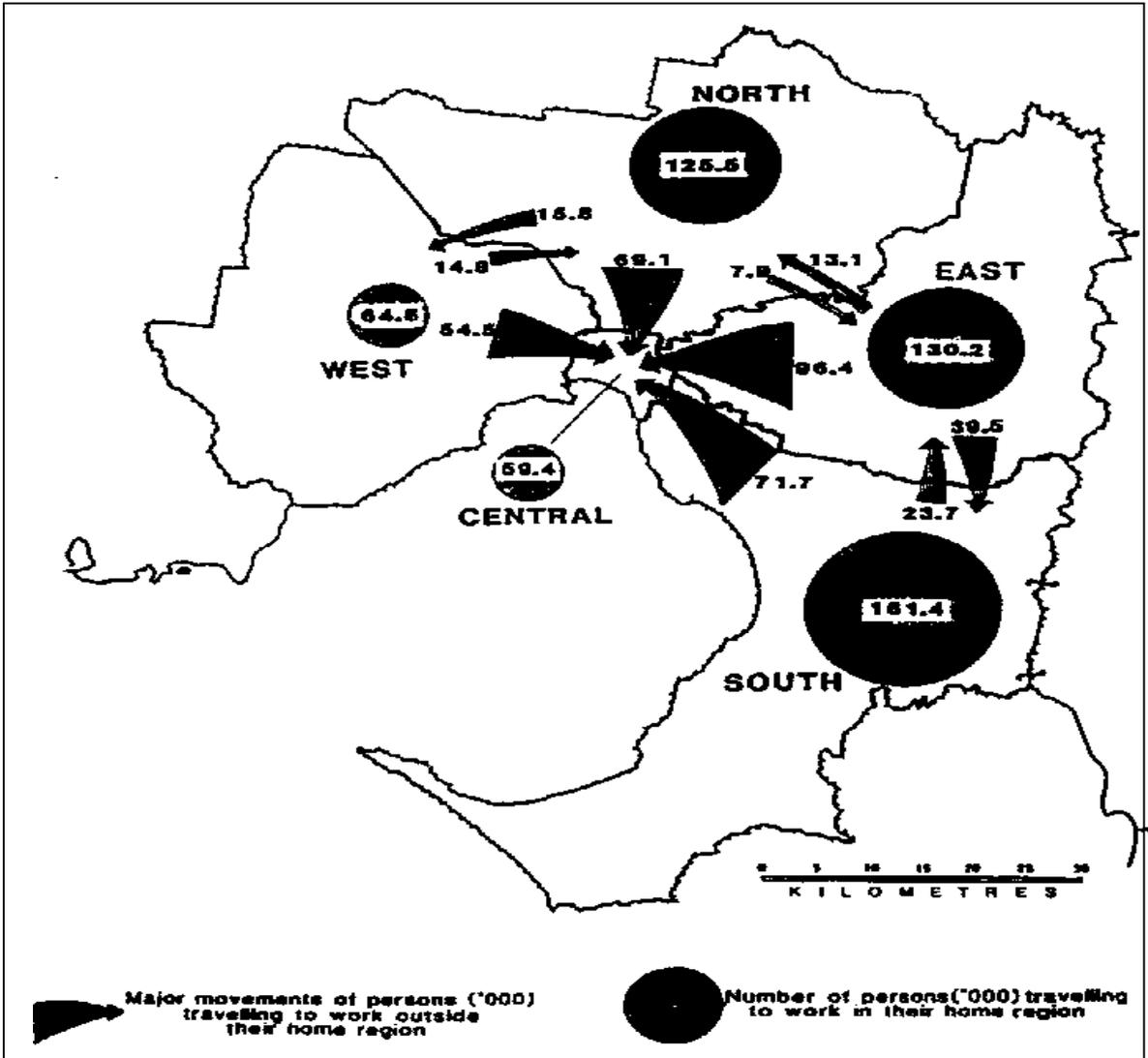
This is not to say that radial traffic flows (for example, trips to the central city) are unimportant (see figure A2.2). Professor Ogden noted the efficiency with which radial travel is served by public transport:

... the central city with its attendant radial public transport continues to exist, and to this extent the future of that of the public transport system is assured. It is dominated by peak period work travel, although much student travel and tourist travel (probably mostly off-peak) rely on these services also. It is important to acknowledge that public transport serves this radial market very well indeed. In Sydney, Melbourne and Brisbane especially, it is a high capacity service, capable of moving large numbers of people quickly, safely and (mostly) reliably. Moreover, public transport dominates the central city commuter market, at least in Sydney and Melbourne, with over half of central city work trips carried on public modes. This is a very high market share on world standards for a low density urban area. (Sub. 35, p. 3)

And as the Public Transport Users Association (PTUA) pointed out, radial routes are also used for non-central city travel:

... long distance travel in Melbourne is dominated by journeys to the central city (radial trips in the classical sense), and long trips to intermediate centres along radial corridors (the expression 'quasi-radial' has been used to describe them) (Sub. 96, p. 1).

Figure A2.2: Journeys to work in Melbourne, 1985



Source: ABS 1985

Even so, the principal conclusion must be that the share of radial work-oriented public transport in the total transport task is now relatively small. Professor Ogden's calculations showed that in Melbourne:

... in round figures, work trips are about 30 per cent of all trips, the central city has about 12 per cent of the region's jobs, and public transport has about half the market for central city work trips. Multiplying these together, we can see that this part of public transport is established to cater for about 2 per cent of daily trips in Melbourne!

The much larger market - what we might call suburban travel - has a much lower market share for public transport. In Melbourne for example, public transport carries only about 11 per cent of non-central work trips. (Sub. 35, p. 3)

A2.3 How do we travel?

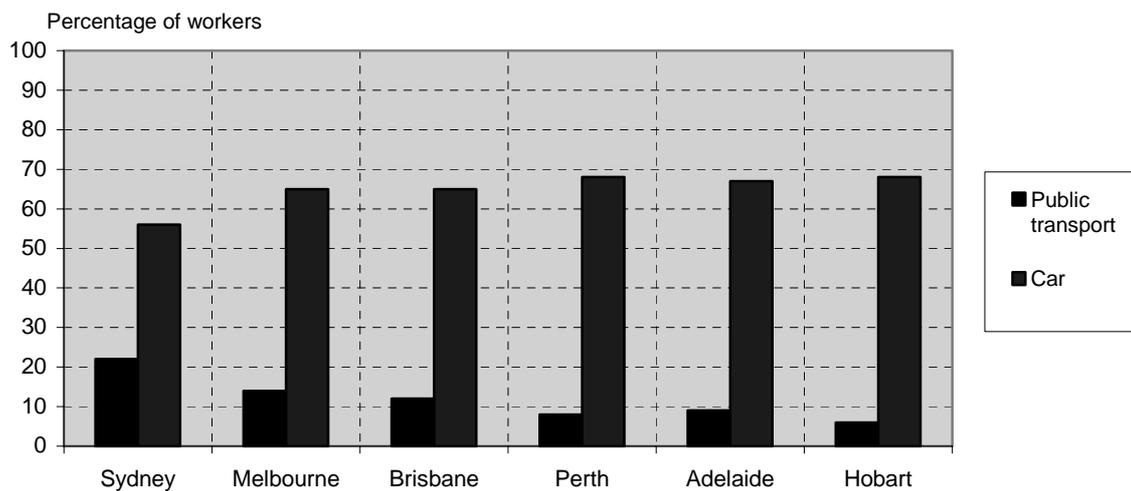
The extent to which different modes of passenger transport are used varies from city to city, but is dominated throughout by the private motor vehicle. On average nearly three-quarters of all trips are made by car. In capital cities, this ranges from 74 per cent of all trips in Perth to 64 per cent of all trips in Sydney (See figure A22.4). Car drivers make the majority of all these trips. Box A2.1 describes the urban transport networks in Australian cities.

Walking is the second most common way of travelling. On average 16 per cent of all trips are on foot. Sydney residents are more likely to walk to their destination (20 per cent of all trips) and people from Perth are least likely to travel by foot (11 per cent of all trips).

Public transport is more widely used in our larger (and more congested) cities but still constitutes, on average, less than 10 per cent of all journeys. This ranges from 13 per cent in Sydney to only seven per cent in Adelaide and Perth.

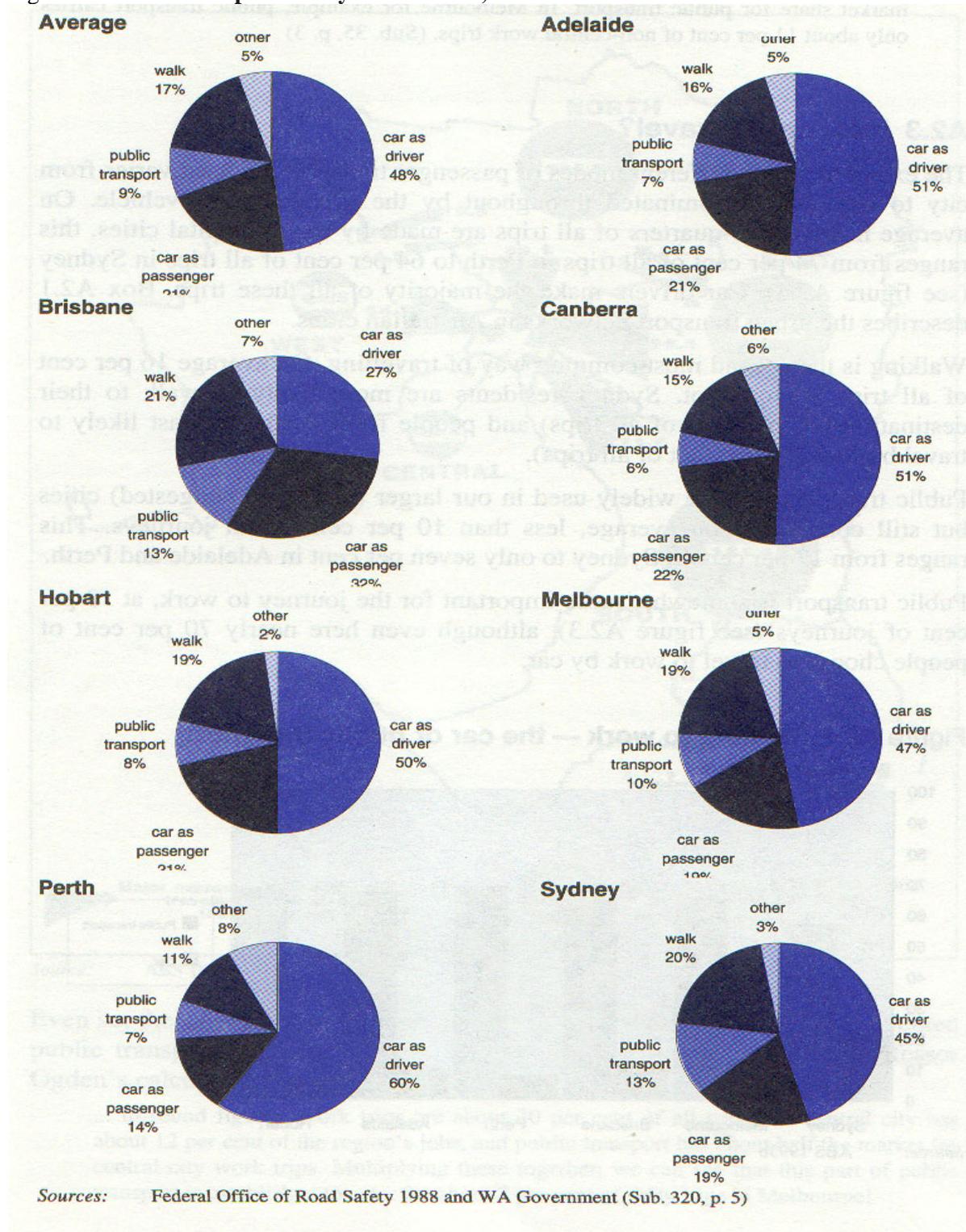
Public transport is somewhat more important for the journey to work, at 13 per cent of journeys (see figure A2.3), although even here nearly 70 per cent of people choose to travel to work by car.

Figure A2.3: **Getting to work - the car or public transport**



Source: ABS 1993b

Figure A2.4: Travel patterns by modal share,



Box A2.1: A snapshot of urban transport in Australia

Australia's cities vary in their structure and transport needs. A common feature is the dominance of the private motor vehicle in catering for transport needs and the involvement of governments in all aspects of transport operations (roads and public transport).

Sydney is Australia's largest city. The Sydney area extends to Penrith and Campbelltown in the West, with Newcastle and Wollongong fast becoming part of Sydney with rapid rail and road links. Road transport, and in particular private car travel, is the dominant form of transport in all these areas. However public transport use in Sydney is the highest in Australia, nearly double the average, and 80 per cent of workers use public transport to travel to the central city.

Melbourne, Australia's second largest city, has extensive road, rail, tram and public and private bus networks. Although public transport usage is declining, 50 per cent of all travellers to the central city still use public transport.

Brisbane is the centre of one of the fastest growing regions in Australia, with the Sunshine and Gold Coasts to the north and south, and the regional centres of Ipswich, Toowoomba and Logan City. Although Brisbane is served by an extensive public transport system (rail and bus), other areas in south-east Queensland are not.

Adelaide has road, rail and bus networks and one tram route. Public transport extends to the outskirts of the city. One factor that affects Adelaide's public transport network is the proportion of aged people that live in the region.

Perth is served by road, rail and bus networks. The most recent feature of this network is the Northern rail link, the most modern rail system in Australia. However car travel continues to dominate Perth's transport.

Hobart is 'a city heavily reliant on the private motor car for transport. Metro buses and bus services provide the bulk of public transport. Taxis supplement this and there is a ferry service between Hobart ... and Bellerive ...' (City of Hobart, Sub. 168, p.1).

Canberra has an extensive road network and all public transport is on ACTION bus services.

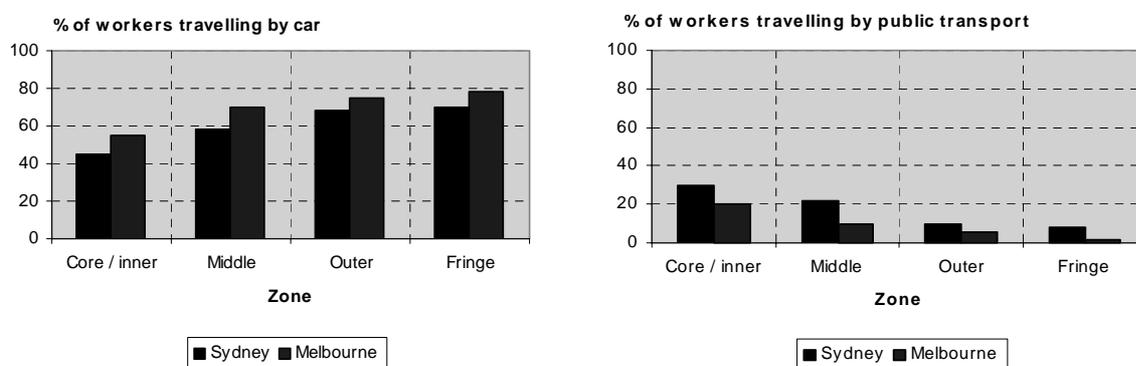
Darwin is a city spread over a large area with a high degree of car ownership. The street was designed for cars and there is little or no congestion. Public transport provided by Darwin Bus Services

Other regional centres around Australia are geared to private transport, experiencing little of the congestion faced in larger cities, with private bus operators providing public transport.

Aggregate figures do, however, conceal the importance of public transport for some types of journeys. For example, 52 per cent of commuter trips to Melbourne's central area are by public transport and 80 per cent of workers in Sydney's central city use public transport to get to work (Victorian Ministry of Transport 1991).

The mix between public and private transport also varies according to the origin and destination of the traveller. Car-based travel is more important to those living at the fringe. For the journey to work, reliance on motor vehicles varies from 40 to 50 per cent in inner areas in Sydney and Melbourne to 70 to 80 per cent at the fringe (see figure A2.5).

Figure A2.: **Housing location and the journey to work, 1991**



Source: NHS 1992a

The bicycle is also becoming a more viable transport option. The Bicycle Federation of Australia state:

Bicycle transport is a significant urban transport mode with a modal split close to that of public transport. ... About 7% of all Australian vehicle trips in capital cities, regional centres and country towns are taken by bicycle. (Sub. 306, p.1).

There are a number of factors affecting the long-term tendency for the increased use of motor vehicles. These include its convenience, the comparative costs of alternative modes of transport and the changing nature of the Australian economy.

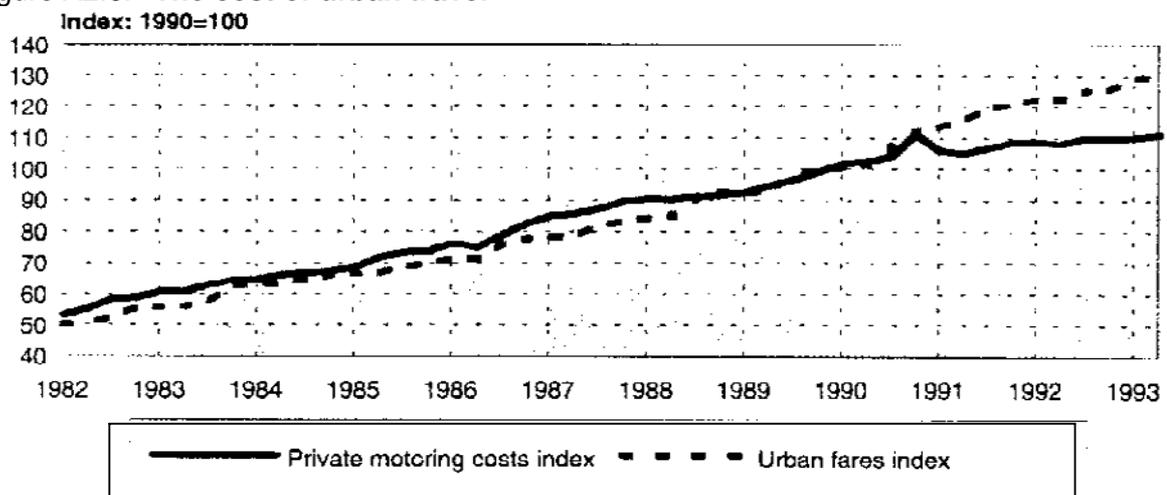
The cost of travel

Expenditure on transport is a major component of household budgets. As Austroads reported:

Transport is one of the largest items of household expenditure (16.0%). This level of expenditure is much the same as housing (15.9%) and a little less than food (18.3%), or household equipment and operation (18.4%). (Austroads, 1993, p.8)

Over the last ten years the cost of operating a private vehicle has increased by about 110 per cent. over the same period public transport fares have increased by about 160 per cent (see figure A2.6). this has further added to the attractiveness of private vehicle use.

Figure A2.6: **The cost of urban travel**



Source: BTCE 1993

A2.4 Patterns of road use in cities

The motor vehicle is the dominant form of transport in urban areas. It is used, on average, for over ninety per cent of journeys, including almost all urban freight movements.

Urban roads help fulfil a variety of needs. These include commuting, business and commercial activities, emergency services, recreation and, importantly, the movement of freight. They provide access to a wide variety of vehicles including cars, motorcycles, various types of trucks, buses, light commercial vehicles, and bicycles. The road reservation also provides crossings and footpaths for pedestrians and bicycles. As the NSW Roads and Traffic Authority pointed out:

The road network is not itself a mode of transport but provides a system for a whole set of travel modes (Sub. 179, p. 14).

Passenger motor vehicles are by far the greatest users of roads (around 80 per cent of vehicle kilometres travelled in urban areas), with light commercial vehicles the next most important users (13 per cent), and trucks (five per cent) and buses and motorcycles (around one per cent each) making up the remainder (see table A2.2).

Table A2.2: **Estimated urban road travel, 1991**

<i>Vehicle type</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Aust</i>
	<i>(million vehicle kms)</i>								
Cars	25 276 (31%)	22 451 (28%)	13 476 (17%)	6 846 (8%)	8 230 (10%)	1 901 (2%)	416 (1%)	1 981 (2%)	80 578
Motor cycles	238 (25%)	190 (20%)	267 (28%)	85 (9%)	122 (13%)	21 (2%)	14 (1%)	31 (3%)	969
Light Commercial Vehicles	3 308 (26%)	3 658 (29%)	2 908 (23%)	812 (6%)	1 259 (10%)	405 (3%)	165 (1%)	329 (3%)	12 845
Trucks	1 584 (32%)	1 338 (27%)	1 016 (20%)	343 (7%)	424 (9%)	185 (4%)	29 (1%)	70 (1%)	4 989
Buses	208 (27%)	176 (23%)	163 (21%)	55 (7%)	89 (12%)	27 (4%)	7 (1%)	40 (5%)	764
Total	30 615 (31%)	27 814 (28%)	17 830 (18%)	8 141 (8%)	1 0125 (10%)	2 539 (3%)	632 (1%)	2 452 (2%)	100 148

Source: ABS 1991b

Transport of freight in urban areas requires large resource inputs. The NSW RTA estimated that:

... approximately \$40-45 billion per annum of Sydney's economy is in industries primarily dependent on goods movements. This represents approximately one-eighth of Australia's GDP.

If the logistical aspects of non-service related urban industries represents 10% of industry's total costs, then the value of Sydney's road freight task is approximately \$44.5 billion per annum. (Sub. 179, p. 13)

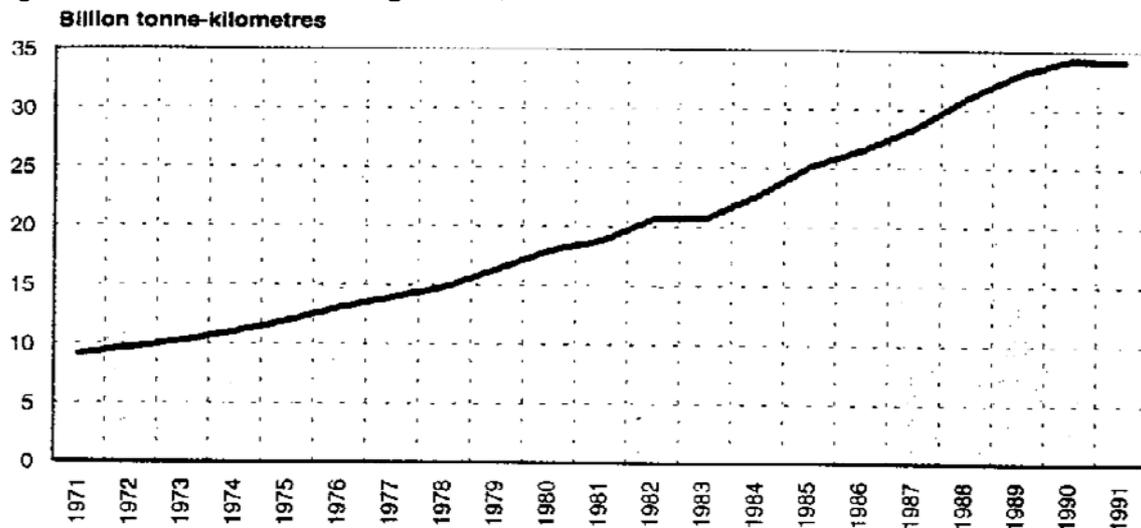
It has been calculated that urban freight expenditure comprises approximately five per cent of GDP (Ogden 1992, p. 20). Moreover, as Professor Ogden said:

.. about half of urban transport costs are associated with the movement of goods, not people. This means that the provision of an efficient and reliable urban freight system is important to the economic development and growth of urban areas. (Sub. 35, part 2, pp. 1-2)

Indeed, the importance of freight is increasing (see figure A2.7). Industry restructuring is generating smaller inventories and the increased use of trucks as mobile warehouses serving a wider number of niche markets. These 'just-in' organisational practices can only be effective if plants or retailers can rely time c on quick delivery of goods. The NSW RTA stated that:

This requires more frequent and reliable freight deliveries, often of smaller consignment size and specialist quality. These are the strengths of road freight and will mean increased demand for road freight movements per tonne of freight. (Sub. 179, p. 14)

Figure A2.7: **Urban road freight task, 1971 to 1991**



Source: Cosgrove and Gargett 1992

Such trends place a strong emphasis on the need for road space to be used efficiently. Congestion can impose very large costs for freight movements (see chapter A9).

Travel in cars and buses remains a key component of road use. Although most car travel does not get measured in GDP, it absorbs substantial time and material inputs.

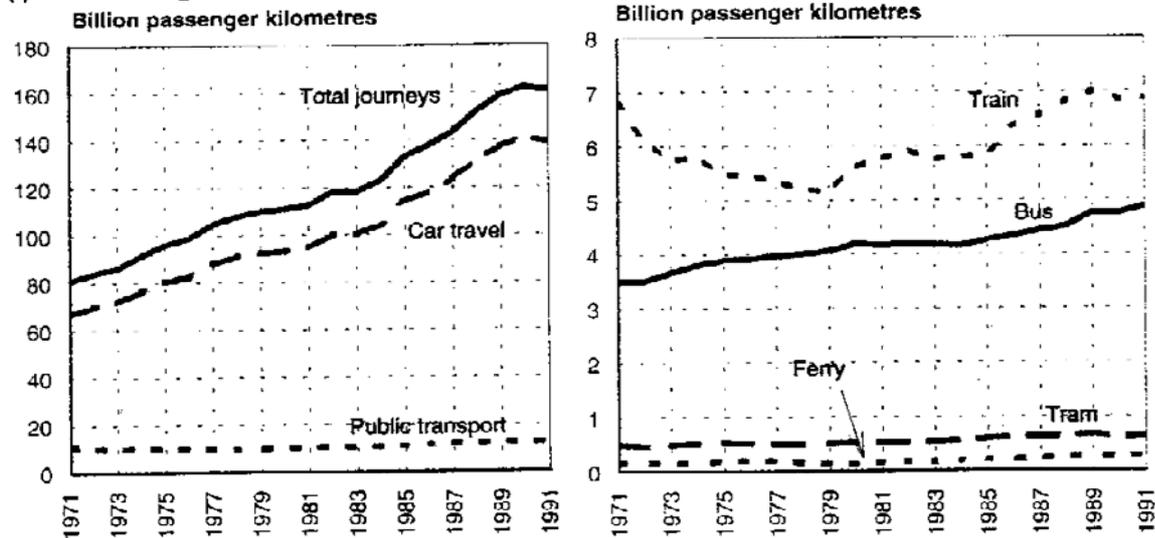
Passenger journeys vary in their importance, as does the extent to which people can alter their mode of transport and their time of travel. In 1991, 23 per cent of all passenger vehicle travel was business related, 25 per cent was for journeys to and from work (primarily at peak times) and 51 per cent was for private use (ABS 1991b).

A2.5 Trends over time in travel

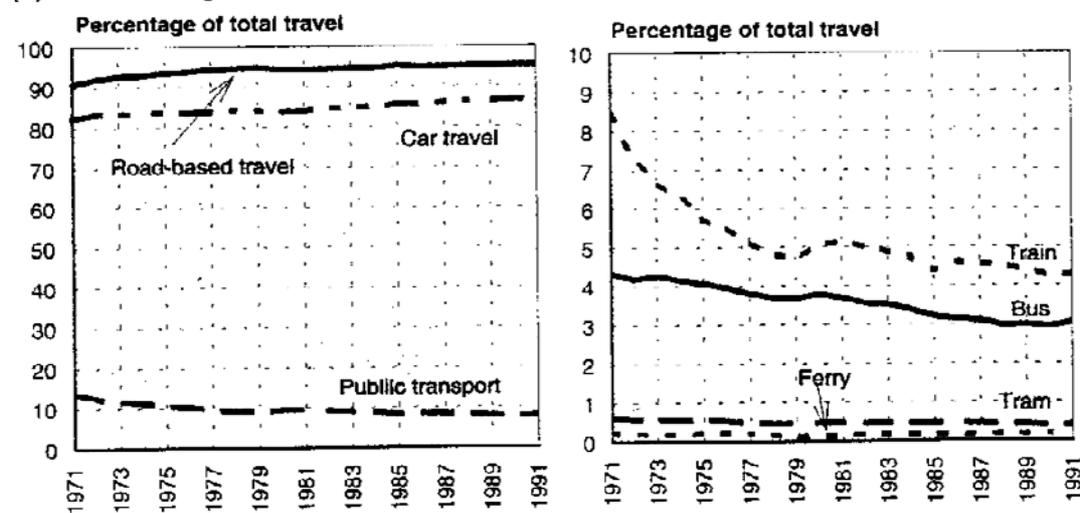
Urban travel has almost doubled in the period 1971-1991 (see figure A2.8). This increase can be attributed almost entirely to an increase in car-based transport since, over the same period, the amount of travel by public transport has remained virtually constant, and public transport's share of total Journeys fell from around 13 per cent in 1971 to about eight per cent in 1991.

Figure A2.8: Urban travel patterns, 1971-1991

(i) Passenger kilometres travelled by mode



(ii) Percentage of total travel by mode (excluding freight)



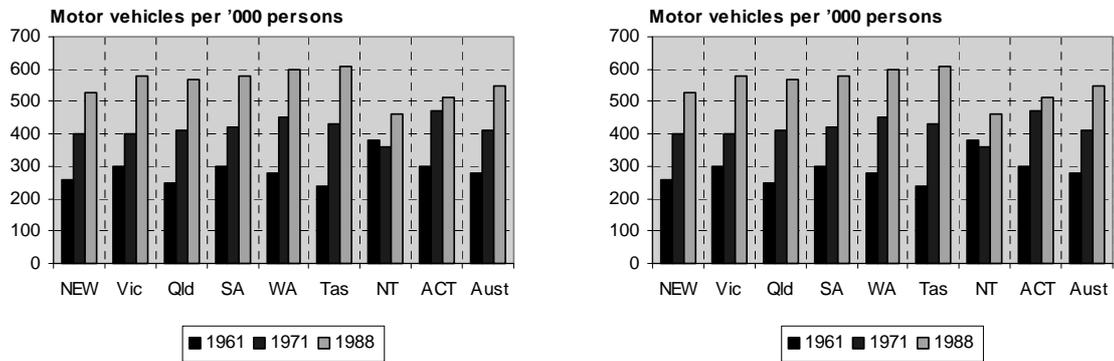
a Data excludes walking

b Road-based transport includes car travel, motorcycles, buses and non-business use of light commercial vehicles and trucks.

Source: Cosgrove and Gargett 1992

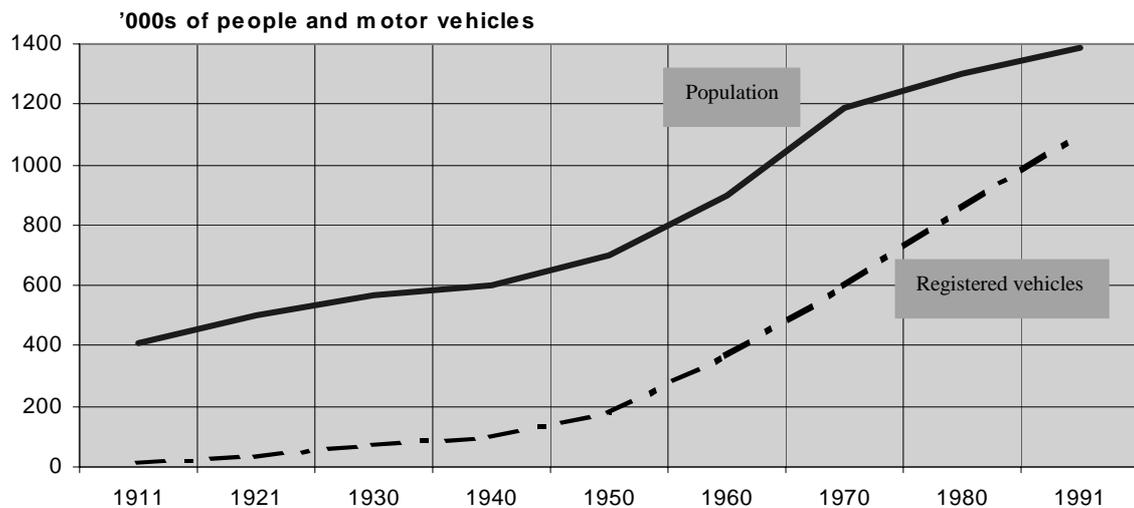
The trend towards the private motor vehicle is reflected in car ownership. During the period 1961 to 1988 the number of motor vehicles in Australia increased by over 150 per cent (see figure A2.9). Based on trends in South Australia, the growth in car numbers has been faster than the increase in population (see figure A2.10).

Figure A2.9: Trends in motor vehicle ownership, 1961-1988



Source: ABS 1993b

Figure A2.10: Car ownership in South Australia, 1911 –1991



Source: Hutchinson and Gargett (Sub. 56).

Car occupancy rates for all trips are falling and are now approaching one person per vehicle: while the number of vehicles on the road is increasing, the number of people in each vehicle is falling. The Western Australian Government said that between 1976 and 1986 car occupancy declined in Perth:

- overall from 1.38 people per car to 1.25;
- in the peak hour from 1.20 people per car to 1.11; and
- for the Perth central area from 1.35 people per car to 1.19 (Sub. 170, p. 5).

A2.6 Conclusion

Car travel dominates travel throughout Australia. The increasing number of multipurpose trips and changing nature of the economy are just two of the factors which are leading to more dispersed travel patterns throughout our cities. Even so public transport is still very important, especially when it comes to radial trips, which still represent a large proportion of all travel in our larger cities.

While some trends in the patterns of travel are evident nation-wide, considerable differences between cities remain. This suggests the need for flexibility to enable the transport system to develop in each city. The mix of public and private transport is likely to vary depending on the history, geography, demography, existing infrastructure and various travel patterns within each city.

A3 INDICATORS OF PERFORMANCE

None of the participants in this inquiry considered that Australia's urban transport systems are performing well.

Public transport systems in Australian cities have been characterised for too long by poor service, inefficiency, and inappropriate fare structures. Inefficient management and work practices are partly to blame. One consequence is large financial deficits. In recent years, many governments have moved to tackle these problems. There has been some improvement in measured indicators of efficiency and service quality for some authorities.

The performance of road agencies, previously the subject of little examination in Australia, is increasingly coming under scrutiny. Recent studies have raised questions about the way road funds are allocated, and the way in which road construction and maintenance are managed.

There are serious gaps in the data required for assessing the performance of urban transport systems in Australia, particularly in the area of road transport. Governments need to ensure the availability of adequate and reliable data.

A3.1 Introduction

Evaluating the performance of our urban transport systems needs to be placed in the context of the diverse range of objectives held for Australian cities (see chapter A1). An assessment of urban transport systems according to their ability to meet broad community objectives such as those relating to urban form, equity and the environment is discussed in chapters A1, A8 and A10 respectively.

This chapter focuses on economic performance. Measures which are commonly used to assess the operational performance of public transport include financial, efficiency, and service quality indicators. The provision of roads can also be assessed according to such variables, but the measures used are usually different from those used for public transport. As a starting point, the views of various

participants, including both users and non-users, provide a useful indication of how urban transport systems are performing generally.

A3.2 Participants' views

The views of inquiry participants about the performance of urban transport varied considerably, reflecting their different interests and vantage points. It is striking, however, that none of the about 340 submissions suggested that our urban transport systems are working well. Common criticisms included:

- the high cost to taxpayers of service subsidies and infrastructure;
- inefficient methods of service delivery;
- poor quality of services (infrequent, slow, inconvenient, unreliable, unsafe);
- congested roads; and
- a failure to coordinate transport and urban planning.

During the inquiry, many participants criticised the quality of urban public transport services.

The Public Transport Users Association (Sub. 96, attachment 1, p. 19) said that in Melbourne, service frequencies are usually unattractive, especially outside peak hours, and are becoming steadily worse. It described bus services in Melbourne as 'of an almost unimaginably poor standard' (Sub. 96, p. 4). As well, it quoted the Melbourne Metropolitan Planning Scheme Survey which stated that Melbourne's buses:

... in most cases act as feeders to rail and tram ... on account of infrequent service and poor co-ordination the saving in walking time by use of a feeder bus is largely offset by waiting time ... there are relatively few who can save much time by using them. (Sub. 96, p. 4)

Messrs Burr, Hill and Walford (Sub. 98, p. 5) indicated some reasons why public transport services are unattractive: poor access, infrequent services, unreliability, lack of safety, discomfort, and inconvenience.

Several participants expressed concern at the risk to personal safety on trains. For example, the Western Australian Municipal Association said that:

People in Western Australia are reluctant to use the much improved electric train service, because of perceptions about safety. This results from adverse publicity over the years to hooliganism and vandalism on trains, especially at night. (Sub. 73, p. 3)

Participants also stressed the need for better integration of different modes of public transport. For example, the NSW Combined Pensioners and Superannuants complained about the poor coordination of train, bus and ferry

services in Sydney (Initial hearing transcript, p. 884). The Shire of Pakenham bemoaned the poor provision of bus feeder services to join the rail network (Sub. 25, p. 6).

Several user groups called for better information on public transport services. For example, Rail 2000 said:

The communication and information issue is a very real issue about our public transport system ... and it certainly is the case in other states (Initial hearing transcript, p. 90).

The Blue Mountains Commuter and Transport Users Association (Sub. 16, p. 1) suggested that information on all services should be coordinated and be available at central locations, such as the central railway station and general post office.

Public transport operators — as represented by the Australian City Transit Association — generally expressed the view that the quality of the road system is good (Sub. 174, p. 4). Other road users, and road builders such as the Australian Road Federation, were also generally positive about the performance of road systems in Australia. In a 1993 survey conducted by the Australian Automobile Association (AAA), motorists ranked congestion number 10 in importance out of 11 issues, whereas road safety was considered to be the most important issue (Sub. 140, p. 10). Congestion was considered to be a problem only in the larger cities of Sydney, Melbourne and Brisbane, and then only at particular times and locations. Importantly, in terms of the economic gains to be made from reducing congestion, around 70 per cent of the costs of congestion are borne by the business sector (see chapter A9).

A3.3 Inadequate data

A major obstacle to the Commission assessing the performance of Australia's urban transport systems is a serious gap in information on the performance of those responsible for building and maintaining roads (state and local government agencies). The emphasis towards public transport in this chapter is partly a reflection of the better availability of data on public transport operators compared with the roads sector.

In recent years, transport agencies — especially those involved in operating public transport services — have provided an increasing amount of financial and operating statistics on their operations. An example is the report of the Steering Committee on National Performance Monitoring of Government Trading Enterprises (1993), which includes performance indicators for government public transport authorities. Nonetheless, information on performance is still

poor in many areas, notably in the area of service quality, and the costs of providing individual services.

The Steering Committee had great difficulty gaining statistics on services delays and cancellations — figures for three out of seven authorities were reported, and only Transperth reported separate figures for both modes from 1987 (Steering Committee on National Performance Monitoring of Government Trading Enterprises 1993).

The Commission recommends that public transport agencies collect data to enhance compilation of the performance indicators published by the Steering Committee on National Performance Monitoring of GTEs, especially those measuring the quality of service provided. To encourage yardstick competition and enable comparisons of performance, private sector operators that are franchised to provide urban transport services should also be required to compile and furnish equivalent data to State and Territory Governments.

Due to the differences in accounting practice between public transport operators, certain financial indicators may not be comparable. Measures of efficiency which compare physical quantities of outputs and inputs are often more reliable than financial indicators.

A3.4 The performance of urban public transport

Financial performance

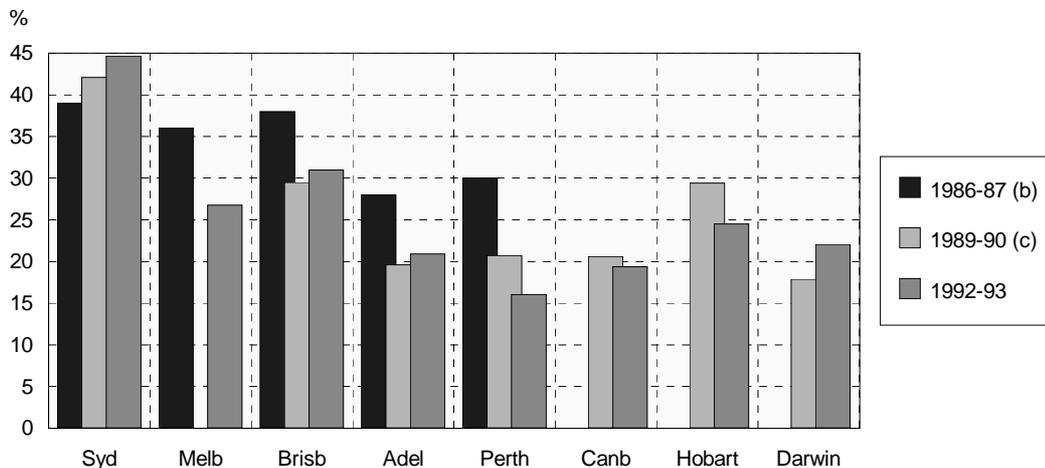
The extent that operating costs are recovered from the farebox is a commonly quoted measure of financial performance for operators of public transport services.

This measure is affected by how revenues and operating costs are defined. For instance, many public transport providers include government subsidies for concessional fares as revenue. In other cases (for example, CityRail and the State Transit Authority of NSW) such payments are included in the total figure for community service obligations (CSOs). Capital expenditures (for example, replacement of rolling stock, upgrading tracks, stations, bus-stops, and so on), which are funded by government grants or loans, are excluded since they often vary significantly from year to year. Government payments make up the difference between commercial revenues and operating costs.

Recovery of operating costs

Figure A3.1 shows the percentage of operating costs of government public transport authorities. Since operating costs are based on data reported by the authorities, there may be inconsistent treatment of expenditures such as debt interest, superannuation, and depreciation, and as such figure A3.1 should be regarded as representing broad trends in the data. Government public transport operators currently cover less than half of their operating costs from fares. If non-fare commercial revenues (for example, from advertising, charter services, and hire of facilities) are included, cost recovery is not increased appreciably.

Figure A3.1: Farebox recovery of operating costs, government public transport authorities



- a Government payments to operators for concessional fares have been excluded from revenues in calculating cost recovery. Figures exclude capital expenditures and, due to different accounting treatment, could also understate interest, depreciation and superannuation in some cases. The columns for 1986-87 are based on Commonwealth Grants Commission data. The columns for other years are based on data compiled by the Australian City Transit Association (ACTA).
- b Data not available for Canberra, Hobart, and Darwin.
- c Data not available for Melbourne.

Source: Calculations derived from preliminary data provided by ACTA
Starrs 1994, p. 29

Authorities differ considerably in the extent to which fares cover costs, varying in 1992-93 from a high of 45 per cent in Sydney to a low of 16 per cent in Perth. Figure A3.1 also shows that:

- there was a marked improvement in cost recovery from fares in Sydney from 39 per cent in 1986-87 to 45 per cent in 1992-93. The improvement reflects higher cost recovery for both trains and buses;
- cost recovery increased for Darwin and Brisbane between 1989-90 and 1992-93, but fell for Canberra, Perth and Hobart;

- in Adelaide, cost recovery increased slightly; and
- financial performance declined considerably in Melbourne between 1986-87 and 1992-93.

Cost recovery for Australia's government urban public transport operators is below that of some overseas cities. For example, cost recovery in 1991 was 55 per cent in Munich, 48 per cent in Washington DC, and in 1992 it was 60 per cent in Zurich and 66 per cent in Toronto (see appendix G). This compares with cost recovery in the range 17 to 44 per cent for Australian cities in 1991-92 (not shown in Figure A3.1).

Care needs to be exercised in making inter-city comparisons, however, since revenues and expenditures may be defined differently, the modal composition of public transport may be very different, and in some cases the costs of operation may be affected by geographic and other factors.

Urban public transport deficits

Deficit figures as they are conventionally calculated can understate the total costs to taxpayers of operating public transport. Apart from the problem of concessional fares, reported expenditures often exclude or understate certain items of expenditure such as interest, superannuation and depreciation.

The Commonwealth Grants Commission (CGC) has estimated the operating deficits of state and territory governments in urban public transport, excluding CSO payments for concessional fares from revenues, and including interest (whether paid by the authority or by state and territory treasuries), payroll tax, superannuation, and government subsidies to private bus operators in expenditures. Depreciation is not included in the CGC figures.

The CGC's deficit figures are shown in table A3.1. The CGC's preliminary data indicate that the combined operating deficits of all state and territory governments on urban public transport amounted to \$2.8 billion in 1992-93.

The CGC estimates that government subsidies to private operators of urban bus services amounted to around \$200 million in 1990-91 (including \$95 million in each of NSW and Victoria, and \$3 million in the Northern Territory). Some local governments (for example, in Brisbane, Rockhampton, and some smaller cities in South Australia) also subsidise public transport, but these are excluded from the CGC's estimates.

The Commission estimates that if depreciation and local government subsidies are added to the CGC figures, the total deficit in Australia in 1991-92 would be in the order of \$3 billion (before taking into account a rate of return on assets).

Estimates on a comparable basis cannot yet be made for 1992-93 due to gaps in the available data.

Table A3.1: Urban public transport deficits^a

<i>Year</i>	<i>NSW</i>	<i>VIC</i>	<i>QLD</i>	<i>WA</i>	<i>SA</i>	<i>TAS</i>	<i>NT</i>	<i>ACT</i>	<i>Total</i>
(\$ million)									
1987-88	769	616	150	103	124	13	8	34	1817
1989-90	930	773	163	106	138	14	8	42	2174
1991-92	1128	923	228 ^b	132	146	18	10	49	2634
1992-93	1133	1094	223	159	147	18	12	48	2834
(% change)									
87-88 to 92-93	+47%	+78%	+48%	+54%	+19%	+38%	+43%	+40%	+56%

a Includes populations of 50 000 or more. Deficits *include* estimated debt charges (including on transferred debt), pay-roll taxation, superannuation, but *exclude* depreciation, local government subsidies for urban public transport, and government payments to operators of community transport. Units expressed in current prices

b Inclusion of Brisbane City Council's subsidy to Brisbane Transport (estimated as one-half of the operating deficit) would increase the 1991-92 figure to around \$250 million.

Sources: Preliminary data supplied by the Commonwealth Grants Commission
Brisbane Transport (Sub. 99, p. 4)

Another way of looking at the sums involved in urban public transport is to consider the amount which each household contributes, or each passenger benefits from, on average.

Based on the CGC's deficit figures, in 1991-92, the urban public transport deficit averaged across all households was highest in Victoria (over \$600 per household), NSW and the ACT (both over \$500 per household) — see table A3.2.

Table A3.2: Average urban public transport deficits per household^a

	<i>NSW</i>	<i>VIC</i>	<i>QLD</i>	<i>WA</i>	<i>SA</i>	<i>TAS</i>	<i>NT</i>	<i>ACT</i>	<i>Total</i>
(\$)									
1988-89	470	490	160	190	260	90	200	500	370
1991-92	580	640	210 ^b	240	290	120	180	540	450
(% change)									
88-89 to 91-92	+23%	+31%	+31%	+26%	+12%	+33%	-10%	+8%	+22%

a See footnote 'a' to table 3.1 for coverage of deficit figures.

b Inclusion of Brisbane City Council's subsidy to Brisbane Transport (estimated as one-half of the operating deficit) would increase this figure to around \$240.

Sources: CGC 1993, p. 87, 90
ABS 1993 d
ABS 1989
Brisbane Transport (Sub. 99, p. 4)

Some participants looked at the total funding of urban public transport, including both operating and capital costs. For example:

- Mr Hughes cited a deficit per household of \$750 for Canberra, including capital costs (Sub. 189, p. 1);
- Messrs Hutchinson and Gargett estimated that the average public transport deficit per metropolitan household in Adelaide would be around \$600 if capital costs are included (Sub. 56, p. 9).

The average urban public transport deficit per passenger (on government operators only) in 1991-92 ranged from \$1690 in Victoria to a low of \$830 in Tasmania — see table A3.3.

Table A3.3: Average urban public transport deficits per passenger^a

	<i>NSW</i>	<i>VIC</i>	<i>QLD</i>	<i>WA</i>	<i>SA</i>	<i>TAS</i>	<i>NT</i>	<i>ACT</i>	<i>Total</i>
					(\$)				
1991-92	1130 ^b	1690	1190	1060	1010	830	1280	980	1360

a Includes populations of 50 000 or more. Services include government operated services only. Deficits *include* estimated debt charges (including on transferred debt), pay-roll taxation, superannuation, but *exclude* depreciation, local government subsidies for urban public transport, and government payments to operators of community transport. Government subsidies for services provided by private operators are also *excluded*, since data is unavailable for the number of passenger boardings on private buses. All values are expressed in current dollars.

b The deficit per passenger is obtained by multiplying the average deficit per passenger boarding, by the average number of boardings per passenger per year (assumed to be 500).

Sources: CGC 1993, p. 90

Steering Committee on National Performance Monitoring of GTEs 1993

Commission estimates

Productive efficiency

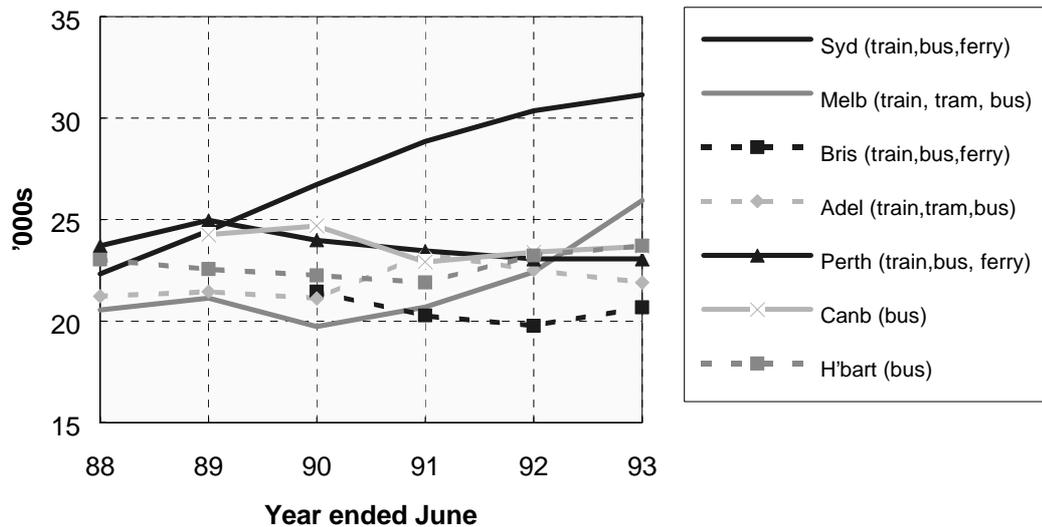
One measure of efficiency in public transport is the amount of inputs required to produce a given quantity of outputs.

Partial productivity measures involve calculating a ratio of an individual output measure to an individual input measure. The conclusions which may be drawn from such indicators are usually highly sensitive to the measure used.

Passenger boardings per employee for government operated urban public transport in Australian cities is shown in figure A3.2 (passenger kilometres is a better measure of output, but complete data are not available). Passenger boardings per employee in Sydney (for rail, bus and ferry) increased by 35 per cent from 1987-88 to 1992-93, mainly reflecting a significant reduction in employee numbers. In Melbourne, they fell between 1987-88 and 1989-90, but

increased by 31 per cent between 1989-90 and 1992-93. In the other capital cities shown in figure A3.2, the measure either showed little overall change or increased slightly between 1987-88 and 1992-93.

Figure A3.2: **Passenger boardings per employee ('000s), government urban public transport authorities**



Sources: Steering Committee on National Performance Monitoring of GTEs 1993
 ACT Department of Urban Services 1992, p. 19
 Other data provided by public transport authorities

Total factor productivity compares an index of aggregate output with an index of aggregate inputs, and provides a more complete picture of productivity trends than partial measures.

As part of this inquiry, the Commission conducted a study of total factor productivity for Transperth (rail, bus, and ferry), the State Transport Authority of South Australia (rail, bus and tram), and the Public Transport Corporation of Victoria (rail, bus and tram). Appendix D contains a detailed analysis of the results. The State Rail Authority of NSW and Queensland Rail were approached by the Commission, but were unable to provide appropriate data for the study in the time available.

The main conclusions from the study are that:

- Overall productivity increased for the SA State Transport Authority between 1986-87 and 1992-93 (passenger kilometres as the output measure results in a larger increase than seat kilometres). A fall in the productivity of its urban rail operations was offset by passengers switching from trains into buses;

- Between 1986-87 and 1992-93, there was a decline in the overall productivity of Transperth (the extent of the decline is larger when passenger-kilometres is the output measure). While the supply of services has increased, inputs have increased at an even faster rate. There was a significant shift in emphasis from buses toward rail during the period.
- There was a moderate increase in productivity of the PTC between 1990-91 and 1992-93; and
- Of the three authorities included in the study, Transperth is the most technically efficient in providing services. However, its services are not as well patronised as those of the SA State Transport Authority. The PTC generally is less technically efficient in supplying services than the other two organisations, although it has better overall utilisation of services, possibly due to the relatively larger population base serviced by the PTC.

Also, as part of this inquiry, Hensher and Daniels conducted a study of public and private bus operators in Sydney, Melbourne and Brisbane (Hensher and Daniels 1993). The study was based on 1991-92 data. The executive summary of the study is at appendix E. The study found that:

- private bus operators generally have higher productivity than public operators within the same city by a margin of 30 to 45 per cent when the output measure is vehicle kilometres; and
- private bus operators could provide equivalent services to those currently provided by public operators at a much lower cost.

In addition, as part of this inquiry, Travers Morgan conducted a study of private and government bus operators in Australia, New Zealand and the United Kingdom (Travers Morgan 1993a). An executive summary of the study is at appendix F. The Travers Morgan study supported Hensher and Daniels' finding that private operators generally have a lower average cost of operation than government operators in the same city. It also found little difference between the productivity of the most efficient private operator in each of the three countries studied.

A benchmarking study prepared by Travers Morgan for ACTION found that its 1991-92 unit costs were significantly higher than the other Australian public operators and private operators included in the study (Travers Morgan 1993b).

In its work for the Commission's 1991 Report on *Rail Transport*, Travers Morgan found that the costs of urban passenger rail systems in Australia were on average 36 per cent higher than international best practice, with a differential in costs observable across most areas of urban rail operations (IC 1991c). Since that study, a number of rail authorities have reduced their costs, notably CityRail.

The State Transit Authority of NSW has been compared with a group of fifteen operators of public bus services — including six Australian and nine international bus operators, both public and private (NSW STA 1993). On most measures, productivity for the STA is lower than the average of the group.

The Commission acknowledges that it is often difficult to make useful international comparisons, due to the different definitions of inputs and outputs which are adopted, and differences in the public transport systems in each city. However, it is noteworthy that for many of the measures for which data are available, overseas operators often perform better than their counterparts in Australia (see appendix G). For example, most Australian government-owned public transport operators are able to carry about 20 000-23 000 passengers per employee, with the State Transit Authority of NSW carrying around 30 000 passengers per employee in Sydney. This compares with 48 000 passengers per employee for the Washington Transit Authority, 60 000 for BC Transit in Vancouver, 91 000 for the Singapore metro, 111 000 for VBZ in Zurich and 138 000 for Trans-Island Bus Services in Singapore.

Management and work practices

Poor productivity can arise either from using too many people and/or too much capital to produce a given level of service or from producing the wrong services. Both types of inefficiencies are evident in urban public transport operations in Australia.

Management practices

Inefficient management practices and excessive corporate overheads can lower productivity.

At the initial hearings in Canberra, Mr Hughes stated that ‘ACTION does have a superstructure of administration that is really unnecessary in many ways’ (Initial hearing transcript, p. 1224).

Hornibrook Transit Management criticised Brisbane Transport’s new depot, saying:

... instead of building a \$20,000,000 monstrosity out at the Mount Gravatt area you build about half a dozen \$2,000,000 depots around the outskirts of the city so we save all this cost of time and mileage running vehicles (Initial hearing transcript, pp. 331-2).

The Victorian Government criticised the Public Transport Corporation’s management of Melbourne’s bus services, saying:

Smaller buses, operated on more flexible routeings, may offer improved frequency and longer hours of service. However, with less than a handful of exceptions, bus planning

in Melbourne has been limited to routes which can be served by large standard buses. (Sub. 186, p. 26)

The NSW Bus and Coach Association claimed that:

... 77% of the excess costs incurred by the public-sector bus industry, compared to the private sector bus industry, is nothing to do with the workplace. It is to do with poor investment decisions, poor planning decisions and very high overheads. (Sub. 97, p. 28)

Further evidence on management inefficiency was provided during the draft report hearing. For example, the Queensland branch of the Public Transport Union (PTU) considered a negative aspect of regionalisation of the bus industry in Brisbane to be the increase in overhead costs as a result of new positions for regional directors and directors' secretaries and assistants (DR transcript, p. 438). Mr Seboa, president of the bus division of the PTU in Perth (and a bus driver), noted the large increase in overhead costs associated with an increase in administrative staff and office space, in contrast to an unchanged number of bus drivers (DR transcript, p. 190).

Awards and work practices

The way that labour is used is one of the major sources of productivity differences between modes and between private and public operators.

Employee awards within urban transport vary quite markedly. Workers in public transport come under various awards. These awards specify minimum base rates of pay and conditions only. Over-award payments and conditions may result in differences between the public and private sectors even if coverage is under the same awards. Conditions of employment generally are more generous in the public than the private sector.

For example, the Australian City Transit Association reported that:

...on base award rates alone the STA (SA) operators are paid 25% more per week than their private sector counterparts under the TWU [Transport Workers Union] award. There are also significant differences in hours of duty, overtime and penalty payments, annual leave and sign on/off allowances. The differences result in STA operators being paid, on average, one third more than operators employed in the private sector. (Sub. 174, p. 8)

This is often a result of weak competitive pressures and lack of financial scrutiny. For example, Brisbane Transport said that:

... part of the Brisbane City Council is identifiable as 'public' service and as a result, many employee benefits and other resources engaged in the delivery of bus services are at costs higher than those which would apply to private sector operators. On the surface, Brisbane Transport carries higher costs in the areas of superannuation, long service leave entitlements, sick leave accrual and termination entitlements. Furthermore, there are significant costs and constraints in shedding excess staff, in contrast to the private sector. (Sub. 173, p. 35)

The awards under which public bus drivers are employed, compared with private bus drivers, are generally less flexible and result in less productive working time per shift. Mr Gable (Bus and Coach Association of Queensland) believed work conditions are the major difference between the public and private bus operators in Queensland. At the initial hearings, he said:

I think [the difference is] working hours probably. We find that the council is operating under a 38-hour week, whereas the private sector operates under a 40-hour week for starters. There are no rostered days off, there are no 10-minute breaks every few hours, there are no huge workshops and depots with very expensive staff amenities. Basically we employ people to do a job, and at the end of the time when they have completed that job, they go home, and they come back again to do the job the next day. (Initial hearing transcript, p. 316)

At the initial hearing, the State Transport Authority of South Australia said that it was carrying approximately 330 people as redeployees out of a workforce of about 3 000, due to public sector employment policies (Initial hearing transcript, p. 17). The Metropolitan Transport Trust, Tasmania (Sub. 148) believed that current public sector awards and superannuation entitlements introduce an estimated ten per cent penalty on basic input costs. Additionally, TWU drivers in the private sector are more flexible in their work arrangements — washing buses, refuelling, small tool work for minor maintenance, spot cleaning buses and facilities.

One manifestation of the lack of competitive pressure on government-owned agencies is the number of work practices which lead to productive inefficiencies. As examples, the Australian City Transit Association listed the following:

- maintenance staff rostered for two nights overtime and paid at time and one half plus a meal allowance whether the overtime is required or not;
- the use of unrealistic running and boarding times;
- payment of minimum hours to some operators during school holiday periods in order to maintain their income at the same level as during school terms;
- limits on the number of hours that can be operated per week and on the number of kilometres driven;
- operating staff being required to return to a particular location for crib [meal] breaks;
- the application of restrictive conditions on the employment of spare operators;
- payment of minimum hours on call-in regardless of hours of work required;
- restrictions on developing a multi skilled workforce; [and]
- specialised classifications refusing to work outside their classification. (Sub. 174, p. 9)

The Commission received a range of evidence on less efficient workplace practices in public transport operations compared to their private or international counterparts. Several sources have pointed to the policy requiring bus drivers to

return to the depot for meal breaks in Melbourne, Perth and Brisbane. The Victorian Minister for Public Transport recently drew attention to this:

Every PTC bus driver is obviously entitled to a meal break. But where, in the park? No. On the bus? No. Each driver must return to base not, though, on a scheduled bus service. The driver is in fact entitled to, and does, take an empty bus back to base — a door to door meal service. (Victorian Department of Transport 1993a)

Mr Seboa (of the PTU) noted that in Perth, train drivers are paid on a per-kilometre basis up to a maximum of 250 kilometres per day, or a maximum of four hours, whichever comes earlier, often resulting in the drivers being underutilised for the remainder of the day (DR transcript, p. 199).

Multi-skilling, by both management and operations staff, generally appears to be a prominent feature of private operators. However, it is much less common in public bus operations. Mr Crawford of the Mount Barker Passenger Service stated at the initial Adelaide hearings:

... our three mechanics drive buses in the morning and in the evening for the short school runs... So we don't have to employ additional drivers for that purpose. The manager of the business, who's a director also ... he does some driving; he drives services on a Saturday because we're up for double time or time and a half, whatever. So he does those on a cross-country service to save money. (Initial hearing transcript, p. 144)

Some work practices are restrictive compared with government-owned operators in other countries. For example, the Victorian Government reported that:

... the rostering limitation for electric train drivers, introduced after opening of the Underground Loop, ... limits to four the number of times per shift that a Melbourne train driver can be asked to drive his train from the tunnel into daylight. On London Underground's Circle line, drivers come from the tunnel into daylight up to 56 times per shift without adverse effects, and without requiring additional payment. (Sub. 186, p. 20)

The Commission appreciates that some public transport operators have taken measures to address inefficient management and work practices. For example, Melbourne's trams are being reduced from two- to one- person operation and the Victorian Government plans to negotiate to reduce split-shift restrictions on Melbourne's rail operations which makes 'labour use less flexible and hence more costly' (Sub. 186, p. 21). The Victorian Government commented:

This component of the gap between costs and revenues is the present price Victoria pays for inefficiencies injected by past industrial pressures and inadequate management methods (Sub. 186, p. 21).

Quality of urban public transport services

User surveys

Opinion surveys of public transport users provide insights into the quality of public transport services.

A 1991 survey by the Australian Bureau of Statistics conducted as part of the National Housing Strategy found that the proportion of households with children under 15 years who expressed difficulties in using public transport. The proportion was 11 per cent in Sydney, 13 per cent in Melbourne, seven per cent in Adelaide, and three per cent in Canberra (ABS 1991a).

A survey commissioned by the Australian Automobile Association (AAA) in February 1993 indicated that 60 per cent of the motorists did not use public transport because they regarded it as being too inconvenient (Sub. 140, p. 7).

Punctuality of service

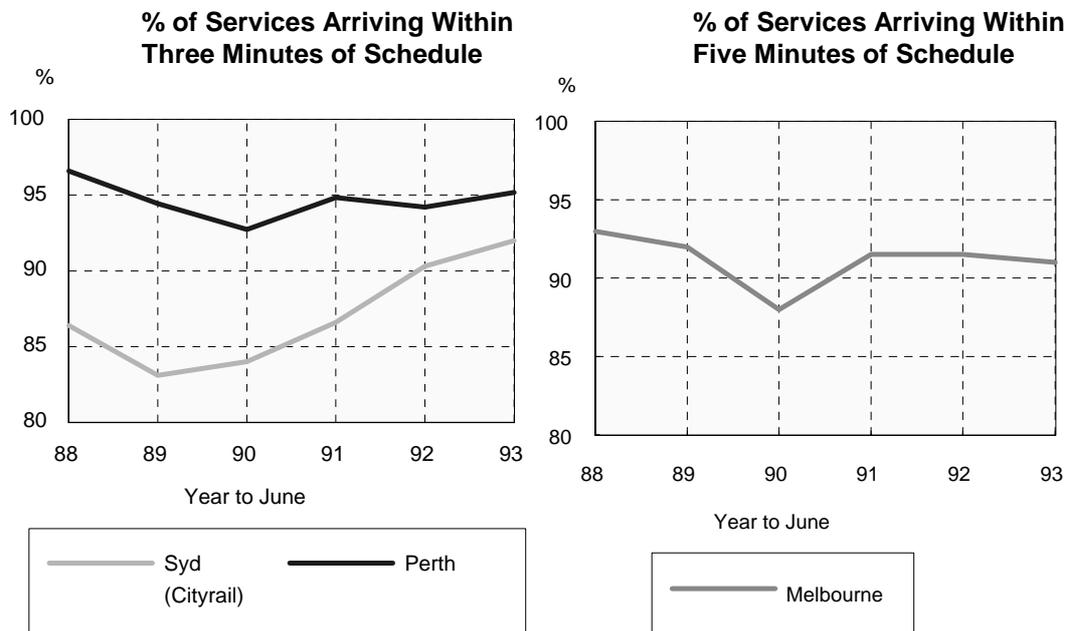
A measure which is often used to gauge punctuality is the percentage of services which arrive within three (or five) minutes of schedule (*on-time running*). Recorded on-time running data for three of the urban rail authorities are shown in figure A3.3. It should be noted that there is some scepticism about the validity of the data. For example, the figures relate only to services which are actually run, and do not take into account those which are cancelled.

On the basis of the reported data, on-time running for CityRail improved considerably between 1988-89 and 1992-93. There has also been an improvement in Perth since 1989-90. On-time running for Melbourne's trains deteriorated between 1987-88 and 1989-90 but improved again in the period to 1991-92. In Brisbane, on-time running for trains was low in 1991-92, at 84 per cent (not shown in figure A3.3).

The Victorian Government noted in its submission that the percentage of train services in Melbourne arriving within three minutes of schedule in the four-week period to 12 December 1992 was 75 per cent for the morning peak, and 69 per cent for the evening peak (Sub. 186, p. 24).

Japan Railways East, British Rail's Network South East, urban rail operations in Paris, and three operators in the United States have on-time running indicators (within five minutes of schedule) in a range of 88 to 97 per cent (CityRail 1993, p. 12). In Zurich, 97 per cent of public transport services arrive within three minutes of schedule. Based on these results, there is substantial scope for trains in Australian cities to be more punctual.

Figure A3.3: On time running for urban rail



Sources: Steering Committee on National Performance Monitoring of GTEs 1993
 Rail authority annual reports

The available data for on-time running of buses (available for only two authorities) suggest that adherence to timetables is better for buses than for urban rail. For example, around 99 per cent of government provided route bus services in Perth and Canberra are reported to arrive within three minutes of schedule. Apart from the direct impact of late running by trains, buses and trams, the quality of service is worsened by secondary effects such as bunching of vehicles, over-crowding, and congestion at stops and terminals.

Frequency of service

The frequency of services is an important factor in determining the attractiveness of public transport. Frequency of scheduled services is higher for the peak than off-peak, and higher for bus and tram/light rail than for urban rail services. Based on the published timetables, over the last ten years or so, there has been little change in the frequency of urban rail services during peak times and the interpeak periods. However, frequency of rail services has declined during evenings and on weekends. The frequency of bus services has declined in the morning peak, off-peak, and for evenings and weekends in most cities: Sydney is an exception.

Travel time

Travel time is an important influence on public transport demand, and on the way travel is split between different modes. However, travel time reflects factors which are beyond the control of the operator of transport services, such as the patterns of employment and residence, and geography.

A survey of empirical evidence suggests that generally a 10 per cent reduction in travelling time, with no other changes, would lead to an increase in patronage of around three to five per cent (see appendix B).

Studies conducted for the National Housing Strategy (see NHS 1992a) indicate that the majority using public transport in Sydney and Melbourne can arrive at their destinations within 45 minutes. Average travel times to work tend to be lower in Melbourne than in Sydney. Those living closest to city centres have shorter travel times than those in outer suburbs.

Surveys by the Australian Bureau of Statistics indicate that average travel times to work have remained broadly unchanged over time (see table A3.4). In Melbourne and Adelaide, average travel times to work by public transport decreased during the 1980s.

Table A3.4: Median travel time to work, 1971 and 1991

<i>Mode of transport</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Adelaide</i>	<i>Canberra</i>
	<i>(minutes)</i>			
1971				
All modes	30	24	21	na
1991				
Public transport - male	40	35	35	30
- female	40	30	30	30
All modes - male	30	25	20	17
- female	20	20	15	15

na not available

Sources: Based on data in ABS 1974, 1984, 1991a, 1991b

Other aspects of service quality

In their responses to the draft report, many participants noted that there are factors other than punctuality, frequency and travel time which are important to users of public transport. For example, the Queensland Government (Sub. 327, p. 3) noted that comfort, safety and convenience to origin and destination are also important factors. The Commission agrees. However, it is difficult to obtain indicators of these variables which can be used to compare different operators.

A3.5 The performance of urban roads

The performance of urban roads can be viewed from a number of perspectives. In this report, the focus is mainly on how well the current urban road network meets government objectives for urban transport, and on whether the method for providing urban roads is efficient.

Urban road expenditure

The costs associated with road-based travel include the costs of building and maintaining roads, as well as the costs associated with accidents, congestion and environmental impact.

The Commission estimates that expenditure on urban roads in Australia was approximately \$2.2 billion in 1991-92 (see table A3.5). This represented around 40 per cent of total road expenditure in Australia in that year. It is estimated that around \$1.2 billion of the expenditures was on construction, and around \$1.0 billion on maintenance. Table A3.5 also shows that construction expenditure on urban roads declined in real terms between 1986-87 and 1991-92.

The figures do not include the costs of collecting certain government levies on motorists, and policing the roads. Interest, and superannuation for employees of road authorities and departments could also be excluded or underestimated for some road authorities.

State and Territory Government road expenditures are funded by both Commonwealth, State and Territory Governments, and local government expenditures are funded by all three levels of government.

Table A3.5: Urban road expenditure

	<i>1986-87^a</i> <i>(\$ billion)</i>	<i>1990-91^b</i> <i>(\$ billion,</i> <i>current prices)</i>	<i>1991-92^b</i> <i>(\$ billion,</i> <i>current prices)</i>	<i>1991-92^b</i> <i>(\$ billion,</i> <i>1986-87 prices)^c</i>
Urban road expenditure (of which)	1.8	2.1	2.2	1.7
- construction	1.2	1.2	1.2	0.9
- maintenance	0.6	0.9	1.0	0.8

a BTCE estimate.

b Commission estimates, based on preliminary data provided by the BTCE and NRTC.

c Based on the BTCE's road cost deflator.

Sources: BTCE 1989

BTCE 1993

Commission estimates

Unpublished data provided by the NRTC and BTCE

Government levies on motorists

Government levies on those who use roads include fuel excise (levied by the Commonwealth Government), fuel franchise fees, registration and licence fees, and stamp duty on transfer of vehicle ownership (the last four being levied by State and Territory Governments). Vehicle owners also pay sales tax and import duty on new or imported vehicles. These are levied by governments to raise revenue, and in some cases to directly fund expenditures on roads.

Published information on the amounts of government taxes and charges on motorists do not distinguish between urban and non-urban travel. Accordingly, the component which relates to urban travel has to be estimated — at \$6.2 billion in 1991-92 (see table A3.6).

Table A3.6: Selected government levies on motorists, allocated to urban travel

	1990-91	1991-92
	(\$ billion)	
Selected revenues apportioned to travel on urban roads ^a	6.0	6.2
(of which)		
- registration/licence fees	1.1	1.2
- levies on use of petrol ^b	3.6	3.9
- levies on use of diesel ^b	0.7	0.7
- tolls (Qld and NSW only)	0.1	0.1
- stamp duty on transfer of vehicle ownership	0.5	0.4

a For fuel levies, the urban travel component is estimated by applying actual rates of fuel levy to fuel consumption by particular vehicle classes in urban areas. Registration, licence fees, and stamp duty on transfer of vehicle ownership are apportioned to urban travel according to the urban share of total vehicle-kilometres in each State and Territory.

b Commonwealth fuel excise collections relating to on-road use, and State fuel franchise fees.

Sources: BTCE 1993
Data provided by the NRTC
Commission estimates

During the inquiry, some participants drew a link between road user costs and revenue collected from road users, and also proposed alternative methods of estimating costs and revenues (see chapter A7).

Efficiency in providing urban roads

The efficiency in providing urban roads has two main dimensions:

- whether road funding produces the roads of highest value to society; and

- whether the roads that are provided could be built at a lower cost to society.

Inefficiency in the allocation of road funds could be reduced if there were pricing mechanisms to guide the process (see chapter A7). The payments which road users currently make to government are in the form of taxation rather than payments based on the cost of actual road use.

Inefficiency can result from:

- road users not bearing the full costs of congestion (discussed in chapter A9);
- road users not bearing the full economic costs they create, including pollution and accidents (discussed in chapter A10); and
- road users not contributing to the costs of pavement wear. The heavy vehicle charging regime determined by the National Road Transport Commission (NRTC) is aimed partly at addressing this issue.

Poorly maintained roads increase vehicle operating costs — this is particularly important for freight transport. Inappropriate investment in road infrastructure may lead to roads being built where they are not really needed and roads not being built where they are needed. Chapter A7 discusses the problems associated with appraisal of road investments.

A number of recent studies have focused attention on the performance of the road sector. These studies mostly examine the efficiency with which road authorities construct and maintain the roads which governments decide to build (often known as technical efficiency), rather than whether the amount and types of roads which are constructed are really the most desirable from the community's point of view (allocative efficiency).

A study by Kneebone (1993) for the Business Council of Australia concluded that, for rural highways and main roads, the costs associated with road construction and maintenance for Australia's state road authorities compare favourably with international practice. However, the Kneebone study was unable to draw any conclusions in relation to the urban road network due to the paucity of data. Also, there was insufficient information to assess the performance of local governments, which are responsible for a large proportion of urban roads.

In December 1993, the House of Representatives Standing Committee on Transport, Communications and Infrastructure (the Morris Committee) tabled in the Federal Parliament the report of its Inquiry into the Efficiency of Road Construction and Maintenance, titled *Driving the Road Dollar Further*. The Committee said that:

The lack of hard evidence hindered the Committee's investigations. The Committee was supplied with mountains of information, but much of it was too general or could not be substantiated. (House of Representatives Standing Committee on Transport, Communications and Infrastructure 1993a, p. 2)

Nevertheless, it was highly critical of the lack of performance appraisal in the road transport sector:

Never has so much money been spent by so many people over so many years, with so little information collected, and analyses prepared, on how well the money has been used (House of Representatives Standing Committee on Transport, Communications and Infrastructure 1993a, p. 3).

During the present inquiry, several participants also pointed to the lack of attention given to appraising the performance of road authorities. For example, the Coalition for Urban Transport Sanity said in its initial submission that:

... virtually no attention has been given to business enterprise reform within the agencies responsible for regulating, constructing and in some cases, operating the road system. While Sydney's State Rail Authority is expected to operate on an efficient commercial basis, with assessment of improvements in key operational indicators being measured against international standards, no similar performance criteria are applied to the Roads and Traffic Authority. (CUTS, Sub. 20, p. 5)

In its submission on the draft report, the Coalition for Urban Transport Sanity further commented that:

It is our judgement that waste and inappropriate investment is more rampant in these agencies than GTEs (Sub. 250, p. 9).

In general, the performance criteria applied to public transport agencies have yet to be applied to road authorities. The Australian Road Federation described the present situation:

Under current arrangements the annual works programs developed by the road authorities are designed to spend whatever amounts of money are made available by the various governments for road works. Certainly, the governments concerned receive advice on the amounts which the relevant road authority considers should be provided for roads but this advice is oriented towards achieving a desired level of activity for those engaged in providing roads rather than towards providing an effective road system. It certainly falls far short of the advice required at board level to make responsible investment decisions. (Sub. 248, p. 1)

A study prepared by the Allen Consulting Group (1993) for the Australian Automobile Association, which examined the contribution to economic growth of investments in land transport infrastructure, also said that public information about road investment decisions is limited.

There are indications that the present allocation of road funding may be inappropriate. For example, the study by the Allen Consulting Group found that

there is relative under-investment in major urban roads vis-a-vis local and rural roads and:

... the historical pattern of investment has led to relative over-investment in local and rural roads and under-investment in major urban roads. An economically optimal pattern of investment should result in returns from investment in each category of road being similar. Instead the results show higher returns from investment in urban roads than from investment in local and rural roads. (Allen Consulting Group 1993, pp. ii-iii).

The study concluded that:

There is little basis for believing that the present level and pattern of funding of road infrastructure is economically optimal (Allen Consulting Group 1993, p. ix).

A study by the Bureau of Transport and Communications Economics for the period to 1987-88 also concluded that there was under-provision of urban roads relative to rural roads (BTCE 1988, p. 32).

The National Road Transport Commission (NRTC) has recently begun work on measuring and reporting on the performance of road authorities. This responsibility follows from the *NRTC Act 1991*, which instructs the Commission in part to:

... assist in developing indicators for assessing the performance of the road system, the efficiency and effectiveness of road authorities (including the Commonwealth and those of local government) in managing that system, collate the information collected by those authorities, and publish comparative assessments of the performance, of those road authorities and of their road systems (Clause 17 (2) (b) of the Light Vehicles Agreement (Schedule 2 to the NRTC Act).

Austrroads, which is an association of the road authorities, is undertaking an integrated set of projects on performance measurement (Sub. 255). These include projects to develop performance measures of effectiveness and efficiency, and to clarify the roles and objectives of the road system.

There is an urgent need for accurate and regularly updated standardised statistics and performance indicators for the road industry in Australia, and across all levels of government. The Commission recommends that the NRTC develop and report appropriate measures of performance of road authorities, on the basis of data to be provided by them.

Management and work practices

Based on mainly anecdotal evidence, the Morris Committee identified several areas where improved practices would result in savings. For example, the NSW Roads and Traffic Authority suggested that the implementation of maintenance management systems could save up to \$50 million per year, and Vicroads stated that administrative cost savings of up to 50 per cent are available if local councils shared resources (House of Representatives Standing Committee on

Transport, Communications and Infrastructure 1993a, p. 1-2). The Committee suggested that existing inefficiencies in road construction and maintenance across all levels of government lead to \$1 billion of road works not able to be undertaken each year (although the basis for this estimate is not reported).

The Morris Committee concluded that the major factors which contribute to inefficiency of the road authorities included the stop-go nature of road funding, the poor planning and coordination of road programs, the inadequate utilisation of expensive road plant, and the smallness of road projects. While some of these factors are beyond the direct control of the road authorities themselves, others have to do with the inefficient way their activities are managed and organised.

The Roads Corporation of Victoria (Vicroads) has identified a number of inefficient work practices in its road maintenance activities, including:

- lack of flexibility in rostered day off (RDO) arrangements. Workers may take their RDOs when weather conditions are conducive for completion of maintenance tasks;
- limited flexibility with current standard working hours. The Corporation wishes to undertake more maintenance during the off-peak to minimise traffic and operational delays. Currently off-peak work attracts overtime entitlements;
- field supervisors can only perform supervisory roles which often results in their under-utilisation; and
- time lost due to maintenance patrols having to meet at depots at work start time. Workers then travel to and from worksites during working hours and return to the depot prior to cessation of work for the day. (Victorian Auditor-General 1993)

A3.6 Conclusion

Based on the available information, it can be said that Australia's government-provided public transport systems compare unfavourably with international best practice on indicators of financial performance and productivity. There are widespread complaints from users about the quality of public transport services. Inefficient management and work practices are widespread within government public transport. In recent years, many public transport authorities have undertaken steps to improve efficiency and service quality. Measured indicators of performance for some of the authorities have shown an improvement.

Although one study suggests that, for certain road expenditures (rural highways and main roads), the costs of construction and maintenance in Australia compare favourably with other countries, other studies indicate that there are

inefficiencies within both state and local road authorities, and raise doubts about the appropriateness of the current pattern of road expenditure.

This inquiry has highlighted the following problems with Australia's urban transport systems:

- **the cost to taxpayers of urban transport is high;**
- **there are inefficiencies in the delivery of public transport services and road infrastructure;**
- **the available evidence raises questions about the allocation of road funds and the efficiency of road construction and maintenance;**
- **the quality of public transport is often poor, particularly in terms of reliability and frequency. Criticisms from participants also included unattractiveness, lack of safety, and inconvenience;**
- **the information available to the public on the performance and efficiency of transport and road agencies is inadequate; and**
- **while some steps have been taken to improve management and work practices, public transport agencies have a considerable way to go to achieve best practice.**

A4 THE ROLE OF GOVERNMENT

Government involvement in urban transport is pervasive and complex, and encompasses all three levels of government. While there are good reasons for the involvement, it is not efficient in its present forms. There needs to be a clearer specification of objectives and responsibilities for government agencies. There would be benefits in more effective local government involvement in urban transport planning processes.

A4.1 Introduction

In examining ways in which our urban transport systems might be made to work better, a fundamental question is the role to be played by government. Indeed, this inquiry is concerned with the choices government can make to ensure the system works better. What is the rationale for government involvement? Are current arrangements well suited to achieving the objectives? Even where there is a case for government intervention, an important issue is the type of intervention which will secure the best outcome. What are the core functions appropriately undertaken by government and what is better left to the private sector? And how should the tasks be divided between different levels of government?

A4.2 The current role of government in urban transport

Urban transport services in Australia are provided by a variety of public and private sector interests. Current government involvement in urban transport is pervasive and complex. While the dominant government role in public transport is obvious, private motor vehicles too are driven on roads constructed and maintained by government. Box A4.1 broadly categorises the ways governments intervene in urban transport in Australia.

In some cases most of these roles are combined within the one organisation. One question is whether this is appropriate or whether certain functions should be carried out by separate agencies. Some functions, particularly service provision, may be capable of being performed — as many already are — by the private sector.

Box A4.1: The present roles of Australian governments in urban transport

The present roles of governments in Australia can be broadly categorised as:

- transport infrastructure planner: State governments coordinate investment in urban transport infrastructure within the context of metropolitan land use plans;
- service planner: typically, state and territory governments determine the type of public transport services to be provided including their routes and frequencies;
- service coordinator: State and local governments coordinate public transport services between modes and operators, tender out some services to private operators, and some also manage integrated ticketing schemes;
- regulator: governments set the rules by which public transport operators must play. For example, governments issue licences for the right to provide taxi and bus services, determine maximum fares, and lay down safety regulations, such as road rules, which must be followed;
- infrastructure manager: governments play a major role in building and managing roads, rail lines, bus stops, bike paths, and other items of urban transport infrastructure;
- public transport service provider: many urban public transport services in Australia are directly operated by government-owned agencies;
- providing access for the transport disadvantaged: public transport is often used by governments as an arm of social policy through such instruments as fare concessions; and
- funder: governments directly fund infrastructure as well as public transport services.

The roles of different levels of government

In each State and Territory, governments operate public transport authorities. Urban rail systems are run by state government monopolies. In the case of buses, a mix of public and private operators prevail, but private operators usually operate under licences or contracts specifying routes, schedules, fares and so on. Taxis are mainly run by private interests, but are heavily regulated by government licensing bodies.

State governments are responsible for the construction and maintenance of state arterial roads. These functions are performed through the various state road agencies.

Box A4.2: State and territory governments objectives in urban transport

There is a need for Government to intervene directly to achieve a transport structure that meets both community expectations as well as economic efficiency ... The immediate need is for development of government policies to urban transport which ensure that services and infrastructure are being provided by those in the best position to provide them ... and ... transport makes a more substantial contribution to economic growth and the fundamental social need for reasonable levels of access with minimum impact on the environment is met. — NSW Department of Transport (Sub. 178, p. i)

...Victoria is building on the reform program through the development of a strategic transport agenda, the key elements of which are: a continuing focus on customer satisfaction and efficient service delivery, a national perspective which embraces a leading role in the reform process and the reinforcement of Melbourne as a national transport hub, and also a central role in the revitalisation of Melbourne is self-evident. — Victorian Minister for Public Transport, Mr Alan Brown MP (DR transcript, p. 800)

The role of the Queensland Department of Transport is to ensure the provision of a safe and efficient transport system which contributes to the economic development of the State and enhances the quality of life in Queensland — Queensland Department of Transport (Queensland Department of Transport 1992)

The primary objective for policies applying to government intervention in transport should be the satisfaction of public demand by the provision of reliable and safe transport services operated at efficient cost levels reflected in the prices charged ... This primary objective assumes that the ultimate aim of policy is the well-being of the public in general, rather than the sectional interests of certain members of it. — South Australian Government (Sub. 144, p. 18)

In a broad sense, public transport facilitates government policy on a whole range of social objectives, including health, education, quality of environment, urban and social form, etc. — Metropolitan Transport Trust, Tasmania (Sub. 148, p. 45)

The Government believes that, to the greatest extent possible, all members of the community must have equal access to appropriate and convenient modes of transport within their capacity to pay. — ACT Government (Sub. 167, p. ii)

State departments of transport or their equivalents generally administer overall transport policy. Other government agencies which impinge on urban transport include urban planning and environment. The nature, extent and effectiveness of coordinating machinery varies.

The scope of state and territory government involvement reflects the multiplicity of government objectives in urban transport policy — see box A4.2.

Local governments also play a considerable role through their land use regulations, funding of local roads, and provision of local public transport. The Commonwealth Office of Local Government (Sub. 122) identified a number of activities of local government:

- the construction, funding, design and managements of roads;
- land use planning and regulation;
- providing some specialised local public transport;
- shaping transport options by measures such as control of parking;
- providing transport related infrastructure such as car parking areas and bus/rail interchanges; and
- interaction with other government spheres on land use and transport planning.

Exceptions to State responsibility for urban transport occur in Brisbane, Rockhampton and other smaller cities where the relevant City Council directly operates or contracts out public transport services.

The role of the Commonwealth Government in urban transport is limited. As the Department of Transport and Communications noted:

The States, Territories and local governments are responsible for the provision and operation of urban transport infrastructure and systems. Traditionally the Commonwealth has not sought to play a major role in this area. This reflects the constitutional division of power, and the fact that State and Territory governments are better placed to determine local transport operational and investment priorities. (Sub. 156, p. 4)

The Commonwealth nevertheless has an influence through funding grants to the States and Territories allocated to particular modes and sometimes even to specific projects. Commonwealth specific purpose programs include Building Better Cities and Home and Community Care.

The Commonwealth also plays a major role through road funding, although its direct responsibility is now limited to the National Highways System. Funding for 1 main roads and local roads to state and territory governments is to be untied from 1994; such funding to local governments is already untied.

More importantly, general revenue grants from the Commonwealth are affected by disabilities faced by the States and Territories in providing public transport, while Commonwealth taxation policy has an impact on investments in major transport infrastructure.

A4.3 The rationale for government involvement

The following discussion critically assesses the rationale for government involvement in urban transport with a view to formulating some principles which would maximise the effectiveness of government's role.

Reasons commonly advanced for government involvement in urban transport markets include:

- the 'public good' or non-commercial nature of urban transport;
- natural monopolies in public transport;
- service coordination and system wide integrated ticketing ;
- provision of information;
- safety regulation;
- external costs and benefits, like environmental and health effects; and
- providing access to the transport disadvantaged.

Transport services as a 'public good'

Certain transport services may not be provided sufficiently or at all by the private sector even though they are valued by users because of inherent difficulties in charging for or excluding those who do not pay for the service.

For example, without government funding, roads would be under-provided. Commercial incentives to provide roads privately are compromised by the need to allow many entry and exit points from a given route (particularly for local roads), presenting obstacles to the efficient collection of user charges.

While some roads would still be provided on a cooperative basis (like local roads), and high traffic, longer distance toll roads would still be profitable (as some are now), the lack of charging mechanisms for most existing urban roads would make them unsuitable for access pricing.

However, the distinction between a 'public' and a purely 'commercial' service is not always clearcut. Some participants argued that public transport also possessed the attributes of a 'public good'. For example, the Council of Pensioner and Retired Persons Association (SA) Inc commented:

The idea of User Pays — that the system will pay for itself — is absurd. Public transport is a PUBLIC UTILITY, a PUBLIC SERVICE, the same as the Police Force or the Fire Brigade. (Sub. 66, p. 4)

While it might be argued that public transport is not commercial in the sense of being profitable, it differs from roads in that it is clearly possible to exclude those unwilling to pay from using the service. One could argue, for example,

that public transport is similar to electricity, or the telephone service. While these services have also traditionally been predominantly supplied by public utilities, few would argue that they should be provided free of charge.

Natural monopolies in urban public transport

Natural monopoly is said to occur when the least-cost way of supplying the entire market for the service is by a single firm.

The existence of a natural monopoly in certain aspects of urban public transport is seen as necessitating a role for government to prevent the exercise of market power and possible exploitation of the travelling public. This role usually takes the form of direct service provision and/or regulation of fares.

The natural monopoly issue is complicated by the nature of the outputs in transport. An important distinction is between:

- intermediate outputs: ‘supply-oriented’ measures such as vehicle miles, vehicle-hours, or seat-miles of service. These are known as intermediate outputs because they need to be combined with user time to produce final outputs; and
- final outputs: ‘demand-oriented’ measures such as trips taken, which after all is the ultimate purpose of urban public transport.

In the context of urban public transport the natural monopoly concept is most often evident in rail, in particular the rail track and signalling. Potentially, however, it may also be applicable to dedicated busways, light rail tracks and to taxi communication networks. However, examples of natural monopolies are becoming less evident as technology advances: for example, taxi communication networks are being challenged by the use of mobile phones by drivers.

Putting aside the issue of their existence in urban public transport infrastructure, economies of scale generally speaking do not exist in terms of intermediate outputs of urban public transport services. For example, Evans (1990) reported that studies in the United States and elsewhere, including recent UK experience, had found that unit costs of operating buses were not related to the size of the operating company. That is, the operating costs were no higher if the services were provided by several operators than by one.

However, if the costs to users are considered (that is, the demand side), some commentators believe a natural monopoly may exist.

Service coordination and system-wide integrated ticketing

An efficiently integrated transport network benefits all users (that is, reduces their costs) simultaneously, and a beneficiary who has not paid for the integrated service cannot be excluded. Hence, it is argued, there is an appropriate role for government. Aspects of public transport services which may require coordination include deciding on how services will coordinate with other services and with other modes of public transport, and system wide integrated ticketing if desired.

The elements of an integrated public transport network which may reduce users' costs are outlined in box A4.3.

User costs include not only the fare paid, but also other costs such as users' time spent waiting. User costs may be a high proportion of the total cost of a trip — Evans (1990) estimated 75 per cent — mainly in the form of walking, waiting and in-vehicle time.

The concept of 'user costs' has important implications for the natural monopoly issue. Mohring (1972) showed that transit service is subject to strongly increasing returns to scale when waiting time (or any other user cost) is viewed as part of the cost function, even if there are constant returns in producing intermediate outputs (Small 1992). Similarly, Hensher (1993) argued that:

When one broadens the definition of economies of scale and network integrity to include the benefits to users in the form of lower user costs (ie waiting times, service uncertainty) with increasing patronage (which is more likely with a single operator), we see an additional benefit of a natural monopoly. Economies of scale can thus be due to increased benefits to users as measured by reduced user cost, even if the costs to the operator of providing the service do not fall. Given that the local bus industry is typically one of constant returns to scale, it is the user cost-benefit which supports the idea of a natural monopoly.

A single operator may be able to provide a better service to passengers than several operators using the same combined resources. A 'better service' is one with lower average user costs ... With a greater prospect of attracting patronage to one's services, a single operator can schedule more integrated and hence convenient services than the combined schedules of more than one operator. Connections could be more convenient as well as ticketing (although inter-operator ticketing could be envisioned, but it would be rather messy) and information dissemination.

Hensher is arguing that natural monopoly exists in local areas, and that duplication over given routes is inefficient. This may imply that in some small cities, such as Toowoomba (Queensland), a natural monopoly exists over a whole urban area.

After reviewing the experience in Great Britain (except for London), Evans (1990) argued that the value which passengers place on convenient connections and ticketing arrangements means that bus routes can be natural monopolies. He

considered that deregulated urban bus services in Great Britain lost patronage because of scheduling inefficiency and inconvenience to passengers. Recently, some operators have acted to provide a better service to passengers and increase patronage and revenue, by coordinating their services.

Box A4.3: User costs and service coordination

‘User costs’ are the costs to individual users of consuming transport services, rather than the cost to providers of supplying the service. Efficiently coordinated urban public transport services can reduce these costs to users. Particular features of such a network of services include:

- *service coordination between operators and modes*: ensuring passengers arrive at their destination with minimal inconvenience while changing modes and operators;
- *scheduling*: if a new operator is introduced on a route the incumbent services at 30 minute intervals and organises its timetable so that a bus now arrives every 15 minutes, the scheduling efficiency remains the same. If the new operator timetables services to arrive at the same time as the incumbent’s causing delays so that the overall time between stops and result in a fall in scheduling efficiency, making the user worse off;
- *information* on timetables, routes and modal interchanges which is available and reliable will lower user costs by reducing passenger waiting time and time spent collecting and integrating the information; and
- *system wide integrated ticketing* lowers user costs by increasing user convenience. Passengers are able to purchase a ticket to take them to a destination; there is no need to purchase new tickets for different modes and operators.

Source: Adapted from Hensher 1993

The STA (SA) believed that its public transport network in Adelaide ‘generates significant passenger and community benefits’ (Sub. 268, p. 16). The Coalition for Urban Transport Sanity regarded service coordination and integration as vital:

Economic efficiency requires good integration across the whole transport network, not unregulated competition which creams off passengers on heavily patronised routes and leaves others unserved. A key to efficiency and service quality is an integrated ticketing system which facilitates easy interchange between different transport modes and operators. (Sub. 250, p. 11)

And the Bus Proprietors Association Inc (Victoria) stated that:

Because the current ticket system is multi-modal, and bus operations have traditionally been cross-suburban and/or rail and tram feeder services, coordination of modes is vital (Sub. 84, p. 2).

However, a formal approach to service coordination may not be required in every urban area or over the entire area. For example, Toronto seems to get by having these functions carried out only in part of the conurbation and some of the UK cities do not seem to require them to be carried out at all. Further, this role may be less important where most trips do not involve transfers. For example, the STA (SA) estimates that only 30 per cent of trips involve transfers.

There are of course, commercial incentives for operators to provide a better, more coordinated service by cooperating with each other. But where service coordination and integrated ticketing is desired, the existence of a natural monopoly in user costs means that government intervention may be needed to ensure that urban public transport services operate effectively as integrated networks through the features described in box A4.3.

Provision of information

The availability of comprehensive and accurate information is seen by many as a vital part of the overall transport service. For example, the Metropolitan Transport Trust of Tasmania observed:

It is clear that for the 80 or 90% of people in a city that do not use public transport, one of the biggest deterrents is knowledge. When does the train or bus come? Where does it stop? Where can I catch it?, etc. Accessibility is more a matter of education and information dissemination than purely frequency. (Sub. 148, p. 29)

In some cases there may be insufficient commercial incentives for private operators to provide information, particularly as it relates to the total system. This suggests a role for government in information provision. Judging from participants' submissions to this inquiry, however, the quality of information available on public transport systems in Australia is often poor. In contrast, European systems and regional councils in New Zealand place much emphasis on the provision of information — a function often performed by a coordinating authority (see box A4.4).

Safety regulation

Another possible 'information failure' relates to the issue of safety. It may be impossible for a traveller to make a soundly based decision regarding the safety risks of the public transport vehicle (eg. a taxi), he or she is about to enter. That is, users would not be able to successfully calculate the benefits to

them of taking a particular form of urban transport against the costs. This information problem can be compounded by lack of competition in urban transport provision. This may call for a role for government in safety regulation.

If the community expects a particular level of safety in urban transport operations, and it will not be supplied by the private unregulated operator, government involvement may be justified. As the Australian Road Federation stated:

... government involvement should be limited to those activities which cannot reasonably be performed by private enterprise and regulation should be kept to a minimum consistent with ensuring public safety and protection of the public interest (Sub. 13, p. 17).

An inadequate level of safety may be provided by a free market if operators do not incur the full costs of damage or injury to passengers and bystanders caused by an absence of safety measures. For example, those injured incur costs which can only be retrieved through personal insurance or common law.

Such costs may justify more stringent roadworthy testing of commercial public transport vehicles, regular testing for drivers and operators' licence renewals and more comprehensive requirements before an operator can hold a licence. These regulations are appropriate regulatory activities for governments.

A public transport operator is not the most appropriate body to enforce such regulations. Conflicts of interest may arise when one body is responsible for enforcing regulations affecting the revenue-earning activities of the authority itself as well as those of other operators.

Regulation of personal safety, an increasing problem both on public transport and in private cars, is a major task of government through the police forces and other security agencies.

External costs and benefits

One reason for government involvement in urban transport is that many decisions taken by individuals do not take into account broader social costs or benefits imposed by their own actions. Dr Kenworthy argued the case for intervention as follows:

... relates to those needs or desires of urban residents which they do not — or cannot — express as consumers, eg. the desire for cleaner air, safer streets and more convivial urban spaces ... Expressed more generally, efficient, sustainable, equitable, and livable cities are all urban 'goods' which people are likely to favour but which they cannot secure by means of individual purchases in the market — just as the 'good' and livable city which they add up to cannot be so purchased. Indeed, the more limited horizon in which consumers act often compromise larger and more public goals which are widely

judged to be important but for which there is no 'effective demand'. The combined impact on the urban system of large scale car use, resulting from millions of 'small' consumers decisions in favour of convenience is a classic example. (Sub. 77, p. 140)

For example, use of urban roads generates adverse impacts in the form of congestion, road accidents, and pollution. These costs are external to the transport sector in the sense that they are not fully taken into account by those imposing the costs.

Government intervention in urban transport is sometimes also seen as necessary in securing the benefits of a city. For example, urban transport systems are seen as providing benefits over and above the direct benefits to travellers, but also contribute to the 'livability' of cities by making possible a greater degree of social and economic interaction. This issue is discussed further in chapter A1.

The existence of these external effects is often seen as justifying government intervention. For example, many participants in this inquiry saw subsidies to public transport as necessary to encourage a modal shift away from cars, thus reducing the adverse effects of private car use. As discussed in chapters A9 and A10, however, other more direct ways of approaching environmental and congestion issues may prove to be more effective.

Access

Governments also intervene to assist the transport disadvantaged. Some members of the community may not be able to afford adequate access to transport due to low incomes and/or the high cost of transport to them. The desire to provide public transport at a particularly low cost to pensioners, the unemployed, the old and the young has provided justification for government being involved in urban transport operations. Almost universally, public transport has been provided at a loss because governments have been concerned that it be accessible to as many people as possible at a price as low as possible. The ACTU and Public Transport Unions considered that:

A fundamental social objective is to ensure that everyone in the community, irrespective of income and wealth, ability/disability, or other factors, has access to convenient and affordable transport services (Sub. 271, p. 32).

A related argument is that government must ensure transport services are provided on some uneconomic routes to ensure accessibility for more remote or less densely populated urban areas. The ACT Government stated:

In the case of public transport, the services are often not essentially of a commercial nature and will not be provided by the private sector unless an appropriate subsidy is paid, eg. the provision of bus services out of peak hours and on less popular routes. It may well be that Governments, for social justice and access and equity reasons (eg. the belief that people without cars should have reasonable access to public transport) will

run services which do not fully recover costs and will use those sections of the services which are more efficient to cross subsidise those which are less efficient. (Sub. 167, p. 14)

The provision of subsidised transport by public operators is not the only way of achieving social objectives. Indeed, chapter A8 suggests it is a very inefficient way of helping those in genuine need. Other means are available: directly funding CSOs (see chapter A5), contracting private operators to supply them, and requiring private operators to supply a range a specific services throughout a region.

A4.4 Choosing the appropriate role for governments

The foregoing discussion suggests that, although there are good reasons for government involvement in urban transport, the nature and level of that involvement is not achieving the objectives efficiently, and can even have unintended side-effects. To a large extent, the confusion of roles stems from vesting sometimes unclear and conflicting objectives of government policy within the one organisation — see chapter A5.

The roles undertaken by Australia's governments were outlined in box A4.1. A number of them are discussed in other chapters. The role of government as:

- urban transport infrastructure planner is discussed in chapter A7;
- urban transport infrastructure manager is considered below;
- service coordinator is reviewed below;
- regulator is considered in chapter A6;
- infrastructure manager is also reviewed below;
- service provider is considered in chapter A5;
- provider of access for the transport disadvantaged is discussed in chapter A8; and
- funder is also considered in chapter A7.

Urban transport infrastructure manager

An issue which can figure prominently in defining the role of the operator and the planner, is the management of infrastructure which is shared throughout the industry. This includes assets such as roads, interchanges, railway track, and railway stations.

If operators were to become more commercially oriented, it might be necessary to relieve them of responsibility for shared (or potentially shared) infrastructure.

It would be unreasonable to expect them to meet commercial targets while maintaining infrastructure made freely available to competing operators. Alternatively, if charges were made for use of the infrastructure, there would be scope to frustrate competition from other operators. In the case of bus operators this may mean that the government will need to take responsibility for managing interchanges and other similar resources. In the case of rail, there is the difficult question of responsibility for the permanent way (see chapters A7, B1 and B2).

In some cases the logical implication would be the establishment of a separate authority with responsibility for this shared infrastructure. Such a suggestion was recently made by the Business Council of Australia's Transport Task Force (BCA 1993).

Service coordinator

Where service coordination is assessed to be beneficial, government may choose to:

- leave it to operators to coordinate their services voluntarily;
- require the operators to coordinate their services; or
- assume the coordinating role themselves.

Commercial incentives for operators to coordinate services voluntarily

Several participants shared the view of the People for Public Transport who commented that:

... the willingness of private operators to link in with other operators (whether public or private) is open to question. Operators may consider it in their own best interests not to cooperate with their competitors. This is a major contradiction in the argument for the privatisation of public transport. (Sub. 58, p. 4)

However, the Commission has found that private operators in many cases do coordinate with others of their own volition, as their ability to attract custom is dependent on the total transport service offered to users. For example, the private bus operators in Toowoomba, Queensland cooperate to provide some services across the boundaries of their service areas. Similarly, the State Transport Authority and the taxi industry in Hallett Cove in South Australia cooperate with a view to providing a seamless service to the user (see chapter B4).

In the United Kingdom, whilst bus operators have periodical and multi-modal tickets for use on their own services, most share in area-wide coordinated ticketing schemes involving several operators and other modes. In Singapore the co-ordination of services is facilitated by the Public Transport Council but the

provision of integrated ticketing has been left to the three operators to organise on their own account.

Hornibrook Bus Services pointed to the incentives which already exist in Australia for private companies supplying public transport services to coordinate those services:

... if you set up a system such as, for example, that we operate with Queensland Rail, we have the incentive to make it work because it's a commercial situation ... I think that if it's structured — a proper co-ordination is structured, the incentive should be there to the operators, I mean just on commercial grounds ... That's the incentive. (DR transcript, p. 404)

Even if government chooses to leave operators with the responsibility to coordinate their services, government still has a role to play in pro-competitive regulation to ensure that membership to operators' cooperatives do not become a barrier to entering the industry for some operators.

A number of participants agreed with a cooperative form of coordinating body for Australia's public transport networks, but some pointed to the need to involve various levels of government in such a forum. For example, Brisbane Transport said:

We believe a co-operative effort among local operators, together with local and state government representation, is a more effective means of ensuring service integration and coordination (Sub. 239, p. 13).

Compelling operators to coordinate their services

If government is concerned that operators would not coordinate their services of their own volition, government may create a 'compulsory cooperative' to oblige all operators to coordinate their services.

Government may choose to make membership to such a coordinating 'cooperative' a pre-requisite for a licence to operate public transport services, or as a condition of a franchise or operating contract where applicable. However the risk with such an approach is that the government may become too specific in its coordination requirements — for example, by demanding that bus operators meet every train at a particular station when a taxi service may well be more appropriate.

Box A4.4: Coordinating public transport in other countries

In most of the countries examined by the Commission (except the UK) public transport services are coordinated and ticketing integrated. However the various governments have undertaken these roles in quite different ways.

In *Leeds, United Kingdom* the government has left the operators to coordinate their services voluntarily. Since bus deregulation, a close working arrangement between bus operators, the Public Transport Executive (PTE) and the local councils has emerged. After initial mistrust a spirit of cooperation has developed between the councils and the bus companies.

A number of governments in continental Europe choose to require their operators to coordinate public transport services. In *Munich, Germany*, the Münchner Verkehrs- und Tarifverbund (MVV) coordinates public transport services and fares, including marketing its integrated fare system, in the metropolitan region. MVV is a limited liability company established by the two major public transport operators: Munich City and the Deutsche Bahn. It does not operate any services.

Each shareholder holds half of the voting rights in the company and has a power of veto over decisions of the supervisory board of the Verkehrsverbund. The board is chaired by the Lord Mayor of Munich and its other members are appointed by the Deutsche Bahn, the Federal Ministry of Transport, the Bavarian Ministries of Finance and of Transport, and the regional local governments outside the City of Munich.

Similar associations exist in most of the larger German cities (for example, Frankfurt, Hannover, Hamburg, and Munich) and in other European cities in Austria, Sweden and Switzerland.

The *Singapore* Government has set up a government agency, the Public Transport Council, to regulate public transport. The Council consists of nine government appointees and the chief executive officers of the four major public transport operators (two bus companies, the metro operator and the largest taxi co-operative). The Council coordinates public transport by issuing bus service licences, approving fares and regulating bus routes. The Council can impose whatever conditions it deems appropriate on bus service licences, including restrictions on timetables, the number of buses used, their carrying capacity, stopping points, etc.

The metropolitan government in *Toronto, Canada* has assumed the coordinating role itself. It has set up the Toronto Transit Commission, a statutory corporation responsible for coordinating public transport (except for railways and taxis) in the metropolitan area, constructing and operating public transport services. The Commissioners are selected by the metropolitan government from its elected representatives.

Appendix G contains a more detailed description of the urban transport systems in other countries.

An alternative may be to require membership to an industry association as a licence requirement, and to then contract that association to coordinate the urban public transport network. Munich and Zurich, and Singapore to some extent, rely upon such associations to coordinate services and integrate ticketing on behalf of the public transport operators (both publicly and privately owned) who are members.

This approach may have the benefit of maintaining a network-wide perspective, but such an association would need the authority to deregister operators who fail to coordinate services. Such authority would have to be monitored closely by government.

A coordinating body

A third approach to coordinating services is for governments to assume the coordinating role themselves.

It is often argued that this role precludes the introduction of new operators. This argument seems to assume that integration and coordination are effective now, when much of the urban public transport task is performed by public authorities. However, the Commission heard much criticism from public transport users throughout Australia; this was no less in cities where urban public transport was controlled by one provider, such as (until recently) the PTC in Melbourne. The most common complaints were about timetables being inaccurate or unavailable and, in the case of Melbourne trams, about inefficient scheduling — the very deficiencies sole operators are said to overcome. The Commonwealth Department of Environment, Sport and Territories made some interesting comments:

There is poor integration between different modes of transport and how they link, both in terms of timing, frequency and location of interchanges with a resultant failure to provide integrated, effective useful transport networks ... Various Governments and Transit Authorities have dictated the intermodal splits and options available for a community and only in rare cases are these integrated to allow effective intermodal transfers for commuters. (Sub. 163, p. 12)

And the Victorian Government observed in its initial submission that:

The performance of the PTC and its predecessors over the last ten years casts some doubt upon the proposition that there are economies in having one organisation providing a number of different modes ... (Sub. 186, p. 13).

Advances in ticketing technology seem to allow an integrated network incorporating a number of operators to provide common tickets and still ensure operators are paid the revenue they have earned. For example, the automated ticketing system presently being introduced by the PTC will provide the detailed trip information required on a daily basis.

Given the current environment of reform in Australia's urban public transport industry — in particular the introduction of private operators into networks previously dominated by government owned agencies — a number of governments are considering establishing new agencies responsible for coordinating the network. The New South Wales Treasury noted:

Corporatising government transport authorities so they can concentrate on supplying transport services to the market does raise the question of the need for a body to provide for planning and coordination as well as regulation for system safety (Sub. 177, p. 11).

Victoria and Western Australia are also moving in this direction. For example, in Western Australia:

The Department of Transport will assume the role of transport service coordinator ... It will be responsible for letting tenders for specific services, and ensuring that the Government's community service obligation is met, that fare structures are consistent across the board and that the standard of transport service remains the same. (Media Statement from the WA Minister for Transport on 14 September 1993)

The Public Transport Users Association pointed to experience in other countries and stated that:

PTUA neither opposes nor uncritically supports private involvement in providing public transport services, through 'contracting out', or possibly even franchising in appropriate situations. However, overall control of fares, network structure and timetabling, must rest with a single, public authority for each urban area. Zurich provides an excellent example: a public authority coordinates a diverse array of State, private and municipal operators. (Sub. 96, p. 16)

A city-wide monopoly in urban public transport *operations* is not needed to reap user benefits in the form of scheduling efficiency, network integrity and timetabling information accuracy and availability.

Government's role in coordination

Effective coordination does not need to be undertaken by government. Different types of coordinating bodies are to be found in other countries. While most have been formed by, or are, public authorities, some have been formed by the transport operators themselves (see box A4.4). In emphasising the need to distinguish between coordination and the actual provision of services, the Victorian Government argued that:

Provided that the most effective mode is allowed to operate each service, and provided that the least cost supplier within that mode is chosen for the supply of service, central coordination with multi-firm provision is the best solution (Sub. 186, p. ii).

Where government regards service coordination and integrated ticketing as desirable, it should take steps to ensure they are carried out efficiently. But this does not mean that government should necessarily carry out the tasks

itself. A cooperative of operators may be best placed to coordinate services and integrate ticketing; membership in such a cooperative must be available to all operators on equal terms. If such a cooperative does not form, or is not effective, government itself should establish a coordinating agency.

Such an agency could coordinate the services of the various operators including integrated ticketing systems and be responsible for providing passengers with network and timetable information, and may also be able to ensure provision of unprofitable services where it can be shown to contribute to patronage of the overall network.

Whatever functions government performs, they should be fulfilled as efficiently as possible. The next chapter examines in more detail the issue of GTE reform.

A4.5 The role of different levels of government

Once the issue of what roles government should perform has been settled, there is the question of which level of government should be responsible for what function. This would help to determine whether the current division of urban transport responsibilities and relationships between the three levels of government in Australia could be improved.

All three levels of government are presently responsible for the urban transport roles outlined in box A4.1. A number of participants considered that there is a need to reconsider the respective roles of each level of government in urban transport and the relationship between them. The Australian Road Federation suggested that:

There is some evidence to suggest that both the State and Federal Governments rely on the existing confused position to avoid their responsibilities to the detriment of all Australians (Sub. 13, p. 19).

Overlapping responsibilities appear to be a particular problem in roads. For example, the City of Launceston noted that while it was responsible for management of local roads including planning, design, construction and maintenance, State Government agencies are responsible for traffic management so that State approval is needed for installation of specific traffic facilities such as median islands, road humps, roundabouts, and traffic signs.

Similarly, the Commonwealth Office of Local Government observed:

Funding responsibilities for the road hierarchy are not always clear; there are some areas of overlap and omission between the various spheres of government (Sub. 122, p. 14).

The Office acknowledged that in recent years there has been some rationalisation of responsibilities. Nevertheless, it said:

A system where the different spheres of government fund different types of roads, which must be integrated to one road system, has severe implications for the planning capacity of various bodies. What each body does has ramifications for others. A local authority cannot successfully plan new urban development unless it is done in co-ordination with the funders of the larger connecting roads (that is, State or Commonwealth agencies) ... a clearer delineation of roles and responsibilities in this area is urgently required. (Sub. 122, p. 15)

Some participants also cited examples in public transport where multi-government involvement had been inefficient.

Several State Governments claimed that some past misplaced investments occurred because of the availability of tied Commonwealth funds. For example, the Victorian Government suggested that funds allocated for extensions to the tram network might have been more productively spent on rehabilitating existing routes carrying much heavier traffic. And the Western Australian Government stated:

With the exception of road planning, the relationship with local government is probably the least effective area of inter- and intra- governmental relations in the transport planning process, although, in recent times, another degree of uncertainty has been added through the Commonwealth Government's involvement in urban issues through initiatives such as the Better Cities program and Ecologically Sustainable Development. At the State level, these have been the responsibility of non-planning or transport agencies, although the Better Cities responsibility has now been taken up by the Department of Planning and Urban Development. (Sub. 170, p. 4)

Relationships between the government-owned urban transport agencies and local governments have often been poor. For example, the Western Australian Municipal Association contended that:

There needs to be greater liaison between Transperth and Local Governments in terms of both routes and vehicles. It is not unknown for Local Governments to provide facilities such as bus shelters and find, within a short time, route changes have been implemented and relocation is required. (Sub. 73, p. 13)

A regional approach?

In assessing the respective roles of different levels of government in urban transport, an important question is the extent to which existing government jurisdictions match the transport task.

Brisbane and Rockhampton are the only cities in Australia where public transport is operated and partly financed by a level of government responsible

for almost the entire metropolitan area. Even in Brisbane, however, there are problems:

... there are significant institutional problems associated with the provision of transportation within the region. Transport management is spread between the Commonwealth, State and Local Governments, and private sectors, with each operating to different budgets, policies, objectives and geographic boundaries ... Services should be developed taking account of the travel demand of people rather than restrict services because of traditional operating borders. (Sub. 173, p. 46)

Significantly, most of the local authorities in other countries the Commission examined are partly or entirely responsible for meeting the operating deficits on their public transport systems (see appendix G). Generally, local governments in Canada, Germany, Switzerland and the United States play roles in the provision of transport services and infrastructure far in excess of those by most Australian local governments.

The Consumers' Transport Council argued that many public transport systems would be logically organised on a regional basis but that:

The fragmented nature of local government, with varying numbers of councils, within the one urban region, operates against this. State Governments tend to be preoccupied with the capital cities. This association would like to see consideration given to some way of funding public transport on a regional basis. (Sub. 102, p. 4)

Such an approach would accord with that of New Zealand, United States and Canada, where regional councils or federations of councils take primary responsibility for the organisation of local transport. In some cases, regional governments, although not representing the entire metropolitan region, were able to co-operate to perform and finance these functions with minimal financial assistance from higher levels of government. The relevant local governments voluntarily formed a federation. (See appendix G for more details.)

A number of participants saw the benefits of local involvement as more relevant services, a better appreciation of people's needs, and greater accountability than when services are provided by governments at the State or Commonwealth level. The Western Australian Municipal Association contended that:

Improved intergovernmental relations will also be achieved through increased regionalisation of public transport services generally ... Local area managers should be delegated powers to make decisions to improve services at the local level, in consultation with Local Government and other community interest groups. (Sub. 73, p. 2)

The Commonwealth Office of Local Government saw an 'advocacy' role for local government as being logical due to its responsibility for land use planning. The Office quoted Bellarine City Council which stated:

Local Governments directly witness the local consequences of inadequate and uncoordinated planning; in their capacity as advocates for their community they can play a strong and powerful role in conveying to other levels of government the problems created by inadequate consideration of social needs (Sub. 122, p. 20).

As the National Accessible Transport Committee told the Commission:

There's certainly no point in not having local government involved because if you have a bus route somewhere and the bus route drops a person off on an unmade footpath without any gutter ramps, etcetera, you might as well not have a bus route there. That's at the lowest level of co-operation. (DR transcript, p. 425)

Concern for, and management of, the provision of community services is not new to local government. As the Victorian Community Transport Association pointed out, local governments are:

... a major HACC [Home And Community Care] service provider and they're the major provider that takes on a transport function. So between local areas the provision of transport to HACC clients is varied greatly, depending on whether the municipality defines it as a priority. Transport is not earmarked in the HACC budget at all so it is down at the municipal level that those decisions get made. So some deliver very good transport services and some don't. (DR transcript, p. 957)

Local government is well placed to assist with many of the government roles listed in box A4.1. For example, they could be involved, at least in the planning stages, in urban infrastructure planning and management, in service coordination and planning as well as ensuring the transport disadvantaged (particularly their constituents) have access to urban transport.

The fragmented nature of local government

As mentioned above, Australia's system of local government is very fragmented.

Regional networks cannot sensibly be planned by such a system of local government, particularly those networks with a large infrastructure component such as urban rail or guided busways. Also, integrated ticketing and timetabling may need to be organised on an area-wide basis.

The former Melbourne City Council argued against a direct Council role in running the public transport system or in maintaining the infrastructure because it would 'only add to the existing problems of fragmentation in the transport system' (Sub. 182, p. vi). Commenting on the draft report findings, CityRail stated:

... we would just observe that in a metropolitan situation such as Sydney which, including Newcastle and Wollongong would have something like 50 or more LGAs [Local Government Areas], that the very nature of urban rail and the fact that it takes people between areas means that it would be very difficult, we believe, to plan it from a

local government perspective. We do see it as a regional if not a state matter. (DR transcript, p. 554)

The Hobart City Council, too, observed that parochialism and small-mindedness sometimes stood in the way of desirable transport improvements (for example, building a cycleway on a disused section of a railway reservation) and argued that this 'city is too small to create a huge planning organisation but it is big enough to need one organisation to oversee transport planning' (Sub. 168, p. 4).

And the Bus Proprietors' Association (Vic) had similar views:

Local Government, in its present form is not the best planning medium. It is currently fragmented to a degree which would produce even more difficulty than presently exists with service co-ordination. While a regional system of planning may be acceptable in some areas it is difficult to draw the boundaries in such a way that will not require some sort of co-ordinating body to oversee the planning function. (Sub. 270, p. 3)

What role for local government?

Despite the fragmentation and competing interests of local government, there is some evidence of moves towards a regional approach towards urban transport. For example, Queensland's Regional Planning Advisory Group recommended the establishment of a Regional Transport Authority to 'manage, plan and administer (or where appropriate to have operated on its behalf) all public transport modes within the region based on the overall regional transport strategy' (Sub. 173, p. 50). In New South Wales, an *Integrated Transport Strategy for Greater Sydney* has been developed 'to overcome past obstacles to integration and to arrive at more efficient patterns of settlement supported by a balanced and viable transport system' (New South Wales Government 1993b).

As alluded to above, other countries have formed federations of councils to cover the appropriate region. The Greater Vancouver Regional District (GVRD) provides an instructive example. The GVRD is a voluntary federation of 18 municipalities, including the City of Vancouver, which undertakes a range of functions including public transport. Public transport in the Vancouver metropolitan region is coordinated by a regional transit commission which decides fares, service levels and the taxes to meet their share of the costs involved. Locally elected representatives from the municipalities in each region sit on the commissions.

In the draft report, the Commission stated that 'urban transport systems are best planned at the lowest practicable level of government, preferably by local government'. The ACTU and the Public Transport Unions emphasised the difference between involving local governments more in the planning stage for major changes in urban transport, and actually making them responsible for funding and running public transport.

The Commission acknowledges this point and concludes that urban transport systems are best planned at the lowest practicable level of government. It would be impractical to make local government, as it is presently constituted particularly in the larger cities, responsible for planning entire urban transport networks. Nevertheless, local government does have an important role to play in land use, transport infrastructure and service planning.

Funding by local government

A number of councils expressed concern that withdrawal of State government services would leave local government to fill the gap without being provided with the resources necessary to undertake this function or, as the Local Government Association of South Australia put it, as ‘provider of last resort’ (Sub. 131, p. 7).

The Commission believes that local government is best placed to contribute to the efficient incorporation of urban transport services into their local area through the management and maintenance of bus stops and railway stations and their accesses, and the advocacy of extensions to services required by their constituents. However, such extensions of service, if above the minimum service levels required of commercial operators, ought to be considered a community service obligation by the commercial public transport provider and accordingly funded by the local government beneficiary.

Whatever the urban transport responsibilities of local government, they will have little effect without adequate funding. The Commission appreciates that this point impinges on the financial responsibilities of the three levels of government in Australia, a matter which goes beyond urban transport. Yet it needs to be resolved if urban transport is to be delivered more efficiently in our cities.

Fiscal equalisation

The New South Wales Treasury argued that funds for urban transport investments have been allocated inefficiently because of problems arising from the process of fiscal equalisation. It claimed that:

The method of Commonwealth revenue allocation to transport projects has a bias towards capital investment in rural roadworks with little allocation to urban public transport projects, but this is just a reflection of the greater problems of vertical fiscal imbalance and the system of horizontal fiscal equalisation (Sub. 177, p. 13).

The States and Territories are subject to the Commonwealth Grants Commission (CGC) fiscal equalisation process. The principle of fiscal equalisation is that each state and territory should be given the capacity to provide the same standard of public services as the others, if it makes the same effort to raise revenues from its own sources and conducts its affairs with an average level of operating efficiency.

Both urban transit and roads maintenance are included in these assessments.

An important issue is whether urban transport should in fact be considered as a public service. The ACTU and the Public Transport Unions:

... support a strong continuing role for the Commonwealth Government in relation to the development of urban public transport. ... In particular we hold that it is essential for the Commonwealth to continue to provide capital funds for urban public transport upgrading projects, through a successor to the Urban Public Transport program. ... We contend that the urban transit category should stay part of the Commonwealth Grants Commission process. (Sub. 271, p. 38)

However, many States are undertaking reforms which entail public transport authorities adopting a more commercial approach. The South Australian Government's view is that all business undertakings should be excluded for Commonwealth Grants Commission assessments (Sub. 224). The Office of Transport Policy and Planning of South Australia argued against continuing to assess States' disabilities for grant allocation:

... as State Governments increasingly set commercial targets for metropolitan public transport and the distinction between private and public provision becomes more blurred ... the relevance of applying fiscal equalisation procedures — which in some way could counterbalance the financial impact of these changes — should be seriously questioned. (Sub. 224, p. 14)

The CGC 1993 review of general revenue grants relativities included a review of the urban transit category. While acknowledging the trend towards corporatisation and commercialisation, the CGC argued that urban transport would continue to be funded by government in light of environmental, equity, and other considerations, and was unlikely ever to be self-financing, and hence should remain subject to its deliberations. In response to the Commission's draft report, the Commonwealth Grants Commission stated that:

... in the Report on Issues in Fiscal Equalisation (1990), the CGC has noted that, mainly because of perceived public benefits from urban transit services (including relief from traffic congestion and pollution), all State transport authorities incur net losses on their operations. Moreover the losses are affected by such factors as urban density, age/sex composition, input costs etc which differ unavoidably from State to State. It has therefore concluded that Urban Transit should be included in the assessments and differential disabilities assessed. (Sub. 203, p. 1)

The CGC did, however, indicate in its 1993 review an intention to assess the urban transit category by its factor assessment method. This was seen as avoiding potential inefficiencies arising from the previous modified per capita difference which could result in states and territories influencing their share of grants funds through their own policies. The CGC assessed disabilities relative to the size of the relevant population, urban density, travel by secondary school children, travel by welfare beneficiaries on concessional terms, input costs, interest rates, vandalism and security. This essentially meant the larger states were assessed as bearing a higher cost in providing urban transport services. These assessments have a substantial impact on state grants. For example, Victoria and New South Wales each receive over \$100 million more in funding as a result of transport assessments, while Queensland receives about \$130 million less.

The Industry Commission has not attempted in this inquiry to undertake a detailed assessment of the merits of these disability factors. It is concerned, however, about the potential arbitrariness of the process and, more importantly, about the incentives to which it might give rise in terms of improving the efficiency of urban transport provision. But the Industry Commission notes that the Commonwealth Grants Commission takes care to ensure:

... that the CGC's methods do not affect the incentives of States to improve the efficiency of their urban transit services; this is why we [the CGC] apply the factor assessment method and adopt factor measures which are policy-neutral and allow the states to retain the full benefits of any efficiency improvements ... (Sub. 203, p. 1).

The Industry Commission considers that the question of continuing to include the urban transit category in the Commonwealth Grants Commission processes is complex and warrants further consideration as to both principle and method, particularly in the light of increasing commercialisation of Australia's urban transport agencies. However, the Commission accepts that such an assessment would need to take place in the context of a broader review of CGC processes.

A5 REFORMING GOVERNMENT TRANSPORT AGENCIES

Government agencies provide most urban transport infrastructure and most public transport services in Australia. But the institutional framework in which they operate is flawed. Their objectives are often unclear, political intervention blurs their performance, lines of responsibility and accountability are confused, and management is constrained in making key operational decisions. The efficiency of transport agencies would be enhanced if, as far as possible consistent with their functions, they were exposed to the same incentives, rules and regulations as private enterprise.

A5.1 Introduction

Most urban transport infrastructure and most public transport services in Australia are provided by state, territory, and local governments. It is critical that they do so efficiently. This chapter is about improving the performance of government transport agencies, focussing on the relationship between them and their owner governments. Fundamental changes to the regulatory and competitive environment in which these agencies operate are considered in the following chapter.

A5.2 Current institutional arrangements

The agencies which provide urban transport infrastructure and public transport services operate under varying arrangements. A consistent feature is the strong control governments exert on their operations. This control affects their fares and charges, services and how they are provided, investments, funding and employment practices — see table A5.1.

The organisational form of agencies providing public transport services varies from statutory corporation to department of state. Their responsibilities currently range from providing bus or rail services only, to providing public transport services with up to three modes, coordinating service across the system and regulating private operators.

Table A5.1: Institutional arrangements applying to urban public transport GTEs

	<i>State Transit Authority (NSW)</i>	<i>State Rail Authority (NSW)</i>	<i>Public Transport Corporation (Vic)</i>	<i>Queensland Rail</i>	<i>Brisbane Transport (Qld)</i>	<i>Metropolitan Transport Trust (WA)</i>
<i>Corporate structure</i>	Statutory Authority	CityRail is a division of the State Rail Authority (a Statutory Authority)	Corporation	Statutory Authority (moving towards corporatisation in July 1995)	Department of the Brisbane City Council	Statutory Authority
<i>Executive structure</i>	Board. Members appointed by government	Board. Members appointed by government	Board. Members appointed by government	Board. Members appointed by government	General Manager of Transport reports to the City Council	Board. Members appointed by government
<i>Funding of CSOs</i>	Operating deficit. Some CSO funding by State Government	Operating deficit. Some CSO funding by State Government	Operating deficit	Operating deficit	Subsidy payments by Brisbane City Council and State Government	Operating deficit. Some social welfare payments by State Government
<i>Fare setting</i>	Recommendation by STA, review by NSW Pricing Tribunal and determination by State Government	Recommendation by SRA, review by NSW Pricing Tribunal and determination by State Government	Recommendation by PTC and determination by State Government	Recommendation by Queensland Rail and determination by State Government	Recommendation by Brisbane Transport and the Brisbane City Council, with determination by State Government	Recommendation by the MTT and determination by State Government
<i>Investment approval threshold</i>	\$1 million	\$1 million	Varies with project	\$500 000	Varies with project	\$150 000

Table A5.1 cont/d:

	<i>State Transport Authority (SA)</i>	<i>Metropolitan Transport Trust (Tas)</i>	<i>ACT Internal Omnibus Network (ACTION)</i>	<i>Darwin Bus Service (NT)</i>
<i>Corporate structure</i>	Statutory Authority	Statutory Authority	Division of Department of Urban Services	Division of Department of Transport and Works
<i>Executive structure</i>	Board. Members appointed by government	Board. Members appointed by government	Chief executive responsible to Secretary of Department	Operations manager responsible to Secretary of Department
<i>Funding of CSOs</i>	Operating deficit. Some CSO funding by State Government	Operating deficit	Operating deficit	Operating deficit
<i>Fare setting</i>	STA recommendation and determination by State Government	MTT recommendation and determination by State Government	ACT Government	NT Government
<i>Investment approval threshold</i>	\$500 000	Varies with project	Varies with project	\$250 000

Sources: Submissions, annual reports and correspondence

These agencies are government trading enterprises (GTEs) because they substantially cover their costs and are only partially funded by government.¹

Governments also play a major role in the provision and maintenance of urban roads. The principal organisations responsible for building and maintaining urban roads are the state and territory road agencies and local governments (see box A5.1). These bodies either undertake these functions themselves, or oversee the private contractors who do.

Box A5.1: State and Territory Government agencies responsible for urban roads

New South Wales	Roads and Traffic Authority
Victoria	Roads Corporation of Victoria
Queensland	Department of Transport
South Australia	Department of Road Transport
Western Australia	Department of Main Roads
Tasmania	Department of Roads and Transport
Australian Capital Territory	Department of Urban Services
Northern Territory	Department of Transport and Works
Throughout Australia	Local governments

The state and territory road agencies are not GTEs because they receive virtually no income from their services. They are funded by Commonwealth, State and Local Governments. The Australian Road Federation describes their role thus:

... a public road authority decides what is to be done, has plans and specifications prepared and arranges for the work to proceed. The private sector may be involved in the design as a consultant and in the site work as a contractor or subcontractor. The appropriate mix of public and private sector participation depends upon circumstances, the aim being to make use to the extent practicable of the best aspects of each sector. (Sub. 13, p. 44)

It has become clear in this inquiry that there is scope to improve the performance of state road agencies (see chapter A3). Several participants pointed out that reform in road agencies is lagging behind public transport GTEs.

¹ Government trading enterprises include publicly owned or controlled enterprises which are mainly engaged in the production of goods and services for sale in the market with the intention of substantially covering their costs, whether they be incorporated under company or other special statutes or unincorporated units. The source of this definition is ABS 1990b.

A5.3 The shortcomings of present institutional arrangements

Whatever the functions of a government transport agency, the institutional framework in which it is placed and the requirements imposed on it by government can influence whether it can and does operate efficiently. Information available to this inquiry highlights several shortcomings in the present institutional arrangements.

First, the objectives given to agencies by government have often been unclear or so broad as to defy precise definition or measurement. In the words of the New South Wales Department of Transport:

The efficiency of transport services has, over the years, been affected by the fact that the authorities were unclear as to whether they should be performing a commercial transport task or providing various social and other concessions (Sub. 178, p. 19).

The Tasmanian Department of Roads and Transport (1992) has a mission statement which requires it to: 'encourage and conduct a safe, reliable and efficient road and transport system for the benefit of the Tasmanian community ... to promote the concepts of social justice in transport'.

Second, intervention in day-to-day decision making has been common, blurring performance measurement and accountability. The Australian Tramways and Motor Omnibus Employees' Association (Brisbane Branch) claimed:

Public transport is funded both directly by the user and by the government. Over the years public funding of transport has been done for political as well as social reasons. (Sub. 32, p. 3)

In addition, a former Chief Executive of the Victorian PTC has said:

I don't take great pride in the unions running a book on how quickly they can overturn a management decision by going through the front, back, or side door of government (Starrs 1994 forthcoming).

Third, the lines of responsibility and accountability have often been confused. The Victorian Commission of Audit commented in respect of the PTC:

Accountability for results has always rested ultimately with the Minister. Policy affecting service levels, line extensions or closures, freight rates and passenger fares has always required approval at that level. The policies adopted have often gone against commercial principles, although the Transport Act provides that the PTC may have specific formal instructions from the Minister printed in the Government Gazette. This is rarely done. (Victorian Commission of Audit 1993, p. 139)

Box A5.2: Institutional changes in Australia's urban public transport GTEs to date

New South Wales: Under the *Transport Administration Act 1988* and the *Passenger Transport Act 1990*, public and private transport operators in NSW are treated as equal commercial bodies in contract tenders. The STA has recently been divided into business units along geographic lines. CityRail has divided its operations into three broad regions with line managers for specific sections.

Victoria: The *Transport (Amendment) Act 1992* and public corporations legislation has been passed. Corporatisation of the Public Transport Corporation (PTC) is proceeding, including establishment of an accountable board to run the PTC along commercial lines 'to separate regulatory and operational functions and to give the service delivery organisations a clear and more commercial charter' (Sub. 319, p. 1).

Queensland: Queensland Rail (including Citytrain) is to be corporatised by June 1995 under the *Government Owned Enterprises Act 1993*. Queensland Rail has been reorganised 'with major core businesses allowing clear lines of responsibility and accountability' (Sub. 327, p. 6). Brisbane Transport has no plans to corporatise its activities: it contends that efficiency can be maintained through 'competitive tendering, setting of minimum service standards, consistent subsidy structures, CSO determination on a service-by-service basis, and setting of performance standards to be met or exceeded' (Sub. 239, p. 15).

Western Australia: The Western Australian Government has announced plans to corporatise Metropolitan Transport Trust (Perth) over three years and open it progressively to competition from private and public operators of buses, trains and ferries.

South Australia: The South Australian Government has introduced a *Passenger Transport Bill* which provides for the creation of a new Passenger Transport Board responsible for contracting, licensing and promoting passenger transport services; and abolition of the STA Board. The STA would become a publicly owned agency (Transit Adelaide) responsible for delivering services through negotiated and tendered contracts with the new Board.

Tasmania: The Tasmanian Metropolitan Transport Trust (Metro) is a trading enterprise and operates under the *State Authorities Financial Management Act 1990*. The Tasmanian Government is in the process of corporatising 'Metro'.

Australian Capital Territory: ACTION's full operating costs have been identified and separated from other government programs. However, the ACT Government 'does not believe that corporatisation of ACTION is the most appropriate model' to achieve 'maximum accountability and efficiency of service provision' (Sub. 228, p. 9).

Sources: Various submissions and annual reports.

Experiences like this are not confined to Victoria. The Metropolitan Transport Trust of Tasmania stated that:

Until recent years, most publicly owned transport systems made inappropriate investment decisions due to the imposition by government of inflexible and politically driven policies (Sub. 148, p. 35).

Fourth, management of transport agencies is constrained in making operational decisions. Examples are the control by government of fares (both their structure and levels), services provided (routes, frequencies and vehicle standards), investment and employment decisions.

A5.4 Improving the institutional arrangements: corporatisation

The shortcomings outlined above are widely acknowledged across Australia and a majority of the States have recently initiated corrective action — by beginning the process of corporatising their urban transport GTEs (see box A5.2).

The Commission considers that the efficiency of these urban transport GTEs would be enhanced if, as far as possible consistent with their functions, they were exposed to the same incentives, rules and regulations as private enterprise. This can be achieved through the process of corporatisation — a process involving a number of steps that can be conveniently grouped under three headings:

- giving the agency clear commercial objectives;
- making it accountable to the parliament for its performance; and
- allowing it autonomy in the conduct of its day-to-day operations.

While elements of the corporatisation approach should also apply to the road agencies, the absence of direct road pricing (at least in the short to medium term) limits the degree to which commercial objectives can be pursued.

There is scope, however, to improve the way road agencies work internally by forming semi-autonomous units, evaluating managers on performance and, if appropriate, using rewards to encourage improvements. Road agencies should allocate all maintenance and road building works through a competitive tendering process. In this respect, the ACT Government already contracts out all new construction and approximately 70 per cent of ACT road maintenance to the private sector. And the Commission is encouraged by the Victorian Government's recent moves to restructure the Victorian Roads Corporation:

... to provide a greater focus on its core businesses — road system management, traffic and road use management, road safety, and registration and licensing. Services will be

delivered on a more competitive basis through the regional network, with an increased emphasis on contracting out including the progressive outsourcing of road maintenance. Input services such as road and traffic design, information technology, etc. are in the process of being either outsourced where this is shown to be efficient, or provided internally on a commercial basis. (Sub. 319, p. 9)

Clear commercial objectives

For an urban transport agency to perform effectively as a GTE, it needs to be given objectives by government which are clear and capable of practical implementation. If objectives conflict, GTE management will need to assess which objectives to pursue with higher priority than others; and managers could implement policies which contradict their owner-government's wishes. Governments and their GTEs need a mutual understanding of the objectives to be pursued. This can be achieved through the corporate planning process (see below).

It is essential to separate quite clearly a GTE's commercial objectives – the efficient performance of the commercial transport task – from any social objectives which the government may wish to pursue. As the NSW Treasury said:

Some barriers to improved economic efficiency come about because governments in the past have required the transport authorities to pursue a range of social policy objectives which were essentially of a non-commercial nature. Community service obligations ... impose substantial costs and to address this problem it is necessary to separate the commercial and non-commercial activities of transport authorities. (Sub. 177, p. 9)

Community service obligations

All state and territory governments require their urban transport agencies to satisfy various community service obligations (CSOs) – see chapter A8. The management of CSOs is therefore crucial if they are to be delivered effectively and at least cost to the community. The Australian City Transit Association commented that:

Identification and costing of Community Service Obligations (CSOs) loom as an essential component of any funding scenario which seeks to place transit agencies on a commercial footing. In Australia, for example, it is not uncommon for operators to carry two thirds of total patronage as concession holders and for extensive networks of poorly patronised off peak services to be maintained in the general community interest. It should be emphasised that public sector transit agencies are generally required to undertake a significant range of CSO activities and this in turn impacts on relative cost comparisons with the private sector. (Sub. 174, p. 7)

The Commission considers that the social objectives behind individual CSOs should be clearly identified and their cost measured. These are not simple

matters, but they are starting to be addressed by governments across the country.² It should be remembered that the measurement of CSOs requires no more economic and financial management information than that required for performance monitoring and good GTE management practices.

Governments also need to consider whether their CSOs are soundly based. As discussed in chapter A8, there are indications that many of them are missing the mark and not assisting the transport disadvantaged as well as intended. A judgement should be made on a case-by-case basis as to whether the benefits of the social objective pursued exceed the economic costs. Direct government funding of CSOs provides an appropriate discipline on governments for this to be done.

Board members

Part and parcel of giving a GTE clear commercial objectives is, of course, the appointment of board members solely on the basis of their experience, knowledge and skills relevant to those objectives. This does not rule out people from transport user or union backgrounds being appointed to the board – but they would be there because of their skills and expertise, rather than to represent particular interest groups.

The situation in Western Australia, for example, is unfortunate in this respect. While the *Metropolitan (Perth) Passenger Transport Trust Act* requires the Minister to be satisfied that board members have wide experience and capacity in transport, industrial, commercial or financial matters, it specifically requires the appointment of one person nominated by the Trade and Labour Council of Western Australia and one person who is a user. The ACTU and Public Transport Unions argued that such a requirement is ‘crucial’, given that ‘board members are nevertheless appointed in an individual capacity and subject to the usual confidentiality requirements’ (Sub. 271, p. 40).

Separating out regulatory functions

A further issue is the desirability of separating the regulatory task from the commercial functions of a GTE. That does not mean the government cannot be involved in both. But conflicts of interest may arise, or appear to arise, if the

² The Steering Committee on National Performance Monitoring of Government Trading Enterprises has commissioned a paper on some definitional, costing and funding issues associated with CSOs and is expected to be released in 1994. The paper is intended to encourage a more consistent approach to the treatment of CSOs by governments. The NSW Treasury has prepared a policy paper entitled ‘A CSO Policy for NSW GTEs’. The Commission has addressed the CSO issue in a number of recent inquiries into the activities of GTEs, for example, in its Report on Mail, Courier and Parcel Services (IC 1992)

same agency is responsible for setting standards or policing safety and environmental matters for activities it engages in. For example, safety and service standards regulation might not be pursued solely in accord with their objectives, if their interpretation could increase a GTE's revenue.

To avoid such conflict, or the suspicion of conflict, to increase transparency and accountability, and to enhance the efficient delivery of both functions, the Commission considers that regulatory activity should be separated from the provision of services.

This is recognised in NSW, for example, whose Department of Transport reported that under the *Transport Administration Act 1988*:

Regulatory functions, such as safety regulation, have been transferred to the Department of Transport to ensure that a regulatory role does not conflict with a commercial role (Sub. 178, p. 2).

For similar reasons the task of ensuring that public transport services are coordinated, as well as the franchising and contracting out functions, should be the responsibility of a separate agency from the service provider. The Victorian Government commented on problems it has witnessed when one organisation is responsible for both:

The PTC's role in Melbourne is to organise scheduled public transport, and to manage the rail, tram and bus operations which it owns. This can create conflicts of interest. At one time, the Metropolitan Transit Authority was both deciding the conditions under which private bus contractors should operate, and buying their businesses. At the same time, its own comparable bus operations were less efficient than the contract operations, and the purchased bus lines were made less efficient in the Met's hands by the substitution of its own lesser standards of efficiency. ... The problem with one organisation which is both operator of some modes and manager of subsidies for others, as has been seen in Melbourne in the recent past, is the temptation to protect the owned and operated modes (trains, trams, buses) from the competition of more efficient contractors. (Sub. 186, pp. 13, 14)

The Bus Proprietors' Association (Vic) welcomed the separation of these functions:

The separation of regulation and service delivery is a key concept and it is pleasing to see the Commission's strong recommendation for such action. Without separation of these powers it is extremely difficult to achieve objective planning of the overall transport system without compromising co-ordination of modes or best utilisation of infrastructure and assets. (Sub. 270, p. 1)

Accountability

If a GTE is to be accountable to the parliament through the relevant minister(s), as it should be, its owner government needs to take certain steps to make this

possible. The accountability requirements may be set down in legislation, with the main mechanism being the annual report and associated financial statements. The GTE should be subject to external audit.

A corporate plan needs to be prepared regularly by the board and approved by the relevant Minister(s). The annual report provides a vehicle for the GTE to report the strategies and policies it is pursuing in fulfilling the requirements of the corporate plan. It should also cover certain financial matters, including an assessment of the GTE's performance relative to the financial targets contained in the corporate plan, and the cost of fulfilling its community service obligations.

The overall performance of GTEs is not reflected in a share price, so other methods must be used. For example, average target rates of return on assets or

Box A5.3: Examples of performance indicators for public transport authorities

Financial indicators

- return on assets
- return on equity
- operating cost per vehicle kilometre
- operating cost per boarding
- cost recovery
- average fare per boarding
- expenditure per boarding
- revenue per employee

Non-financial indicators

- boardings per kilometre operated
- service delays
- service cancellations
- kilometres per vehicle
- employees per vehicle

* These and other indicators are being used by the Steering Committee on National Performance Monitoring of GTEs

equity are standard private sector measures of performance, and are increasingly used in the public sector. They are appropriate for GTEs such as public transport agencies.

Some data are already collected, for example, by the Australian City Transit Association to allow its members to derive a comprehensive and comparative set of statistics and performance indicators.

The Steering Committee on National Performance Monitoring of Government Trading Enterprises has also begun to collect data for a consistent set of performance indicators — (see box A5.3). A number of participants criticised the performance indicators shown in the draft report for the lack of measures showing quality of service from a user's perspective. Brisbane Transport noted:

A very narrow selection of performance indicators for public transport authorities is outlined in Box A5.3. Under non-financial indicators, surely service quality assessment (customer expectation and satisfaction ratings) ranks of high importance. (Sub. 239, p. 16)

The Steering Committee is working to improve the reporting of service quality indicators. Likewise, Austroads is formulating a group of projects on performance measurement which aim to provide consistent performance indicators for road authorities (see chapter A3).

Autonomy in day-to-day operations

The Commission considers that, once clear commercial objectives have been given to a GTE and accountability arrangements have been well established, efficiency is enhanced if Government and ministerial oversight is removed as far as possible from the day-to-day operations of the GTE. This supports a statutory corporation, separate from the departmental structure of government.

Local, State and Territory Governments should remain at arm's length from the day-to-day activities of their agencies so that the performance of the board and management can be clearly assessed. As owners, governments could still set limits to investment and the range of activities undertaken. But if governments want to issue directions on the conduct of an agency's day-to-day operations, they should be in writing and tabled in parliament. A board should not be required or expected to seek ad hoc ministerial approval for individual activities within its prescribed responsibilities, but ought to produce regular operating and corporate plans; and get government approval of the latter.

Brisbane Transport saw this requirement as limiting the ability of its government-owner to influence the level of service provided to ratepayers:

There are some hidden advantages or even overt advantages in having local government politicians have a hands-on approach to performing the service, to establishing a level of service that's appropriate for the community. That is not an opportunity if you corporatise. (DR transcript, p. 379)

A corporatised public transport GTE can still be instructed to extend particular services by government. However, such instructions should be made formally and publicly.

Day-to-day operating autonomy means an agency having the freedom, for example, to contract out activities where it finds that cost-effective. In a similar vein, autonomy in day-to-day operations should mean the GTE having the freedom to determine the terms and conditions of employment, not being subject to constraints of government employment policies and practices (see chapter A3).

Taxes, charges and business regulation

At the same time, urban transport GTEs should not be advantaged compared with private enterprise merely because they are government-owned. This has

implications in particular for taxation, borrowings and competition. They should be liable for the full range of Commonwealth, State and Local government taxes and charges, or required to make an equivalent contribution to State and Territory revenues. These taxes and charges (or their equivalents) need to be paid to ensure the efficient allocation of resources, including capital, among the various activities in which they can be used, be those activities in the public or the private sector.

Likewise, urban transport GTEs should be made subject to the Trade Practices Act and no longer be excluded from the coverage of the Prices Surveillance Act. The Commission supports the approach taken in the recent (Hilmer) Report on National Competition Policy (Independent Committee of Inquiry 1993) which allows for the operation of state-specific regulators, such as the NSW Pricing Tribunal, within a national framework.

A5.5 Conclusion and recommendations

The Commission concludes that the efficiency of urban transport agencies throughout Australia would be enhanced if, as far as possible consistent with their functions, they were exposed to the same incentives, rules and regulations as private enterprise. This means placing them in a 'corporate' environment. **The Commission therefore recommends that the following initiatives be implemented for all urban transport GTEs without delay:**

- **they be constituted as statutory corporations, which are separate from the departmental structure of government;**
- **regulatory functions be removed from their responsibility;**
- **board members be appointed on the basis of individual experience, knowledge and skill, and not as representatives of interest groups;**
- **boards be accountable to the parliament through the relevant minister(s);**
- **all directions issued by government be in writing, and tabled in the parliament;**
- **boards prepare corporate plans for approval by the relevant minister(s). Each corporate plan should contain appropriate financial and non-financial targets, including target rates of return on assets;**
- **governments clearly specify and make public the community service obligations they expect the enterprises to satisfy. Their costs should be funded by direct budgetary payment;**

- **they be liable for all taxes and government charges (or their equivalents);**
- **they be made subject to the Trade Practices Act and no longer be excluded from the coverage of the Prices Surveillance Act; and**
- **they be free to determine their terms and conditions of employment, not subject to the constraints of government employment policies and practices.**

The Commission appreciates that several State Governments have already started the process of corporatising their urban transport GTEs (see box A5.2). That is welcome. Other governments, State, Territory and (where applicable) Local, should commence the process immediately. The matter becomes all the more urgent when considered in the context of the more competitive environment for urban transport which is proposed in the next chapter.

The Commission acknowledges that in the absence of direct road pricing, road agencies will not be appropriate candidates for corporatisation. However, as noted earlier in this chapter, there is scope to organise them more efficiently.

A6 REGULATION AND COMPETITION

There are good reasons for some regulation of urban transport, particularly to ensure public safety. However, regulatory approaches which restrict competition entail high costs. More competition is needed in urban transport, to bring better services at lower cost, while still meeting safety and social objectives and ensuring coordinated services. The best approach to increased competition will vary between modes and cities. Some of the reforms recommended in this chapter are already being implemented in some states and territories, but others lag behind. The longer it takes to introduce reforms, the more consumers will wait to reap the potential benefits.

A6.1 Introduction

This chapter examines whether changes to the relationship between government, operators, and users might lead to more efficient urban transport systems, delivering better services to users at lower cost while still enabling broader government objectives (such as equity) to be met. As the South Australian Government stated:

The key institutional issues in urban transport surround the structure of the relationship between Governments, the private sector and users. No aspect of urban transport exists in a completely free market: taxis are regulated; buses are subsidised; roads are provided 'free' by taxpayers. Clearly, government regulation of private services and government provision of services are the two major areas of intervention. It is also clear that economic principles are not consistently applied to these interventions: the costs of regulation are rarely recognised in decision-making; publicly provided services are in many cases not provided efficiently, and subsidies are not transparent. (Sub. 144, p. 16)

While administrative reform of government transport authorities (discussed in the previous chapter) will secure large gains, it will still leave in place the host of regulations which prevent competition from making urban transport systems as efficient as they could and should be. Key questions are whether we need more fundamental changes to promote efficiency through competition, and how they might be implemented.

A6.2 The role of regulation

Regulation of urban public transport in Australia — particularly economic regulation or the restriction of new suppliers into particular markets — has a long history.

Urban passenger rail services in Australia are provided exclusively by government organisations, in most cases (Sydney, Melbourne and Brisbane) by a division of the statutory authority responsible for freight and country passenger services. Adelaide's urban rail services are part of an integrated metropolitan transport authority, and Perth is a contractual arrangement between Transperth and Westrail. All urban railways are subject to government direction and control (details of the regulatory environment for urban rail are at chapter B1).

Where buses services are not operated directly by government, they are provided by private operators licensed by, or under contract to, government (see chapter B3). These arrangements confer virtually exclusive operating rights to a private operator on a route or within a geographical area. In all cases government controls the fares charged, routes operated and frequency of service.

Taxis were originally regulated by local governments, partly to control street and kerbside activity by taxis, particularly in city centres. In some regional cities, councils are still the licensing body. In all capital cities, taxis are controlled by State bodies regulating entry, fares, vehicle standards, operating practices (for example, restrictions on touting) and sometimes even vehicle colour (see chapter B4).

There is a role for government to modify market outcomes which are seen as unsatisfactory; regulation is but one means of achieving such modification. Concerns may relate to issues such as abuse of market power, public safety, or environmental effects, and the achievement of social objectives (see chapter A4).

A6.3 The effects of regulation

Regulation in its broadest sense includes economic regulation (restrictions on entry into an industry), but also encompasses restrictions on competition resulting from direct government provision, particularly when provision of subsidies effectively nullifies the potential for alternative suppliers to compete, even where there are no legislative barriers to entry.

It is important to recognise that regulation can impose costs which adversely affect consumers, taxpayers, and suppliers (see box A6.1). In particular, regulations which have the effect, intended or otherwise, of restricting competition, may give rise to inefficiencies in urban transport services. The focus of this chapter is whether there are better ways of meeting the objectives which regulation seeks to achieve.

Box A6.1: The impact of economic regulation

- the restriction of taxi licences costs consumers about \$300 million a year. This equates to about \$2 a ride on average (see chapter B4);
- a person wishing to start a taxi business on the Gold Coast must first spend \$320 000 to buy a taxi licence (see chapter B4);
- changes to bus services in regional centres are not approved locally, as decisions are made in the capital cities (see chapter B3);
- private bus operators in Victoria effectively make more money, the fewer passengers they carry (see chapter B3);
- a community bus service in Pakenham, Victoria is forced to advertise surreptitiously, even though there is no bus service in the area (see chapter B5);
- operators have little or no control over fares, investment decisions, frequencies, destinations and times of services as governments either directly make decisions or regulate these aspects of operation (see chapter B1); and
- buses are required to act as feeders to train services and are prevented from competing on the same route.

Inefficiencies and higher fares

Regulation can restrict the development of transport services which are responsive to market demands by protecting existing operators and their services from competition. The inability of alternative suppliers to enter the market provides an environment in which inefficiencies in management and work practices can flourish (see chapter A3), and which restricts innovation.

Inevitably, regulation of entry leads to higher operating costs which have to be passed on to consumers in higher fares or to taxpayers.

One effect of government regulation of the taxi industry, for example, is the high values attaching to taxi licences because of the restrictions on taxi numbers, about \$2.5 billion in 1993. While the sale of taxi plates represents a source of easy revenue for State and Territory Governments, it inevitably results

in higher prices to consumers. The general impacts of taxi regulation were described by the ACT Government as follows:

While regulations currently in place provide the existing taxi industry with a guaranteed market, the restrictions on entry also have the effect of pushing up the value of taxi licences. These values will reflect the guaranteed returns expected from operating within a protected market and may work to the detriment of consumers as the high cost of obtaining licences will inevitably be passed on. Furthermore, the restrictions on entry to the industry protect existing operators from competitive conditions which might otherwise further reduce costs. More open entry arrangements may also enhance the flexibility of the service. (Sub. 167, pp. 32-33)

Cross-subsidies

Regulation may result in some users being charged higher prices to pay for the provision of services to others. For example, if an exclusive franchise is granted to an operator subject to providing certain unprofitable services without subsidy, the inevitable result is over-charging on the commercial routes. Such over-charging discourages worthwhile travel which would otherwise be undertaken.

Regulation may also have questionable equity effects: why should people pay for subsidised services for others simply because they travel in the same geographic area? Such social policy goals are arguably more appropriately funded out of general taxation.

Impact on innovation

A number of participants considered that existing regulation was hindering the development of transport services which met changing travel demands. The Victorian Bus Proprietors Association argued that:

... there should be regulation of public transport, but limited to those areas of public safety, public interest and consumer protection which are considered necessary ... The current control imposed on the bus industry in Victoria is considered to be excessive, particularly in contracted route service operations. While the regulation is reasonably appropriate, contractual controls have destroyed the industry's ability to innovate and operate as efficiently and effectively as a truly private enterprise system. (Sub. 84, p. 4)

Mr Cotgrove added:

Across the spectrum of society, the old rigid, regulated, conformist, centralised structures of the industrial age are giving way to new flexible, deregulated, pluralistic, decentralised structures of an emerging post-industrial era ... The *necessary* journeys of the past, to work, to shop, to school and to conduct personal business, are being superseded by an increasing array of *discretionary* journeys characteristic of post-industrial lifestyles. Journeys to entertainment, recreation, and leisure are becoming more important relative to journeys to work, shop, and school. As a result, the centralised, operator-controlled, fixed-route, fixed-time inflexible systems of the

industrial-age public transport era are becoming less able to cope with the dynamic, flexible, and discretionary travel demands of post-industrial society. (Sub. 160, p. 7)

Similarly, Mr Glazebrook claimed that too much regulation and the provision of guaranteed subsidies had limited the industry's imagination and capacity to invest in new technology:

To all intents and purposes, trains and buses are much the same as they were three decades ago, with little or no increase in speed, and only some improvement in reliability and comfort. More importantly, there has been almost no attempt to understand the *potential* market (as opposed to surveying existing passengers), little or no strategic marketing, very few genuinely new products or services developed, and extremely slow adoption of new technology, particularly in the information area. This can be seen from a comparison with other industry sectors such as Freight Transport, the Banks, the Airlines, the Travel Industry, the Hospitality Industry and even the Post Office. (Sub. 146, pp. 8-9)

In its initial submission to this inquiry, the Western Australian Government acknowledged that government regulation of buses restricted innovation, such as the use of minibuses and the growth of community transport services.

Restrictions on consumer choice

At present, there are restrictions on the extent to which different modes of urban transport are allowed to compete with each other. For example, buses are often required to act as feeders to trains and are prevented from competing on the same route. The choice of mode is often dictated not by what people want or need, but by what regulation allows. Where a single public transport authority controls all modes, there is a tendency to limit the extent to which different modes compete.

One outcome of this regulation is the assignment of a particular task to a more costly mode of transport. Appendix D suggests there is not an optimal division of the urban transport task between different modes in either Adelaide or Perth (see box A6.2). Unit operating costs per passenger journey are typically much higher for heavy rail than either trams or buses. For example, according to the Steering Committee on GTE Monitoring, in Melbourne in 1991-92, expenditure per passenger boarding for rail was \$3.41, compared with \$1.94 for trams, and \$2.76 for buses. In Adelaide, corresponding figures were \$7.42, \$3.47 and \$2.38 respectively.

These comparisons need to be qualified by the fact that average journey length is typically much longer for rail than for other modes, and Melbourne buses are not allowed to compete with trams on the more highly patronised inner-city routes. In addition, the figures do not incorporate estimates of any external costs (for example, pollution), although they do put at least an implicit value on them. For example, the Victorian Government noted that, after subtracting the cost of

unnecessary conductors, operating Melbourne's present tram service costs approximately \$45 million more a year than if buses were used. It commented that taxpayers pay heavily for its residents' preference for tram travel and the apparent environmental advantages of trams.

Box A6.2: Costs of service — rail and buses

Appendix D finds that in Adelaide, Melbourne and Perth buses have lower costs of service per passenger-kilometre and seat-kilometre than rail, trams or ferries. It also concludes that in these cities:

- the average real cost of service per passenger-kilometre for buses is more than two-fifths lower than for rail;
- the average cost per seat kilometre for rail services is double what it is for buses;
- the difference in the cost of service is partly due to the fact that buses use less capital, and require less expenditure on maintenance;
- trains do not have load factors which are sufficiently higher than buses to compensate for their higher capital requirements; and
- a higher level of service and higher costs do not necessarily imply that rail is inefficient relative to buses. It may be that rail offers passengers a superior service in terms of travel time, convenience and comfort, for which passengers are willing to pay.

Regulation may have the effect of restricting the travel options available to potential travellers by preventing relevant services being offered. This may impact particularly harshly on those with limited transport options (see chapter A9). The Community Transport Organisation (CTO), for example, said of the NSW Passenger Transport Act:

While the legislation makes it plain that operators under commercial contracts have exclusive rights only to regular route public passenger services the Department of Transport has made it clear to the CTO that they consider that exclusivity to cover all public passenger services. The CTO feel that this interpretation is a major backward step as it will serve only to discourage or prevent the development and establishment of new innovative services by operators other than the contract holders. We are of the strong belief that there are many more benefits to be had by deregulating the public transport industry than are to be gained by the establishment of private monopolies, a major consequence of ... the Passenger Transport Act. (Sub. 28, p. 12)

A6.4 The scope for competition

Largely in recognition of the failure of existing policy measures to deliver efficient, cost-effective, and integrated urban transport systems, there has been an increasing willingness in Australia and in other countries (see appendix G) to examine other possible ways of organising transport services.

The issue is not about ownership, whether it is public or private. It is about the level of competition and accountability within the system.

The question is therefore whether changes to existing regulatory arrangements governing urban transport in Australia can achieve community objectives in a more cost-effective way than they do now.

The general trend is towards reducing regulatory barriers. A number of states are now bringing in new players. This has been evident in recent initiatives in Victoria, Western Australia and South Australia to tender out bus and other transport services.

Competition and the private car

Focussing too much on promoting competition between the various modes of public transport overlooks a more fundamental issue in urban transport: competition between the car and public transport.

The ACTU and Public Transport Unions thought that introducing more competition into the public transport sector would exacerbate the switch from public transport to private cars.

Our serious worry is, however, that, if the Commission's approach of free-for-all competition in and privatisation of urban public transport services were adopted, ... a mode shift in the exact reverse direction would take place — from public transport to car — as has already been the case following bus deregulation in the UK and New Zealand. (Sub. 271, p. 20)

The Commission observes that, if travellers on all modes were made to pay the full cost of their travel (including third party costs such as pollution and congestion — discussed in detail in chapters A9 and A10), users would be able make their own, better-informed choices.

The Queensland Government commented on the draft report:

While [it] recognises that the primary competition to public transport is not other public transport providers but private motor vehicles, this is not adequately addressed in the recommendations. The competitive discipline should be focused on increasing overall market share, not on competition between bus, rail and taxi operators. (Sub 327, p. 3)

Public transport needs to compete more effectively with the private car. It is preferable for this to be achieved by improving the quality of service and reducing costs than to subsidise public transport or penalise car use. As noted in chapter A2, public transport faces a significant challenge in matching the attributes of private vehicle travel (for example, its mobility, comfort and flexibility). The Victorian Government argued that:

... every mode is in competition with others and with alternatives to making the trips at all ... Unless public transport is subjected to vigorous internal competition, it will fail adequately to compete with its alternatives: private cars and trip-substitutes. (Sub. 186, p. 34)

The need to compete more effectively with the car strengthens rather than detracts from the case for competition within modes.

Competition in public transport

Many participants agreed that there is a need for an approach to provision of public transport which is more responsive to the needs of consumers. For example, the Monash Transport Group said:

It is our contention that the most important reform in urban public transport is institutional. It is vital that a greater degree of market power is transferred to users and potential users, so that they can purchase the services they need and are prepared to pay for, rather than have no choice but to use (or ignore) the services which a bureaucracy chooses to provide for them. In our view, this implies a market oriented enterprise, either through privatisation or corporatisation. (Sub. 35, p. 4)

Different modes of transport are not perfect substitutes for one another. Nevertheless, intermodal competition places significant pressure on each mode to provide an efficient service to consumers. This is particularly important for modes such as rail, where the scope for competition within the mode may be limited.

Some modes may require time to become competitive. In particular, it is often argued that institutional reforms (for example, equal treatment of rail and road infrastructure) must be effected before rail can be expected to compete with other modes. In New Zealand, for example, buses were not permitted to compete directly with rail or trolley buses, ostensibly on environmental grounds. Until full competition is achieved, any preference given to particular modes should be explicit in policy. For example, if it is decided to run a late night train service even where a bus service would be cheaper, the differential should be recorded as a community service obligation (CSO).

Even when regulatory barriers between modes are dismantled, it is important to guard against de-facto protection of particular modes. For example, tenders for services should not be specified in such a way as to exclude particular modes.

The taxi industry in New Zealand complained that it was excluded from bidding for bus routes because tenders required particular vehicle seating capacities.

There are a number of ways competition can be injected into the delivery of urban transport, including open access, competitive franchising, creating smaller units in government authorities, and contracting out non-core activities.

In its purest form, open access relies on market forces to determine the provision of transport services. In practice, government involvement is generally seen as necessary, at a minimum, to ensure safety and protection from abuse of market power in industries which are seen to have monopolistic tendencies. For these reasons, there have been limits to the deregulation of urban transport in the United Kingdom and New Zealand.

Franchising involves periodic competition (through competitive tenders) for the exclusive right to provide services in a particular area for a defined period, rather than ongoing competition in the market. This approach is generally seen as most applicable where an industry is perceived as not naturally contestable or where there are concerns that open access would lead to instability. The success of this approach is likely to depend largely on how the contracts are specified (particularly the length of tenure) and whether the process of allocation is fully competitive.

In many cities, government public transport authorities dominate the provision of urban transport services. Because of the lack of private competitors, splitting up these authorities into smaller units may be an effective and speedy way of generating competition. Such a division could be both between modes (for example, separate bus from rail) and within modes (for example, separate bus operations based on depots).

Another way of introducing some competitive pressures is to contract out functions such as cleaning, maintenance, information technology, and other input services. Several public transport and road authorities in Australia are contracting out such non-core activities.

A range of factors will affect which of these options is appropriate in particular circumstances. The approaches are not necessarily mutually exclusive, and what is most applicable is likely to vary among modes and cities. For example, different characteristics of buses compared to rail or taxis suggest tailored approaches. Similarly, what is appropriate for Sydney may differ from what is appropriate for Hobart. Selection of the appropriate approach requires careful thought.

In choosing between these broad approaches, a key consideration is whether there are elements of natural monopoly present (see chapter A4). When natural monopoly does exist, there will generally be a need for pro-competitive

regulation. For example, where competing operators share infrastructure, there will be a need for government to ensure that the terms and conditions of access to the infrastructure is not discriminatory between different operators. The 1993 (Hilmer) *Report on National Competition Policy* recommended some principles on this question and proposed how they may be implemented (see chapter B1).

In response to the draft report, the ACT Government felt the Commission's focus was too narrow:

It is also clear that the pressure of competition is a strong discipline for cost reduction and encouragement of innovation for both public and private sectors. The Government has a clear objective to provide an economic environment which is conducive to competition and to the success and growth of the private sector. The Government notes, however, that while annexures to the draft report example efficient public sector providers, the report itself assumes that privatisation is the only answer. (Sub. 228, p. 1)

However, the Commission is not proposing privatisation. Concerns about ownership are not the focus of this report. The Commission is proposing constructive competition.

Where a high value is placed on market stability, options which give government a greater degree of control (for example, franchising) may be preferred. But the overriding concern must be which approach, or combination of approaches, to competition is likely to bring about the greatest benefits in terms of better services at lowest cost to the community. All this underlines the need for a case-by-case and city-by-city assessment.

The overseas experience

In many industrialised countries the main competition in urban transport is between public transport and the private car. As the car has increased in popularity and use, declining ridership and increasing costs of public transport have caused governments to seek changes to improve its attractiveness and reduce subsidies. In many cases this has involved introducing more competition into the system.

Many participants cited the United Kingdom and New Zealand moves towards increasing competition in urban transport markets by substantially reducing the economic regulation of them. In the UK, economic regulation of urban bus routes was virtually eliminated by permitting open entry in towns and cities outside London (following the experience gained in the long-distance bus market), and by gradually franchising routes and areas in London. Increasing competition for bus services was accompanied by parallel changes including less regulation of taxis, privatisation, and reform of the labour market. In New Zealand competition was increased in the taxi industry by relaxation of entry

provisions, and in urban buses through competitive tendering. In both the UK and New Zealand, urban transport reform was part of a broad national program of micro-economic reform.

Participants' views on the UK and New Zealand experience varied widely, ranging from disastrous to significantly beneficial. The Commission held discussions with those directly involved (see appendix G), and commissioned a consultancy to evaluate bus reform in them (see appendix F).

After changes to regulations governing the bus industry in the United Kingdom and New Zealand both countries benefited from:

- greater levels of cost recovery;
- lower levels of bus operating costs, ranging from savings of 20 per cent in London, to 30 per cent in New Zealand and 40 per cent in other areas in the United Kingdom;
- improvements in labour productivity, due mainly to public operators adopting practices similar to those employed by their private counterparts;
- declining levels of government subsidy needed to operate bus services. For example subsidies in New Zealand fell from between 10 and 50 per cent, and in the United Kingdom subsidies fell by 15 to 35 per cent;
- greater innovation, for example the introduction of mini-buses in both countries and the operation of route services in medium-sized towns in New Zealand by taxi companies; and
- a reduction of up to 70 per cent in operational and planning costs (Sub. 97).

Whilst deregulation and privatisation in the UK were initially opposed by many in the bus industry and local government, those organisations which accepted, accommodated and planned for the new regime demonstrated that both cost and service benefits could be achieved.

Following the relaxation of entry into the taxi industry in New Zealand in 1989, most taxi organisations have either maintained their fares or decreased them. After accounting for inflation, real charges in New Zealand have fallen significantly. (Although prices have fallen in the majority of cities in New Zealand, smaller rural areas have faced fare increases by up to thirty per cent.)

In New Zealand, since changing the regulations which govern the taxi market, there has been a thirty per cent increase in the number of operating organisations. The number of taxi licences has increased by twelve per cent. Varying quality of services is provided at different fares to cater to different market segments.

Reforms in urban transport in the United States, Canada, Germany, Switzerland, Sweden and other countries were also investigated by the Commission. Together they demonstrate substantial gains can be made, particularly from changed work practices and from improvements in productivity in public bus operators.

In Sweden, competitive tendering of the bus service in Göteborg has resulted in cost savings of around five to 15 per cent.

Introducing or increasing competition has caused some problems in other countries, and Australia can learn from their experience. Patronage fell in some cases due to loss of coordinated services, fare increases and the recession; the average age of operating buses has increased and investment in new conventional buses has declined; and congestion has occurred at some locations, such as taxis at airports, and buses in city centre streets.

The general conclusion from experience with urban transport reform in other countries is that promoting competition brings clear benefits but also some costs, particularly associated with open access. This underlines the need to manage the process and to consider carefully and precisely how competition is introduced.

A6.5 Concerns about competition

Seeking to introduce more competition does not mean concentrating solely on economic efficiency and cost minimisation. Consideration must be given to the coordination of services and the meeting of social objectives. Many participants raised concerns about the impact of increased competition on service standards, social objectives, safety, and coordination.

'Wasteful' or 'destructive' competition

The most efficient mode of transport for a given task depends on the nature of that task. The NSW Treasury argued that 'the provision of urban public transport services has to be viewed in terms of a hierarchy of service types and mode types' (Sub. 177, p. 9). In general, higher capacity modes such as urban rail are most effective at moving large numbers of people over a few fixed routes at set times, such as with work trips to the central city. Trams are better suited to short, medium to high density routes with high service frequency. These fixed track modes are less suited to servicing the needs of passengers whose travel patterns are more dispersed. Alternative modes are more readily adapted to accommodate irregular travel patterns.

Route bus services are constrained only by the provision of suitable roads. They collect and deliver people closer to their origins and destinations. Midi- and mini-buses trade off carrying capacity for even greater flexibility and access. Demand for non-fixed route services has led to the evolution of community transport to serve those unable to use conventional transport.

Taxis can provide even greater flexibility than fixed route services. This makes them well-suited to catering for irregular cross-city trips and door-to-door journeys. The taxi may be more economical to run in off-peak periods, characterised by low passenger patronage, relative to larger vehicles such as buses and trams.

Private motor vehicles including cars, motorcycles, trucks, and light commercial vehicles offer another set of transport options. As discussed in chapter A2, the flexibility and convenience of private transport modes is often seen as conferring a large advantage over public transport modes.

Non-motorised modes of transport — cycling and walking — provide other options particularly suited to shorter trips.

The competitiveness of different modes also varies according to city layout. Passenger rail services tend to be more viable economically the higher the density of population. Public transport (particularly fixed track modes) becomes more competitive with private transport if roads are congested.

The fact that different modes have different strengths and weaknesses has led to the view that duplicating public transport on given routes is wasteful. Vuchic refers to the ‘family of modes’ and contends:

... all major transit modes have optimal domains of application; ‘adjacent’ modes overlap their domains to some extent.... but *modes as remote from each other as taxi and (urban bus routes).... should never be competitive, but complementary*. For example, there is no way in which it can be more efficient and economical to transport 40 persons from point A to point B at one time in 20 taxis than in one bus, or 750 people in 15 buses than in one train, unless the lower-capacity mode is operated by underpaid drivers, has low comfort and safety standards, and is indirectly subsidised, while the higher-capacity mode is excessively luxurious, inefficiently operated, and driven by overpaid drivers. (Vuchic 1981)

If particular modes are inherently suited to particular tasks, regulations prohibiting competition should be superfluous. The potential for competition from other modes provides a check (particularly in cases where modes are close substitutes) on the inefficiency and goldplating to which Vuchic refers. At the same time, preventing alternative modes from competing can be costly in terms of productive efficiency and innovation. The Victorian Government argued that the most important principle is to avoid giving any mode a presumptive role:

... just because it has serviced a route in the past, or just because it is owned by government or is organised by a particular union. Failure to observe these ‘principles’ in the recent past has meant that expensive train and tram services have been operated to carry ‘bus-loads’ of passengers, and PTC-staffed bus services have been used despite the availability of much more economical private bus alternatives. (Sub. 186, p. 13)

In the Commission’s view, it makes little or no sense to take too rigid an approach to the assignment of transport needs. Decisions to reserve markets to particular modes may not correspond with what people want. Artificial regulatory barriers may also clash with technological advances. The ACT Government also noted that:

A number of issues have been raised with the Government over such regulation including the inflexibility of existing systems and the inability of private bus companies to compete on some of ACTION’s routes ...

Proposals have been put to the Government to enable the private urban transport industry to operate in a more flexible regulatory environment, and respond to specific market needs. For example, provision for temporary and part-time taxis and hire cars would allow the full-time fleets to be augmented during peak hours, weekends etc, serve particular market niches such as wedding cars. (Sub. 167, p. 33)

Responding to this, Aerial Taxi Cabs referred to its proposal to contract less profitable ACTION bus routes in non-peak times which it claimed would ‘result in a net saving to ACTION and an increase in service to the public, has laid dormant with Government’ and noted that the ACT Government’s dismissal of contracting proposals alluded to ‘industrial implications’ (Sub. 191, p. 5). The matter now appears to have been resolved (see chapter B4). But the experience illustrates the difficulties in overcoming regulatory structures which tend to suppress new ideas and ways of doing things.

Achieving social objectives

A major concern often expressed about creating a more competitive environment for urban transport markets is that it will compromise the achievement of certain social objectives. Particular issues raised are the provision of uneconomic but socially desirable services (for example, evening and weekend services). Typical of the concerns raised was the comment by Brisbane Transport:

Customer confidence in the urban transport system is paramount. This may suffer in a totally de-regulated environment which the Commission is proposing. Border-line Community Service Obligations (eg. late night, weekend services) are the first services to fall by the way-side in an open access environment, due to the pressure to squeeze profits out of the system. Thus service quality deteriorates, and fares increase in an attempt to recover from falling patronage. (Sub. 239, p. 17)

The New South Wales Department of Community Services stated:

The encouragement of effective and fair competition to enhance the quality and appropriateness of goods and services for all consumers is essential. However, there are circumstances and industries where competition will not deliver efficiency or conflicts with other social objectives ... It is essential, therefore, that competition policy does not confuse means with ends: access, equity, improved quality and choice of services must remain the target outcomes. Clearly in most instances competition is the most efficient means to delivering these ends; nonetheless social objectives should not be compromised in the process. (Sub. 316, p. 2)

As discussed in more detail in chapter A8, the explicit identification and funding of community service obligations is one way in which social objectives and the benefits of competition can be achieved simultaneously. Indeed, the NSW Department of Transport observed that one implication of the introduction of explicit community service obligation contracts for non-commercial transport services is that 'progressively it will be possible to have more community services supplied by organisations other than government authorities' (Sub. 178, p. 22). It added:

This is a characteristic of CSO contracts which is not often recognised. It is not simply a process which compensates government authorities for specified requirements. It is a process which can put government requirements out to competitive bidding and so remove the age old monopoly that government authorities have on government business. (Sub. 178, p. 22)

In New Zealand and the United Kingdom, the provision of off-peak, low volume bus routes that are considered socially desirable is achieved by means of direct subsidies rather than regulation. At the same time, competition is permitted on routes which are commercially viable.

One of the less visible beneficiaries of the Commission's recommendations will be community transport. Typically, community transport services are run by

voluntary organisations providing services to elderly, people with disabilities, and other groups with limited transport options. The analysis in chapter B5 suggests that community transport has the potential to play a much larger role in the transport task, were it not impeded by inflexible regulatory and funding arrangements. Community transport is demand-responsive, flexible and often better suited to specialised transport needs.

Ensuring public safety and service quality

Another frequently raised concern about allowing competition is that it may result in falling quality of service, even to the extent of endangering public safety. It is therefore essential to differentiate between safety and economic regulation.

The Commission stresses that safety regulation should remain intact and in some cases be strengthened. For example, in the taxi industry the Commission is recommending that 'fit and proper' person requirements be maintained and all drivers be required to undertake English and local area knowledge tests. Restricting the number of taxi licences does nothing to guarantee adequate safety standards.

Economic regulation includes restricting the number of operators, and granting exclusive franchises and monopoly rights.

Introducing competition to previously protected transport providers is likely to stimulate general improvements, not falls, in service quality. More freedom is also likely to result in a wider range of differentiated services on offer to consumers. For example, one result of taxi deregulation in New Zealand has been a move away from a uniform level of service at a uniform price to a greater variety of price/service combinations. Nevertheless, where the community considers it desirable to ensure a certain level of service, that can be done without necessarily having to restrict entry to an industry.

Introducing competition is fundamentally about giving users a better service. It will also minimise costs, to the benefit of travellers and taxpayers generally.

Coordination of services

Some participants expressed concern that competition would lead to a poorly integrated service. Dr Knight commented:

While there are benefits to be derived from specialisation and competition, integration is also necessary. A fragmented transport bureaucracy/administration is very likely to work at cross-purposes. Indeed, that is a criticism already made of the current

administrative system. The model suggested by the Commission is not likely to improve things in this regard. (Sub. 211, p. 1)

The Public Transport Users Association believed there is room for competition, provided a single body coordinated services:

The PTUA neither opposes nor uncritically supports private involvement in providing public transport services, through 'contracting out', or possibly even franchising in appropriate situations. However, overall control of fares, network structure and timetabling, must rest with a single, public authority for each urban area. Zurich provides an excellent example: a public authority coordinates a diverse array of State, private and municipal operators. (Sub. 96, p. 65)

The Victorian Government has introduced competition through tendering of bus and selected (country) train services, and separated infrastructure management from service delivery. As part of public transport reform in Western Australia the Department of Transport has the role of service coordinator and 'champion' of public transport. In South Australia, a Board will be established to handle contracting (by competitive tender or negotiation), licensing and the promotion of passenger transport services.

As noted in appendix G, the experience of the cities examined does not suggest that the functions of coordinating public transport services within a metropolitan region and providing integrated ticketing for those services can only be performed successfully within the public sector.

Experience in other countries also shows that there are many approaches to coordinating services between public and private operators (see appendix G). For example Munich, Zurich and Singapore all rely to some extent on a voluntary association of the multiple public transport operators to undertake coordination and integration functions on behalf of the group. Toronto seems to get by having these functions carried out in only part of the conurbation and some of the UK cities do not seem to require them to be carried out at all.

Competition between modes does not have to involve sacrificing coordination between services. The approach to coordination outlined in chapter A4 allows for multi-operator provision of public transport.

A6.6 Competition in Australian public transport

At present competition within modes is quite heavily constrained. The following discussion examines possible ways of introducing competition into urban rail, bus, and taxi services. A fuller treatment of the sometimes difficult issues associated with individual modes is at Part B.

Rail

The introduction of competition into urban rail is complicated by the issue of natural monopoly, which is usually considered to characterise rail infrastructure. However, the evidence for natural monopoly in other aspects of the railway industry, for example, operating trains, administration and maintenance, is less clear. Structural reform of urban rail needs to be tailored to retain the benefits of vertical integration in those areas where there is natural monopoly, while at the same time providing scope for increased competition in other areas.

Options for structural reform of urban rail include:

1. *Separation of urban passenger services from other rail traffic*

There would be benefits in a clearer separation of different types of rail traffic into autonomous business units, as it would improve accountability, and encourage increased efficiency by providing a sharper business focus for each of these activities. However, for these benefits to be realised there must be an actual (rather than just a nominal) separation of units; in particular, separate financial accounts should be provided for each unit.

2. *Separation of urban passenger operations into geographically-based units*

Possible reasons for creating geographically-based units include providing a stronger local customer focus, and facilitating the introduction of new operators or owners who might find it more attractive to deal with smaller, locally-based operations. Such an arrangement might also make it easier for local governments to participate in the funding and operation of local rail services.

3. *Separation of services from infrastructure*

Under this option, operating services would be separated from controlling and maintaining the infrastructure. This would make the cost of operating infrastructure much clearer, including the cost of running trains on congested lines, and hence give the infrastructure provider a more commercial focus. It would also increase the pressures on rail authorities to maximise returns on existing infrastructure, and create the institutional framework for possible introduction of new operators. This may involve creating either commercially autonomous business units to be responsible for each function, or two separate GTEs, one for infrastructure and the other for providing services. Where there are separate business units, there must be an actual (rather than just a nominal) separation of units, with separate financial accounts.

4. *Franchising rail services*

This approach allows new operators to provide rail services, and to pay an appropriate fee for the use of government-owned infrastructure. Possible ways of introducing new operators of urban passenger rail services include:

- franchises for the whole network;
- franchises for part of the network; and
- open access to some lines.

New entrants may also wish to operate some aspects of the infrastructure, for example stations, or lease some lines where the new operator is the sole user of that section of track. Open access is more complicated to administer than franchising, and would only be appropriate where there is sufficient traffic to support more than one operator on the same line.

The four options above are not mutually exclusive. For example, franchising the supply of passenger services (option 4) can take place with or without firstly creating separate GTEs for infrastructure and services (option 3).

Assessing the options

The five rail authorities which currently operate urban rail services in Australia vary considerably in terms of size, market share, level of cost recovery and method of organisation. This, together with the range of responses on the options for reform which the Commission proposed in the draft report indicates that **it would be inappropriate to apply the same approach to structural reform in all cases.**

In Adelaide and Perth the relevant authority provides urban services only, whereas in Sydney, Melbourne and Brisbane the relevant authority provides both urban and non-urban services. Similarly, differences in the size and structure of each city may also make a single approach inappropriate. The best approach to structural reform will depend on the costs and benefits of pursuing particular options, and the interest of potential new operators.

In their responses to the draft report, State Governments agreed with the Commission's proposal to create autonomous business units for different types of rail traffic. Some authorities have already taken this step. There was a variety of responses to the proposal to create an autonomous business unit responsible for infrastructure. Of the five urban rail authorities, only the PTC (Victoria) has established a separate business unit for infrastructure.

CityRail (NSW) currently has plans to divide its network into geographically-based business units. The Victorian Government considers that more research is needed on the appropriateness of this option for Melbourne, while Queensland does not consider it to be appropriate for Brisbane.

There was a range of views on the appropriateness of creating a separate infrastructure body, with several participants highlighting the practical difficulties of doing so.

Private operators in Australia currently provide passenger rail services only in country areas. This is partly related to the greater separability of individual rail lines in non-urban areas compared with those in urban areas. It would seem appropriate for State Governments to consider the extension of private rail operations in outer areas, such as lines that link neighbouring regional centres with cities such as Melbourne and Sydney. The Western Australian Government has said that rail services in Perth could be provided by either Westrail or private operators under contract to the Department of Transport, but has yet to introduce any new operators.

The Commission recommends that the current moves to corporatise government rail authorities be continued and extended. As a minimum, rail infrastructure and different types of rail traffic should be operated by commercially autonomous business units. Where appropriate, existing urban rail networks should be divided into geographically-based business units.

Looking ahead, State Governments should be open to other options for reforming urban rail in ways that promote greater efficiency, including the creation of a separate infrastructure authority, and the franchising of rail services. Seeking expressions of interest from potential operators could be a way of generating information about the benefits and costs of pursuing these options.

Further analysis of issues associated with urban rail is at chapter B1.

Buses

The Commission has developed three options for introducing competition into the supply of bus services in Australia. The first provides for open access with minimum guaranteed service levels. The second and third both provide for exclusive franchises awarded through competitive tender. The second specifies a (minimum) level of service and operators bid on the basis of subsidy, while the third specifies the subsidy and operators bid on level of service.

The Commission also examined the option of open access without minimum service levels. Such an option cannot ensure that social objectives could be met efficiently.

1. Open access with minimum guaranteed service

Under this option any competent operator is permitted to operate on any route at any fare, at any time, but is required to give adequate notice of intention to operate commercial services. State or local governments could choose to provide subsidies through competitive tenders for additional (community) services.

2. *Exclusive franchise for a minimum subsidy with a given minimum level of service*

Under a second option the government allocates by periodic competitive tender an exclusive licence to operate an area for a given time. The tender is allocated to the operator which bids the lowest subsidy (or the highest price) for a guaranteed minimum level of service.

3. *Exclusive franchise for a maximum level of service for given subsidy*

The third option is a variation on the second. Under this option the tender is allocated to the operator which bids the maximum level of service for the subsidy offered by government. However, under both options 2 and 3 franchises must be awarded through a genuinely competitive tender to reap all the gains possible.

Assessing the options

Open access involves a bus market with no restrictions on the provision of bus services by any potential operator, except for those relating to safety. This creates an environment in which the threat of competition is continuous.

Open access allows suppliers to design, organise and provide services at fares in line with market preferences. It has the potential to achieve the lowest input costs and encourages services to be differentiated by both quality and price in response to passenger demand.

Under the second and third options, the government allocates, by periodic competitive tender, an exclusive franchise to operate an area for a given time. Essentially this involves periodic competition for the market, rather than in the market. The benefits of these options are maximised only if the franchises are subject to regular public tenders.

Initially, this requires that each city be divided progressively into a series of service areas (in those cities almost entirely serviced by public operators, this could be along the lines of the established depots) which are then franchised out.

The Commission's preferred approach

In the Commission's view, the most pressing priority is to introduce competition for the markets in bus services. However, there are benefits in a phased approach to reform, having due regard to the urgency for early action. **Accordingly the Commission recommends that State and Territory Governments (continue to) introduce progressively a system of exclusive franchises to operate bus services in urban areas.**

Introducing competition in bus markets should be accompanied by complementary changes to the way public operators are organised and run (see chapter A5). The removal of regulatory functions and the administration of franchising of bus services to other agencies of government is particularly important.

Franchises should initially be awarded for up to seven years. Experience with franchised markets should encourage the emergence of new entrants and provide them with an opportunity to establish themselves in bus service markets. This experience would be enhanced were the States and Territories to conduct a series of demonstration projects where open access were allowed in specific urban areas.

Depending on the experience, consideration could then be given to the introduction of open access to all bus services by any operator.

The Commission is conscious of the need to take into account the particular situations of individual cities and States and Territories in applying its recommended reform package for urban buses.

Further analysis of issues associated with urban bus services is in chapter B3.

Taxis

In the case of taxis, the difficult issues in promoting competition involve not the model itself but how to get there. Many taxi owners have purchased licences directly from State and Territory Governments. In some cases, taxi licences represent a significant part of people's life savings — such as those who have invested severance payments. Many people believe that the direct and indirect role of government in supporting high taxi licence values places a moral and/or legal obligation to compensate them in the event that entry restrictions are relaxed. Clearly, major equity issues arise.

Against this, delaying indefinitely will also delay the benefits for users.

In light of its analysis and the reaction to its draft report proposals, the Commission favours a program of reform which will enable the taxi industry to

expand and diversify while retaining all aspects of public safety regulation. It presents four options.

1. Periodic sale of licences

This option is intended to achieve open entry over a number of years and the lower prices to taxi users that would follow. The government sells new licences by public tender every twelve months. The sale program is announced in advance.

The option has two variations. The first involves new licences being released each year with the proceeds to be distributed in equal shares to existing licence holders. This financial compensation would be in addition to the non-financial compensation inherent in any phasing out of the restrictions on entry. The second variation involves releasing fewer new licences each year, but no financial compensation.

Under the first variation, each year on 1 December (for example) a number of new licences are sold by public tender equivalent to 10 to 15 per cent of the licences on issue on 15 November that year. The proceeds of each tender (net of its administrative costs) are distributed in equal shares to all licence holders (as at 15 November) within two weeks. The program continues for a number of years until no bids are received; from that time the government issues any new licences on demand, at no more than their administrative cost.

Under the second variation, each year on 1 December (for example) a number of new licences are sold by public tender equivalent to 5 per cent of the licences on issue on 15 November that year. The proceeds of each tender are retained by the government, not distributed to existing licence holders. The program continues for a number of years until no bids are received; from that time the government issues any new licences on demand, at no more than their administrative cost.

The Commission also recommends that, under this option, taxi fares be deregulated immediately. However, to protect taxi users, licence holders should be required to notify maximum fares (and any changes to them) to the government and to post these fares both inside and outside their vehicles. Customers could then choose which taxi to take, rather than be expected to take the first on the rank, as happens now.

2. Separate the taxi rank and phone booking segments of the market

Another option would be to divide the taxi industry into two parts: taxis standing at ranks and hailed in the street, and taxis booked by phone.

This option could be implemented by allowing open entry into the hire car industry and relaxing the conditions under which hire cars operate, so as to blur the distinction between hire cars and taxis booked by phone. Hire cars would

still not be allowed to ply for hire in the street nor stand on taxi ranks. But they could establish radio networks and develop new fare packages.

If this option were adopted by State and Territory Governments, they could follow the South Australian Government's policy of issuing new hire car licences for \$50 on demand.

3. Tie taxi licence numbers to performance requirements

A further option comes from Queensland, where a new scheme is being introduced by the Government. Taxi organisations will have to meet certain performance standards under service contracts within defined areas. The performance standards may specify the types of service to be provided, minimum levels of customer service, service reliability and safety levels of accessibility for people with disabilities.

A taxi organisation is required to provide twenty-four hour service and is not allowed to refuse entry to taxis wishing to join it provided the newcomer is willing to pay a reasonable commercial fee.

If the performance standards are not met, the Director-General of Transport may issue additional taxi licences 'so that the standards are achieved' (Queensland Department of Transport 1994b).

It remains to be seen how the scheme works out in practice. However, setting taxi licence numbers to performance-based measures (such as response time — that is, the time taken for a taxi to arrive when called by phone) is bound to be arbitrary. It is difficult to determine the optimal level of performance and administration of the scheme could prove costly.

4. Cap the present value of taxi licences

This option attempts to minimise the loss in licence values which would be suffered by current licence holders under option 1, while allowing at least some more competition within the taxi industry. New taxi licences would be available on demand from the government at the present market price. This would put a cap on the present value of licences, which would fall in real terms over time.

Capping would put a stop to speculative investment in taxi licences, but would do almost nothing to achieve the open entry to the industry and lower prices to taxi users which the Commission seeks.

The Commission's preferred approach

Option 1 was proposed in the draft report but has since been amended. (The other three options were not presented in the draft report). It was heavily criticised by the taxi industry, and not well received by State and Territory

Governments (except the Northern Territory Government). But it was strongly supported by the transport disadvantaged.

The amendment to option 1 lies in the speed at which new licences would be issued if financial compensation were paid to existing licence holders. The Commission is now proposing a rate of increase of 10 to 15 per cent each year, rather than 15 per cent. The precise rate of release needs to be determined by governments — but should be fast enough to allow the taxi industry to expand and diversify, and to bring the consequent benefits to the community as soon as possible.

The Commission strongly prefers option 1 and recommends its adoption by all State and Territory Governments. It would bring the greatest possible benefits to taxi users and result in the most efficient structure for the taxi industry. Coupled with the reforms suggested elsewhere in this report, it would allow the taxi to play a much greater role in transporting the Australian public, including in community transport and off-peak public transport.

But if State and Territory Governments are unwilling to adopt option 1 at this time, the Commission recommends they consider the reform proposals outlined in options 2, 3 and 4. Option 3 (the Queensland Government approach) has the potential to provide better taxi services to the community, while option 2 is similar to the South Australian Government's policy of allowing open entry into the hire car industry. Option 4 would put an end to the wasteful upward spiral of taxi licence values, but do little else to achieve a better deal for the community, particularly those on lower incomes and people with disabilities.

Irrespective of the options adopted, the Commission considers that taxi boards and advisory committees should be structured to give users a substantial say in their operation. This will require representatives from a broad cross-section of the community, including people with disabilities.

A6.7 Conclusion

The Commission favours the provision of transport services being made as contestable as possible both within and between modes. Regulatory and subsidy arrangements should ensure that every operator, both public and private, is subject to competition or the threat of competition. Opening up urban transport to new players is essential to greater efficiency and innovation.

Introducing competition into public transport needs to be carefully conceived and implemented. Governments can retain control over matters

such as social objectives, coordination, promotion, and safety. Rather than a ‘free-for-all’, the Commission sees advantages in commencing with a structured approach which marries the advantages of coordination and integration with the benefits of competition.

A7 PRICING AND INVESTMENT

Revenues collected from urban road users and fares for urban public transport bear little or no relation to the economic costs of transport services.

Road users are currently not charged directly for their use of roads. Road user payments should reflect, as far as possible, the costs associated with travel by particular vehicles at specific locations and times of travel, including the cost of road provision and maintenance, and congestion, pollution and accidents.

Public transport fares should reflect different costs associated with individual journeys, including the higher costs of providing services at peak times, and of longer distance journeys. Any fare increases should be accompanied, if not preceded, by improvements in service quality, and should be phased in over several years.

There is evidence of some poor investments in urban transport infrastructure in Australia. Investment processes need to be improved, by developing and consistently applying better appraisal methods, considering a full range of relevant options, and making the results public. Cost-benefit analysis should take into account the environmental impact of various transport options. Governments need to explore further the methods for beneficiary financing of urban transport facilities.

A7.1 The role of urban transport pricing

The need for efficient pricing

The important aspect of an efficient pricing system is to ensure that decisions about when, where and how to travel are linked to the prices paid.

Efficient prices ensure that existing transport facilities (such as roads, rail tracks, and so on) are used by those who are prepared to pay the full economic cost of their use, including the effects on third parties and the environment.

They also provide reliable signals of when changes in the provision of facilities or services are justified — whether new investment, decommissioning capacity, or changing services.

CityRail observed:

If different modes of transport were correctly priced, the right market signals would be conveyed to users thus eliminating distortions and blending the correct mix of modes (Sub. 46, p. 8).

Individual users who do not face the full economic costs of their travel will tend to over-use transport services and infrastructure. This can lead to an expansion of transport facilities which is not justified in economic terms. For example, if motorists are not paying the full costs associated with their use of the roads, including negative effects such as congestion, pollution and accidents, excessive road travel would result. On the other hand, some travellers who face charges that are too high, will not travel at all, even though the economic costs may be less than the benefit they would have derived from their trips.

To properly reflect costs, prices need to be differentiated to make allowance for:

- the time of travel (peak, daytime, evenings and weekends);
- the distance travelled;
- the incremental costs associated with the supply of services for additional travellers; and
- third party costs (see chapters A9 and A10).

Practical issues

Reasons why prices are not set equal to marginal cost in practice include:

- other objectives of government policy (for example, taxation and social policies);
- poor management information systems which are unable to distinguish the costs of individual services (for example, of different modes, different routes, along the length of a route, and services provided at different times of day);
- the costs of implementing a system in which prices fully reflect the costs of individual services may be too high; and
- practical difficulties in allocating fixed costs.

Also, there may be situations where there are system-wide advantages from departing from a direct relationship between prices and the costs associated with individual services. For example, multimodal ticketing systems for urban public transport (such as those in Melbourne, Adelaide and Perth) may help to generate patronage.

In the case of public transport, there are also practical limits to the extent that fares can be differentiated, related to common sense considerations of technical feasibility and ease of comprehension by customers. The Western Australian Government observed:

While it is important for the fare structure to be more closely related to costs, it should not become so complicated as to confuse both current and potential users. Further developments in ticketing technology could eventually close the gap between ideal fares and a user-friendly system. In the meantime the fare structure must be based on a compromise between these two factors. (Sub. 170, p. 45)

Improvements in technology can help alleviate some of these difficulties. For example:

- electronic road pricing enables cost-effective collection of fees from motorists, differentiated according to location and time of travel;
- electronic ‘smart cards’ have the potential for the benefits of multi-ride tickets to be combined with differential prices for individual modes and operators — of both public and private transport services;
- automatic fare collection systems can generate useful information about the pattern of travel of public transport users (and also reduce fare evasion);
- computer-based accounting systems facilitate the task of compiling and reporting disaggregated cost data; and
- improvements in cost allocation techniques lead to a more effective treatment of fixed and variable costs.

A7.2 Urban road pricing

Federal, State and Territory Governments presently levy a range of taxes on road users, including fuel excise, fuel franchise fees, registration, licence fees, and stamp duty on transfer of motor vehicle ownership. Some local governments also charge fees for access to local roads for certain heavy vehicles. Costs of road construction are recovered in part through charges on developers of subdivisions, or requirements for them to provide roads associated with their developments.

The National Road Transport Commission (NRTC) is responsible for developing and monitoring a scheme for registration charges for heavy vehicles, that relate the level of the vehicle charge to the estimated pavement wear costs of each vehicle class.

Tolls are collected on some major arterial roads in Sydney and Brisbane (see chapter A9).

As discussed above, efficient pricing of roads requires that each road user be charged in accordance with the cost imposed at the time and place of use (including pavement wear, and third party costs such as congestion, pollution and accidents). However, most levies on road users are determined according to government fiscal demands, rather than as a means of allocating road space. As such **they are not a price for the use of roads**. Although some levies are hypothecated to road use, the supply of aggregate road space, and the specific localities where roads are built, bear little or no relation to the levies imposed on road users. **Research into road user costs deserves higher priority than currently accorded to it.**

There have been only limited attempts to make road users pay directly for the costs to third parties, in terms of congestion, pollution or accidents (see chapters A9 and A10). This is related to both the difficulty of implementing direct charging for road use, and the poor information that is available about road user costs.

The urban road users' balance sheet

In the absence of detailed information about the cost of individual journeys, a commonly used method for assessing whether road users are meeting their economic costs is to compare aggregate revenues and costs. However, it is not possible to infer from such an analysis whether marginal costs are being met by individual road users. Even if urban motorists as a whole were found to meet economic costs, there may still be some who do not, such as those who travel on highly congested roads.

During the inquiry, road users and road industry organisations such as the Australian Road Federation commented that road users collectively are contributing much more to governments than the amounts spent on roads. For example, in 1991-92 total taxation (other than import duties and sales tax) plus tolls collected from all road users amounted to \$9.2 billion, compared with around \$6 billion spent on roads in that year. However, this does not take into account social costs such as pollution, congestion and accidents.

For urban road users, the starting point is to compare revenues with the financial costs associated with road provision (see tables A3.5 and A3.6 in chapter A3). However, the analysis is complicated by inadequate data and disagreement on some methodological issues. On the revenue side, questions include:

- which items of taxation should be considered as road user revenues;
- whether the full amount or only a portion of total revenues should be included in the analysis; and

- how to allocate total revenues between urban and rural motorists. For example, Dr Quiggin (Sub. 213, p. 2) suggested that registration and licence fees should be allocated to urban motorists according to the expenditure spent on urban roads, rather than according to the amount of vehicle kilometres in urban areas (as in table A3.6).

On the cost side, important issues include:

- what is the true cost of providing roads? The estimates of road expenditure in table A3.5 represent the annual amounts spent on road, including on construction, which is more in the nature of an investment. Also, there is no provision for a rate of return on capital;
- as discussed in chapters A9 and A10, there are difficulties in measuring the cost of congestion, pollution and accidents for urban road users; and
- should congestion be included at all, since at least part of the effects of congestion are internalised in the decisions of road users on when and where to travel?

During the inquiry, there was a range of views on whether urban road users as a whole are meeting economic costs (see box A7.1). While aggregate measures of revenues and costs for urban motorists provide useful information, further work is needed to establish the costs associated with individual journeys.

Pricing of individual journeys

In moving toward a more efficient pricing system, it is necessary to consider some practical issues. These include technical aspects (such as the availability of detailed information on individual road user costs and travel patterns, and the available technology — see chapter A9), the implications for government finances and the management of the road system, and the need for political and community acceptance of any proposed changes.

The work on vehicle charges currently being done by the NRTC is aimed at improving the information about the pavement wear attributed to different types of heavy vehicles. It would be useful if this work could be extended to include other vehicle types. It is generally thought that most trips by passenger motor vehicles contribute little to the wear and tear on roads, which is attributed mainly to heavy vehicles.

Box A7.1: Is there a road user deficit?

Based on the estimates of urban road expenditure, revenue allocated to urban motorists, and congestion, accident and pollution costs in the draft report, several participants concluded that urban road users are not paying their way when account is taken of all economic costs. Some referred to this as the road users' deficit:

- the ACTU/Public Transport Unions (Sub. 271, p. 24) estimated a road user deficit of \$4.4 billion in 1990-91;
- the Coalition for Urban Transport Sanity (Sub. 250, p. 6) estimated a deficit of \$10 billion in 1990-91; and
- Dr Quiggin (Sub. 213) estimated total costs for urban road users of around \$10.7 billion, compared with estimated revenues of \$4.9 billion.

In contrast, the Australian Automobile Association (Sub. 279) estimated economic costs of urban road use (at \$5.6 billion) to be less than the revenues attributed to urban motorists (\$6.4 billion).

The main reasons for the differing conclusions are the unreliability of much of the data used (especially the estimates of third party effects, as discussed in chapters A9 and A10), and the different methodologies in the various studies. For example, CUTS included 50 per cent of the public transport deficit in road user costs, and included only a portion of total revenues. The other studies included either the full amount or only a portion of total revenues. Dr Quiggin calculated an annual capital cost for urban roads, while the other comparisons included total amounts spent on urban roads. The ACTU/Public Transport Unions extrapolated the estimate of congestion costs for Sydney and Melbourne to derive an Australia-wide estimate, CUTS used the estimate for Sydney and Melbourne only, while the AAA (using a different methodology altogether) came up with a much lower estimate of congestion for four of the capital cities.

Other available information also presents a conflicting picture. For example, the NSW Department of Transport noted that road users (both urban and non-urban) may not be covering all the costs they impose:

On the basis of the principle that roads should recover their full economic costs, including a return on capital invested and externalities, there is evidence to suggest that road users are not fully paying the costs they impose. (Sub. 178, p. 16)

The ACT Government (Sub. 228, p. 3) also considered that road users as a whole are not paying the full economic cost. However, a 1985 South Australian study (based on data for 1982-83) indicated that total road user payments exceeded the cost of providing roads as well as environmental costs (see Travers Morgan 1985).

Some participants, including the Commonwealth Department of Human Services and Health (Sub. 321, p. 15), considered that the opportunity cost of land provided for transport routes should also be included in the assessment of urban transport costs.

Since a large part of the cost of providing roads is fixed in the short term, uncongested roads can often accommodate additional users at minimal

additional cost. Failure to recover the aggregate cost of road building from road users directly may not therefore, in itself, be a sign of inefficient charging for road use. At the same time, unless road-building costs are recovered in some way from those who benefit, inefficiencies in provision can arise such as too many roads being built or roads built in the wrong places. Requirements on developers of urban areas to pay for roads provides one answer to this problem (as discussed later in this chapter). Over time, it would be preferable for recovery of road infrastructure costs to follow similar rules to those for fixed track infrastructure (discussed below).

Individual trips vary in their contribution to pollution and congestion. Charges which effectively ration road space or reduce pollution to acceptable levels, will not necessarily raise revenue equivalent to the total costs imposed (see chapters A9 and A10).

Some participants, including the Australian Road Federation, were strongly of the view that amounts collected from road users should all be spent on roads. Levies on road users are collected mainly with a view to raising taxation revenue. They bear no relation to the amounts spent on roads, which are determined annually in accordance with government fiscal priorities. Since they are taxation, road users do not have a choice about paying the levies, but rather can only decide whether or not to purchase a vehicle, or whether or not to travel in that vehicle. In this situation, there are doubts as to whether further hypothecation would increase efficiency in allocating road funds. Also, changes in either the way payments are collected from road users, or in the level of particular levies, will have an impact on the finances of Federal and State Governments.

In this inquiry, the Commission has not looked in detail at all of these issues. It has sought a solution which allows a move towards more efficient road pricing, taking into account the need to charge for individual trips according to time and location, and the distances travelled (see chapter A9 for a discussion of congestion pricing), while also considering the feasibility of introducing the changes.

A7.3 Urban public transport pricing

Table A7.1 shows the current structure of public transport fares in Australian capital cities. In Melbourne, Adelaide and Perth the fare system is based on a multimodal ticket which allows for unlimited travel within a given period. In the other capital cities, fares are charged on an individual trip basis and, where there is more than one mode of public transport, vary according to mode. Fares increase with distance travelled, but the rate of increase is usually less than

proportional to distance. Discounts are also common for periodical and multi-trip tickets, which compounds the differentials.

Under current arrangements, State and Territory Governments set public transport fares (see chapter A4). For a variety of reasons (including political), governments have restrained the level of urban public transport fares, often to a rate of increase below that of the consumer price index (CPI), and imposed fare structures that bear little or no relation to cost.

In its initial submission, the Western Australian Government (Sub. 170, p. 44) noted that past government decisions had led to a situation where Transperth's fares do not bear any relationship to either demand or cost, and that directives from previous State Governments had resulted in fares lagging behind the rate of inflation. At the draft report hearing, Transperth said that the existing fare increments in Perth are too flat in relation to distances travelled (DR transcript, p. 86). In July 1993, the WA Government announced an average increase of 12 per cent in Perth's public transport fares, exceeding the inflation rate (Sub. 320, attachment A).

The Victorian Government (Sub. 186, p. 29) said that the Public Transport Corporation has been required by successive governments to allow its fare increases to fall far behind inflation.

Cityrail's 1993 submission to the NSW Government Pricing Tribunal described the pricing of the existing TravelPass tickets, which provides intermodal travel in the Sydney and Newcastle metropolitan areas, as not reflecting costs. Journeys on TravelPasses are highly cross subsidised by passengers who purchase rail-only or bus-only tickets (CityRail 1993, p. 29).

Although part of the problem is related to poor management information systems that do not provide disaggregated cost information, there is a more fundamental issue of excessive government interference in pricing decisions and in the operation of urban transport facilities generally.

Figure A7.1 shows that increases in public transport fares in several Australian cities lagged behind the CPI between 1987-88 and 1990-91, although more recent fare increases have tended to result in a catch-up to the CPI. Brisbane, Adelaide and Perth stand out as having a slower rate of fare increases than the other cities. Low fares, along with high costs and poor service quality, lead to low cost recovery.

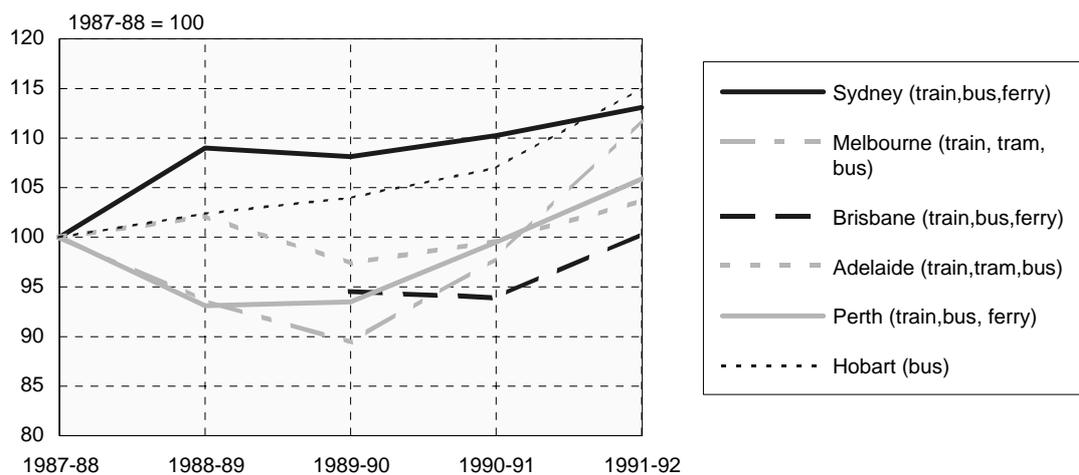
Table A7.1: Public transport fare structures in Australian cities

<i>City</i>	<i>Are intermodal tickets available?</i>	<i>Are tickets on a per trip basis or time period basis?</i>	<i>Does ticket price increase with distance travelled?</i>	<i>Do standard fares vary with time of travel?</i>
<i>Sydney (government operators)</i>	Limited; a range of tickets eg. bus-only, rail-only and multimodal	Single trip	Yes. 8 to 10 fare intervals for rail, 5 intervals for buses, different fares for ferry routes	To some extent
<i>Sydney (private buses)</i>	No	Single trip	Yes; more graduated scale than for government buses	To some extent
<i>Melbourne (government and private operators)</i>	Yes (rail, bus, tram)	Unlimited travel for two-hour period; single trip ticket for CBD	Yes. 3 zones	To some extent
<i>Brisbane (government operators)</i>	Limited	Single trip	Yes. 35 fare intervals for rail, 4 intervals for buses, different fares for ferry routes	Yes
<i>Adelaide</i>	Yes (rail, bus, tram)	Unlimited travel for two-hour period; single trip tickets for short trips	Yes. 2 zones	Yes
<i>Perth</i>	Yes (rail, bus, ferry)	Unlimited travel for two-hour period	Yes. 8 zones	No
<i>Hobart</i>	No	Single trip	Yes. 5 zones	No
<i>Darwin</i>	Not applicable	Single trip	Yes. 4 zones	No
<i>Canberra</i>	Not applicable	Single trip	Flat fare per boarding	No

Source: Public transport authorities

In its 1991 Report on *Rail Transport*, the Commission noted that Australian rail fares are low in comparison with similar urban rail journeys in London, New York, Chicago and Paris (IC 1991c, Vol. I, p. 204). At the initial hearing, CityRail said that Sydney's rail fares are only one-third of those in New York and one-fifth of London's for similar journeys (Initial hearing transcript, p. 591).

Figure A7.1: Real fare index



Source: Steering Committee on National Performance Monitoring of GTEs 1993.

a For Sydney and Brisbane, fare indexes for train, bus and ferry services were weighted by the number of passenger boardings.

Urban public transport deficits

In order for there to be equivalent treatment of different modes, environmental and social costs as well as the financial costs associated with use of each mode need to be considered. In the earlier discussion of urban road users, part of the revenues and costs relate to buses that provide scheduled route services. Mr Hughes (Sub. 300, p. 6) noted that buses may also be associated with high economic costs, since they produce emissions and, like other heavy vehicles, may cause significant pavement wear. Other forms of public transport, such as urban rail, may produce noise pollution and be associated with greenhouse gas emissions. These factors should be taken into account when comparing road users' deficits with those for public transport.

As discussed in chapter A3, urban public transport operations in Australia have relatively low cost recovery and incur large financial deficits. One factor which contributes to large financial deficits on urban public transport is fare structures which do not properly reflect costs (see below).

Recovering the costs of infrastructure

An important issue is how to recover the fixed costs associated with provision of track for urban rail, trams and light rail and whether these form a component of the deficit which should be recovered in fares. For an operator of services that make use of fixed tracks, use of the infrastructure is a component of overall operating costs. The method for determining this 'access fee' will depend on a number of factors, including:

- which costs associated with infrastructure provision are invariant to the number of operators, and which costs are variable;
- whether there is one or more than one operator (this affects the costs of coordination and scheduling, and the sharing of costs amongst different operators);
- how the network is divided among operators (this relates to the complexity, and hence the cost, of coordination and scheduling); and
- whether access is by way of exclusive franchise over given sections of track, or by open access. Determination of the access fee under open access would be more complex than under exclusive franchise, since different operators would need to have access to the same section of track at different times.

The bulk of the costs of operating rail infrastructure are largely fixed in the short run. There may, however, be some costs (for example, additional administration costs associated with infrastructure provision, maintenance of individual sections of track) that can be allocated to each additional operator that enters the network. Which costs are fixed, and which can be allocated to individual operators is not readily resolved, but will depend on the characteristics of each system.

The key in determining the access fee is that no operator is deterred who is prepared to pay the additional costs associated with entry to the system. The access fee should also not discriminate between operators.

In certain situations, governments may elect to have access fees set at levels that do not fully cover the costs of infrastructure provision. For example, in the initial stages of rail reform it may be desirable, for the sake of encouraging competition in the provision of services, to initially charge only the variable costs, and only part or none of the fixed costs (as in the United Kingdom). Governments may wish to maintain particular parts of the rail network for equity or environmental reasons; in this case, the shortfall between access fees and the cost of infrastructure needs to be defined clearly in a CSO contract with the infrastructure GTE.

The Commission recommends that, in setting access fees for use of infrastructure, all the incremental costs of infrastructure provision which are associated with an individual user be charged to that user, and that users make some contribution towards the remaining costs of infrastructure. The contribution to the remaining costs should be negotiated between the infrastructure provider and the user, subject to fair access principles (see chapter B1).

Pricing of individual journeys

Pricing for time of travel

Most travel on urban public transport occurs during peak times, as these are the times most people journey to and from work or school. If prices are too low in the peak, travel during peak times is not discouraged, leading to pressures to over-invest in infrastructure (such as roads, and rail tracks, buses, and stations) in order to meet these demands. If prices are too high in the off-peak, journeys will be discouraged that are comparatively inexpensive to provide.

In the case of most public transport, particularly urban rail or tram/light rail, there is a significant proportion of total costs which are incurred in discrete amounts (referred to as fixed costs), and which are difficult to allocate to each additional unit of service capacity. Most organisations attribute the major part of fixed costs to peak period travellers, since the overall size of the network and fleet is determined by the need to service peak period demand.

Based on the cost allocation methods currently in use, the marginal operating costs of peak period services are typically significantly higher than for off-peak services. Table A7.2 shows the marginal operating costs of peak and off-peak public transport services in the Brisbane area.

A similar trend for CityRail's services is indicated by information contained in its 1993 submission to the NSW Government Pricing Tribunal (CityRail 1993), and for rail and bus services operated by the State Transport Authority of South Australia. Estimates quoted in Starrs (1994 forthcoming) show a similar trend for rail and bus services in Perth.

Despite this, there is currently only a limited differential between peak and off-peak public transport fares in Australian cities, with differentiated peak/off peak fare systems widely available only in Adelaide and Brisbane (see table A7.1). Combined with the higher marginal cost of operating peak services, this results in cost recovery for off-peak services being higher than for peak period services. For example, in the case of a four kilometre journey on CityRail's network, off-peak cost recovery is nearly 200 per cent, compared with overall cost recovery

of 85 per cent (CityRail 1993, pp. 21-22). The State Transport Authority of South Australia's Routes and Services Information System (ROSIS) data indicates that for most public transport services in Adelaide, off-peak cost recovery is higher than for the peak. For example, reported cost recovery for rail operations in Adelaide is 17 per cent in the interpeak period, compared with 14 per cent for the peak.

Table A7.2: Marginal operating costs for peak and off-peak services

<i>Mode</i>	<i>Peak</i>		<i>Off-Peak</i>
		(1991-92 \$)	
CityTrain - rail	40.00		6.00
Brisbane City Council - line-haul bus	3.75		1.60
Brisbane City Council - feeder bus	4.50		1.90
Brisbane Bus Lines - feeder bus	2.70		1.60

Source: Travers Morgan 1991

The NSW Treasury (Sub. 177, p. 5) also noted that most peak period travellers in Sydney pay substantially lower fares than the average fare because they use discounted multi-ride tickets.

Distance-based fares

Ticket prices usually increase with the distance travelled, but not proportionally (see table A7.1). As a result, cost recovery falls with the distance travelled. For example, CityRail estimates that cost recovery for a four kilometre journey (for example, Sydney's central station to King's Cross) is 85 per cent, and this figure falls to 44 per cent for a 56 km journey (for example, central station to Campbelltown) (CityRail 1993, p. 21). The State Transport Authority (SA)'s ROSIS data also suggests that cost recovery for rail services in Adelaide falls with distance travelled. Fares which do not reflect the costs of travelling additional distances can distort location patterns within the city, by for example, providing a relatively greater subsidy to those living further out from the city.

Conclusion

While acknowledging the need for both efficient pricing and administrative simplicity, and taking into account the broader impact of fare structures on travel patterns, **the Commission recommends that fares be restructured so that they more closely reflect the cost of providing services. In particular:**

- **there should be a greater differential between peak and off-peak fares; and**
- **fares should increase with distance travelled in such a way as to reflect the incremental costs associated with additional distance.**

It is important that fare restructuring be undertaken as part of an overall reform package (see below).

One implication of fare restructuring is that the costs of providing individual services would be better reflected in fares. The differentials between fares for peak and off-peak travel would widen. This would mean that most fare increases would be focused on the peak, while off-peak fares remain unchanged or are possibly reduced. Given the lower sensitivity of peak demand to fare changes, the potential adverse effects on patronage would be more muted than an increase in fares that is applied generally to all times of travel.

Most public transport authorities, in their response to the draft report, supported a restructuring of fares to more closely reflect resource costs. Indeed, some of them have recently taken steps in this direction. For example, the Victorian Government introduced a new public transport fare structure in Melbourne in January 1994 which raised fares on longer distance trips within the metropolitan region, whilst holding constant some fares for shorter distance trips. The ACT Government said that it intends to bring about a new fare structure for ACTION whereby fares vary more with distance than currently (DR transcript, p. 240).

To some extent, these improvements in pricing structure will follow structural reform that produces more competition between and within modes for segments of the market (see chapter A6). Such pricing reforms as these, however, can precede the full implementation of fundamental reforms.

Several participants expressed their concern at the possible equity implications of fare restructuring. For example, the NSW Combined Commuter Organisations Forum (Sub. 253) considered that an increase in longer distance fares would lead to an increase in travel costs for those living on the urban fringe, many of whom they considered to be the less well-off members of the community. Similar concerns were voiced by the ACTU/Public Transport Unions:

It must be realised that a probable consequence of the Commission's recommendations would be at least a doubling of peak rail fares for longer distance commuting, including from those areas on the fringes of our major cities which contain a substantial portion of lower-medium and lower income households (Sub. 271, p. 32).

As discussed in chapter A8, in practice, people living at the fringe tend to place greater reliance on car travel than inner-city residents, and the distribution of less well-off families tends to be spread uniformly through Australian cities and not concentrated geographically. Also, most travel during peak times is undertaken by the better off members of the community. Governments should target payments directly to the less well-off members of the community who are adversely affected by fare restructuring, rather than maintain inefficient fare structures.

A7.4 The impact of transport price changes

In an ideal situation, reforms aimed at making the prices of different urban transport modes bear a closer relationship to economic costs could be undertaken concurrently. The Department of Human Services and Health considered that:

... moving to pricing reform in the public sector ahead of road pricing is inappropriate and will significantly distort efficiency and urban outcomes. If cost recovery is to [be] implemented for urban public transport the sector's advantages and competitive position can only be capitalised upon by a simultaneous set of reforms with respect to private motor vehicle use. Simply because the reforms are easier to achieve in one sector than another is not adequate grounds for the introduction of significant distortions into the relative pricing of the two sectors. (Sub. 321, p. 37)

Similarly, the ACT Government commented:

To increase bus fares without introducing road user charging and/or massive increases in parking charges would be economically inefficient and inequitable (Sub. 228, p. 10).

While it is undesirable to introduce changes in pricing mechanisms that lead to an undue imbalance in the treatment of different modes, it is also necessary to ensure that this concern not be used as a reason for not pursuing any reforms at all.

Price changes and travel behaviour

An increase in public transport fares, without offsetting measures, would lead to a fall in patronage. A survey of the empirical evidence (see appendix B) indicates that in most cases, the short-run effect of a 10 per cent increase in fares on its own would be around a three per cent reduction in patronage. Longer run effects are usually in the order of two to three times larger than

short-run effects. Peak period travel is relatively less responsive to fare changes than off-peak travel.

There are indications that public transport users react more to changes in service quality than to fare changes. The empirical evidence indicates that users of public transport are more responsive to length of travel time than to fares (see appendix B). A 1992 survey by the PTC found that fares ranked behind punctuality, cleanliness, security and staff on stations as the issues of most concern to train users (Sub. 186, p. 11). A 1993 survey by the Australian Automobile Association found that the main reasons why people did not use public transport were that it was unavailable, inconvenient and too slow (Sub. 140, p. 7).

Many people favour keeping fares on public transport low in order to entice people away from road use to reduce congestion, environmental impacts and accidents. For example, the Western Australian Government argued:

A full cost recovery policy for urban public transport would result in high fares relative to the cost of private motoring. This will cause a significant increase in car usage with consequent higher social and environmental costs and lead to distortions in investment decisions and in resource allocation. (Sub. 170, pp. 33-34)

An important issue is how much travel by private car is discouraged as a result of subsidies to public transport. Empirical studies suggest that quite significant subsidies to public transport would be needed in order to induce a major reduction in car travel. For example, based on the findings in table B.5 of appendix B, a decrease in rail fares of ten per cent would reduce car travel by only about one per cent. Other studies indicate that a decrease in bus fares of ten per cent would reduce car travel by less than one per cent. In most Australian cities, buses are the dominant form of public transport. For cities in which a greater proportion of trips were made by public transport, the reduction in car travel (in percentage terms) could be greater.

In commenting on the draft report, the ACTU/Public Transport Unions (Sub. 271, p. 29) considered that shifts of this magnitude, while not appearing to be large in percentage terms, would imply quite a significant change in patronage for public transport.

Nonetheless, a subsidy of sufficient size to induce a worthwhile reduction in car travel would have the effect of encouraging subsidised travel by those who would not have travelled at all, or would have otherwise travelled by a less subsidised mode. For example, if a reduction in rail fares of ten per cent were not accompanied by offsetting changes in bus fares, it is estimated that bus travel would decline by around one per cent. There are also indirect costs associated with raising the revenue to fund the subsidies. As discussed in chapter A9, charging road users directly for the costs of congestion is a more

effective means of limiting road use during peak times than providing subsidies to public transport.

Also, there could well be some public transport services which should not be provided at all (for example, services to very low density suburbs where most travel is to and from dispersed locations). One of the positive effects of pricing systems that better reflect costs is that those who provide urban transport services will have a better idea of which modes best serve the needs of particular areas.

Fare restructuring is part of a reform package

The current levels of farebox cost recovery of Australia's public transport systems are relatively low, at 16 to 45 per cent (see chapter A3). If no other measures are taken, quite significant fare increases would be required for some systems in order to achieve full recovery of operating costs. For example, CityRail said it would need to increase fares to more than twice the current level in order to cover the costs of operation and infrastructure rehabilitation (Initial hearing transcript, p. 591), and the State Transport Authority of South Australia said that fares would need to be increased four-fold in order to cover the economic costs of providing its services (Initial hearing transcript, p. 40).

The extent to which fares would need to be increased as part of the reform process depends on the efforts made to:

- reduce costs;
- improve the quality of services;
- reduce highly uneconomic services;
- introduce fare structures that better reflect the costs of providing individual services; and
- address the issue of concessional fares, which currently impact adversely on cost recovery (see chapter A8).

It will also depend on the level of payments for community service obligations that are made by the government to the operator.

Priority should be given to restructuring fares so that they more closely reflect the costs of providing individual services, to improving service quality, and to reducing costs. Initiatives in these areas should be phased in over several years. Any fare increases should be accompanied, if not preceded, by improvements in service quality.

The introduction of congestion pricing, as discussed in chapter A9, would help to offset any adverse effects of fare restructuring on public transport patronage.

This approach will assist the introduction of fare increases, which will not be easy to implement, due to both institutional and social factors. As noted by the Victorian Government:

The PTC's problem now is that although many full fare passengers might have been prepared to pay much higher fares if they had been increased progressively with wage increases, the shock of large increases required to restore fares to cost-covering levels would divert significant traffic (Sub. 186, p. 30).

In their responses to the draft report, many participants stressed the need for fare restructuring to be accompanied by service quality improvements. The City of Melbourne (Sub. 259, p. 3) considered that there had actually been a decline in service quality in Melbourne which, along with fare increases and no demonstrated improvement in efficiency, had served to discourage travel on public transport.

As part of this inquiry, the Commission simulated the effects of (separately) a shift to distance-based public transport fares, and a parking surcharge of \$2 a day in central Melbourne, using the MULTI model (see appendix C). The simulations indicate that transport changes have important effects on employment and residential patterns. For example, introducing a fare structure that varies more closely with distance would tend to result in a shift of the population towards the city centre, but new employment would tend to be created further away from the city. Reforms to urban transport pricing need to take into account these wider economic effects.

A7.5 Current arrangements for urban transport investment

Urban roads

Each level of government plays a role in deciding on investment in urban roads (see chapter A4). The bulk of urban arterial roads are financed by state and territory governments. Investment is undertaken by state and territory road authorities in accordance with plans approved by government. The Commonwealth Government provides Specific Purpose Payments to State and Territory Governments to build national highways and certain arterial roads considered to be of national significance.

Local roads are the responsibility of local government. Increasingly, property developers are being required to bear all the upfront costs of roadworks in their

developments (IC 1993, p. 179). Councils receive some grants from the Commonwealth which are ostensibly for roads, although since 1991-92 these funds have been untied. State governments also provide grants for local road expenditures, often for roadworks which are associated with the operation of the arterial road system.

Several participants pointed out that facilities for bicycles are frequently neglected in appraising road projects — see chapter B6.

There are some examples of urban toll roads financed and built by the private sector, under build-own-operate-transfer arrangements. These include the M4 and M5 Motorways and the Harbour Tunnel in Sydney, and the Gateway Bridge in Brisbane. Private sector involvement is being sought for the Western Ring Road in Melbourne.

Urban public transport

Urban public transport investments include rail tracks, stations, bus depots, signalling equipment, rolling stock, and other assets which require large capital outlays.

In all states and territories, investment proposals by government transport authorities need government approval (see table A5.1 in chapter A5). Limits to the discretion of authorities are as low as \$150 000 for Transperth and rarely reach \$1 million.

Often, the expenditure forms part of the capital works budget process. If approval is given, authorities are then given access to the necessary funds borrowed by state or territory governments. Repayment responsibilities are often assumed by state treasuries either at the time of borrowing or later (for example, the NSW Treasury took over the debts of the State Rail Authority of NSW).

Local governments also finance bus interchanges and bus stops, often in association with funding from other levels of government. In the case of the Melbourne city underground rail loop, project costs have been partly funded by the Victorian Government and a levy by the City Council.

While most urban public transport investments in Australia are funded by state and territory governments, the Commonwealth Government also provides some funding through programs such as the Urban Public Transport program (until it ended in 1992-93) and the Building Better Cities program.

Tenders have been called for the construction and operation of a light rail line to Ultimo-Pyrmont in Sydney's inner west. Expressions of interest have also been

called for the provision of transport services to Sydney's northern beaches, and a tram line for the central business district of Hobart.

The Public Transport Corporation and private sector firms jointly developed the Box Hill Central bus-rail interchange and shopping centre development in Melbourne. Private sector involvement has been sought for some railway stations in Melbourne.

Private operators of bus services make their own decisions on equipment and infrastructure purchases.

A7.6 Problems with the current approach to investment

There is no point making an investment in urban transport which does not result in a net benefit to the community, or which results in less net benefits than some alternative investment. Where there are benefits and costs associated with an investment proposal that affect the community generally, governments usually have the final say, although there may be special committees established to examine the pros and cons of a project. Within this framework, it is necessary to ensure that the processes followed in reaching decisions about urban transport investment lead to desirable outcomes.

Critical questions are:

- does the proposed investment actually help to address a specific transport problem, improve the level of service generally, or respond to particular needs?
- is it the best option, that is, the one with the highest net social benefit? (judgments will need to be made where tradeoffs are involved).
- are the advantages and disadvantages of various modes of transport fully taken into account?
- can the community afford the proposed facilities?

During the inquiry, the Commission received a range of views from participants on the processes for deciding on urban transport investments in Australia. Many participants highlighted problems with the current approach to urban transport investments, including the methods used for investment analysis, failure to take a longer term view into account, and political interference. Doubts were also raised about the economic justification of some projects.

Investment decision-making

Roads

Road investments are rarely subject to a full cost-benefit analysis. Most state and territory governments have a set of project evaluation guidelines. However, it is not clear how effective project evaluation is in practice, nor to what extent such evaluations influence investment decisions. It is also unclear the extent to which ex-post evaluations are done.

The Roads and Traffic Authority of NSW said that:

The current approach is that road programs should provide a benefit to the community of at least twice their cost (except for community service obligations) and all projects within a program should provide a value of at least their cost (Sub. 179, p. 6).

Evaluation of road projects needs to take into account indirect effects, such as changes in travel behaviour. For example, survey evidence suggest that some people take advantage of any initial reduction in congestion to reschedule their trips closer to the peak (see appendix B), thus reducing the initial impact of road investments on lessening congestion.

There are indications that the present allocation of road funding may be inappropriate. For example, a study by Allen Consulting Group prepared for the Australian Automobile Association found that there is relative under-investment in major urban roads vis-a-vis local and rural roads:

... the historical pattern of investment has led to relative over-investment in local and rural roads and under-investment in major urban roads. An economically optimal pattern of investment should result in returns from investment in each category of road being similar. Instead the results show higher returns from investment in urban roads than from investment in local and rural roads. (Allen Consulting Group 1993, pp. ii-iii)

The study concluded that:

There is little basis for believing that the present level and pattern of funding of road infrastructure is economically optimal (Allen Consulting Group 1993, p. ix).

Similarly, a 1988 study by the Bureau of Transport and Communications Economics said that:

Many Australian roads, usually for quite complex reasons, are provided with a vast degree of over-provision of capacity. On many other roads, particularly in city areas, there is a good degree of under-provision of capacity. (BTCE 1988, p. 32)

In the past, growing congestion has led to the widening of roads and the construction of new freeways and other road facilities. Most recently, there has been a renewed call for expanded road investment, particularly in urban areas. For example, the Allen Consulting study argued that there are significant gains to be made from greater investments in urban arterial roads. In contrast, many

participants argued that roads had been overprovided. In the Commission's view these questions cannot be settled without rigorous application of cost-benefit analysis, and release of these studies for public consultation.

Allen Consulting also questioned many aspects of the processes for appraising road investments:

The manner in which decisions about infrastructure investment take place can also be criticised. The allocation of funding between States and between regions has often been influenced by political factors. Engineering standards rather than economic analysis may influence the level of investment. Public information about investment decisions is limited. Traditional road investment measures of return, such as user time saving or accident reductions, are not linked to broader economic outcomes. (Allen Consulting Group 1993, p. ix)

The House of Representatives Standing Committee on Transport, Communications and Infrastructure (the Morris Committee) found that little attention has been given to the efficiency with which road funds are spent. It said that there is:

... growing realisation of the futility of past political debates that centred on the level of road funding rather than on how well road funds are spent (House of Representatives Standing Committee on Transport, Communications and Infrastructure 1993b, p. 4).

The Coalition for Urban Transport Sanity (Sub. 250, p. 12) cited Sydney's Gore Hill Freeway extension, the Harbour Tunnel, and the proposed M2 Motorway as examples of road investment decisions which have not been subjected to effective project evaluation.

During the inquiry, a number of participants questioned the process of decision-making on the proposed M2 Motorway in Sydney. (Box A7.2 provides a brief description of the project.)

Several participants also suggested that on-road and off-road facilities for cyclists were frequently ignored in transport planning decisions (see chapter B6).

Public transport

Most major public transport investment proposals undergo some form of appraisal, often in the form of a formal cost-benefit analysis. CityRail said:

A cost-benefit analysis is carried out on all enhancements identifying all costs and benefits associated with the project. The cost of a project can include social, environmental, as well as installation and capital costs; and benefits can include improvements in reliability, safety and frequency as well as enhanced patronage. (Sub. 46, p. 5)

Box A7.2: How investment decisions are made: Sydney's M2 Motorway^a

In 1989, the Roads and Traffic Authority (RTA) of NSW proposed the construction of an 11.5 kilometre expressway (then known as the F2), to run between Carlingford and North Ryde, in Sydney's northern suburbs. In view of the public criticism of the project, the then NSW Government formed a Commission of Inquiry (the Woodward Commission) to examine the merits of the project, under the guidelines set out in the NSW Environmental Planning and Assessment Act.

The Woodward Commission recommended against the construction of the F2, as it considered that the proposed road would not solve traffic congestion problems and would have a significant adverse environmental impact. The Commission considered the upgrading of existing roads, together with improvements in public transport, to be a more effective solution to peak period congestion. It also recommended that a detailed public transport study of the region be undertaken.

Subsequently, the RTA put forward a revised proposal. Known as the North West Transport Link, it encompassed the original plan (F2 East), plus an extension (F2 West) linking Carlingford and Baulkham Hills. In 1992, separate environmental impact statements were released for the two parts of the project, and the public was given an opportunity to comment. In all, over 14 000 representations were received. After considering these views, in May 1993 the Roads and Traffic Authority issued an Environmental Impact Assessment Report which supported the construction of the entire project.

The NSW Government has approved construction of the \$500 million privately funded M2 Tollway, and has selected a private consortium (The Hills Motorway Ltd) to submit a final offer to build and operate it.

During the inquiry several groups, including the Coalition of Transport Action Groups (Sub. 36) and the North Ryde Residents Group (Sub. 136), were extremely critical of the NSW Government's handling of the M2 project. These groups claimed that road projects frequently fail to include an assessment of the full environmental impact. Major questions have also been raised about the economic viability of the M2 in an article by Goldberg (1993).

The RTA (Sub. 336) noted that several local community groups, as well as the local councils of Hornsby, Parramatta and Baulkham Hills, strongly support the construction of the M2.

a M2 and F2 refer to the same project.

The extent to which the results of cost-benefit analysis actually guide decisions is open to question. According to the State Transport Authority of South Australia, economic evaluation rarely results in a net positive value of quantifiable amounts (Initial hearing transcript, pp. 10-11). CityRail indicated

that there is no set hurdle rate of return on rail investments that is applied (Initial hearing transcript, p. 605).

During the inquiry, several participants cited examples of poor investments in public transport. For example, the Public Transport Users Association said that the problem in Melbourne is that investments in public transport were misdirected, not that funds were insufficient (Sub. 96, 'Financial Crisis', p. 8). It considered that the funds spent on replacing Melbourne's suburban railway stations would have been better spent on modernising signalling facilities.

Messrs Burt, Hill and Walford cited several examples of poor rolling stock in Melbourne's rail system, where prototypes were not subjected to proper testing prior to acquisition (Sub. 98, p. 11).

Criticism of investment decision making has also been levied at the purchase of 130 new light rail vehicles in 1986 which were designed to replace ageing W-class trams and to operate on converted light rail routes in Melbourne. According to the Victorian Auditor-General:

Since 1990, the [Public Transport] Corporation has held increasing numbers of light rail vehicles in excess of its immediate service needs. At 31 March 1993, it held 63 surplus vehicles. After taking into account interest or opportunity costs on funds ... audit estimates that around \$126 million has been prematurely outlaid by the State since 1990 to acquire these vehicles. (Victorian Auditor-General 1993, p. 256)

The Independent Commission to Review Public Sector Finances (1993, p. 156) noted that the Perth Busport cost ten times in excess of the commercial cost of constructing the required facility, and added significantly to operating costs, but with no positive effect on patronage.

The Western Australian Government commented in its initial submission that well accepted techniques such as cost-benefit analysis are inadequate for evaluating the appropriateness of investment decisions:

The present decision-making frameworks are not adequate for assessing whether decisions are 'appropriate' or 'inappropriate', except within narrowly defined boundaries which do not reflect the complex realities of the modern world. Whilst there are examples of 'inappropriate' decisions within the conventional transport planning paradigm, such decisions cannot necessarily be so-labelled in the context of the long term interests of the community. (Sub. 170, p. 39)

It also said that it does not evaluate the appropriateness of past projects:

It is difficult to determine whether any investment decisions made in the past were inappropriate as no post-implementation audits have been carried out. Transperth intends to carry out such audits in respect of recent large investments (Sub. 170, p. 39).

There was a range of views from inquiry participants on the northern rail line in Perth (see Box A7.3). Associate Professor Newman (Sub. 243) strongly supported the project, while the City of Fremantle (Initial hearing transcript,

p. 228) and Professor Neutze (DR transcript, pp. 284-85) questioned whether the construction of the line was justified.

There are several urban rail projects being funded under the Building Better Cities program. The Department of Transport and Communications said that the extent of cost-benefit analysis for these projects varied from state to state (Initial hearing transcript, p. 1233).

Emphasis is placed on minimising up-front costs

Another common problem of urban transport investments is that the pressure of minimising budget costs in a particular year can mean that too much attention is given to upfront costs and not enough to subsequent maintenance and replacement costs. Inappropriate expansions in capacity often result in ongoing costs which do not generate adequate benefits.

For example, the Australian Local Government Association (Sub. 215, p. 5) said that many investment decisions in the past were made without an appreciation of the requirement for on-going funding for maintenance and replacement of public assets.

An evaluation of investment options needs to consider the benefit-cost tradeoffs associated with investing in new capacity as against spending funds on upgrading the existing facilities, as well as demand management options.

Political influences

Proposals may also be approved simply because they appear to be electorally attractive in the short term. The NSW Treasury noted that:

The Booz Allen Hamilton review of State Rail indicated that investments in the past were directed to high profile areas and away from the low profile sectors such as track renewal, signalling and station improvements (Sub. 177, p. 8).

Similarly, in the case of roads, the Allen Consulting Group (1993, p. ix) found that decisions about the level and pattern of road investment are heavily influenced by political factors and institutional structures rather than market forces. It said that:

The allocation of funding between States and between regions has often been influenced by political factors (Allen Consulting 1993, p. ix).

The Australian Road Federation noted that many road projects are designed to suit the availability of funds, rather than funds being allocated in response to needs for improved accessibility (Sub. 13, p. 1).

Box A7.3: How investment decisions are made: Perth's northern suburbs transport corridor

Perth's Northern Suburbs Transit System (NSTS) consists of a new passenger rail line and a number of cross-suburban bus services which also provide feeder services to the rail line. The first stage of the NSTS, connecting central Perth with Joondalup, opened in March 1993. The NSTS was constructed following an appraisal of the transport needs of Perth's northern suburbs transport corridor — a rapidly expanding area.

In April 1988, a study by Travers Morgan recommended a busway, mainly on the grounds of lower cost and greater flexibility, after examining a number of options for the northern corridor. (Up to that time, the northern suburbs had been served by direct bus services to Perth's city centre.) In October 1988, a review panel recommended a rail-and-bus system instead (estimated cost \$151 million in 1989 prices), based on the view that this option has a higher quality of service, a strong impact on land use, the ability to link with bus feeder services, and projected savings in operational costs in the long term compared with a bus-only option.

In December 1988, an in-principle decision was announced to proceed with the rail-and-bus system, and a Master Plan was asked to be drawn up. In November 1989, the then WA Government approved funding of the project, based on the Master Plan, which included significant changes to the scale of the project to that considered in the earlier reports, including an extension to the length of the rail line and an upgrading of stations.

Final capital costs of the entire project, excluding the effects of freeway works and savings in the bus fleet, are expected to total \$263 million (\$235 million in 1989 prices). This compares with the Master Plan estimate of \$223 million. The project has been financed entirely from WA Government funds.

The northern rail line is estimated by Transperth to be recovering 13 per cent of costs (including interest and depreciation); this figure increases to 49 per cent if interest and depreciation are excluded. Associate Professor Newman (Sub. 331) noted that, if fare concessions were included in revenues, and a lower bound estimate of costs were adopted, cost recovery for the northern line could be as high as 74 per cent.

A survey conducted for Transperth has found that about 25 per cent of the peak-time passengers on the northern suburbs line are people who previously travelled by car (Westrail, DR transcript, pp. 41-42). A factor which has made it more difficult for the line to attract new passengers was the widening of the Mitchell Freeway by the Department of Main Roads at the same time the line was being constructed in the median.

Many participants considered that current processes favour roads. For example, the Coalition for Urban Transport Sanity felt that there has been a bias toward road-based transport:

As the Australian political environment has traditionally favoured automotive and road construction interests, improvements in transport pricing will need to overcome this

bias ... The attention given to improving the efficiency of public sector agencies tends to be biased toward the providers of transport services rather than the agencies responsible for road infrastructure and regulation. (Sub. 20, pp. 4-5)

A7.7 Reform of investment processes

The reforms recommended elsewhere in this report will improve the environment for investment. For example:

- the injection of competition in the provision of transport services, and the greater commercial focus that will result from corporatisation, will increase the pressure for investments to be geared towards the needs of users;
- congestion pricing for peak-period use of urban roads, and greater differential between peak and off-peak fares for public transport, will encourage more people to rearrange their travel so as to make use of facilities during off-peak times wherever possible. This will reduce the pressure to increase capacity to cater for peak period demands; and
- a clearer definition of CSOs for environmental, equity, or other reasons will increase the pressure to justify urban transport investments in terms of net social benefits.

Increasing reliance on formal cost-benefit analysis and appreciation of its role is necessary to improve investment decisions. Investment appraisal should consider a broad range of solutions to the urban transport task. Public sector transport agencies are making progress in the use of such techniques.

The Commission recommends that for major transport infrastructure investments, cost-benefit analysis should be undertaken and made public. This would facilitate community debate about the relative merits of different investment options. Investment analysis should include all feasible options and the effects on third parties.

A7.8 Alternative arrangements for financing investment

Apart from the users of urban transport facilities, other members of the community also benefit. For example, property developers and owners, as well as local retailers and employers benefit from the presence of transport links. More efficient investment decisions might be expected if these people made a contribution to the cost of providing the facility in line with the benefit they received. This might involve, for example, levies on property owners, or developer charges. These payments are usually known as 'value capture'. Since

the benefit is received not from using the facility, but by people accessing services via the transport facility, the contribution could either be made before a facility is built, or in the form of revenue raised after the event to help meet ongoing costs.

During the inquiry, many participants supported the financing of transport investments from levies on non-users who benefit from the facilities. For example, the Coalition for Urban Transport Sanity said:

Transport pricing also needs to incorporate the collection of contributions from non-user beneficiaries for public transport ... The use of levies on landowners and employers for public transport is a strong trend in European countries (eg. France, Germany, Switzerland). Federal road funds and developer contributions can and should be used by local government for public transport. (Sub. 20, p. 4)

Similarly, Messrs Hutchinson and Gargett argued that:

As the benefits of publicly funded services and infrastructure accrue to property owners and businesses (as well as customers of these services) there is a case for capturing the increase in property values as a way of funding new infrastructure, and possibly also services (Sub. 56, p. 18).

CityRail considered:

Rail does not capture the very large positive effects it has on surrounding land uses. The introduction of rail can often ensure a doubling in development density and the introduction of various commercial uses. (Sub. 46, p. 7)

Developer contributions to infrastructure provision

Although many local roads and some bus facilities (such as bus shelters and interchanges) are financed partly by developer contributions, few governments in Australia have sought developer contributions to the cost of providing rail infrastructure. This may be related to the difficulty of coordinating decision-making across the various local governments over whose jurisdictions a rail line passes.

In principle, there is no reason why rail services as well as roads could not be charged for when supplied to new developments, provided developers could choose to either accept or reject the rail line. Joint development of rail stations or bus interchanges can result in positive economic benefits for the local community, as well as help to encourage patronage on public transport services.

Most on-site roads are now provided at developers' expense (IC 1993). In addition developers are often required to pay for some of the links to the larger road network. However, as the Commission suggested in its 1993 Report on *Taxation and Financial Policy Impacts on Urban Settlement*, there is some scope to recover costs of collector or arterial roads from developer charges.

This approach was supported by the RTA of NSW:

Current legislation in NSW does not lead to a full apportionment of costs of infrastructure provision because cost recovery from developers or other beneficiaries, particularly in the roads area, is insufficient and is not applied in a consistent manner (Sub. 179, p. 3).

If road authorities are to recover the cost of providing roads through developer charges it is important that the charges have a clear nexus with the cost of investment and that developers are free not to proceed with development if they choose not to pay them. If developers choose to pay them, there is some confidence that they can recover the cost from purchasers of developed blocks who implicitly must benefit to the extent of the charge.

The Commission recommends that governments examine the possibilities of local developer contributions for new transport facilities, including roads as well as other infrastructure used by public transport.

Other forms of value capture

Value capture can also take the form of a tax on the increased property value associated with the introduction or upgrading of a transport facility. Property values are influenced by factors other than transport infrastructure (such as general market conditions, provision of other infrastructure, and growth of the city) and as a result, cause and effect may be difficult to disentangle. From the perspective of improving investment decisions, the key requirement for value capture mechanisms is that the value created by the investment truly exists. For if the levy simply becomes a tax, unrelated to value changes, the incentives for efficient infrastructure provision are not created.

It is critical that the implementation of measures for value capture be undertaken well in advance of the decision to construct the infrastructure, since the interest of property developers in contributing to the cost of the infrastructure will diminish as property prices increase. The Perth northern rail line was financed entirely from State Government funds, though the review panel had identified the potential for developer contributions to defray capital costs. Part of the problem was that property values had already begun to rise in areas surrounding the rail line by the time serious consideration was given to eliciting developer contributions.

A variant of the property levy involves the infrastructure provider negotiating with local government for contributions to new investment. For example, the rail authority may negotiate with a series of local authorities along a rail route for contributions to the infrastructure being considered. Eventually, this may result in a levy being put in place by the local government(s) involved. However, because the infrastructure provider must obtain initial agreement from

the local government, there is some protection built into the process that ensures that the eventual levies are not completely out of line with the value to the local community.

Sweezie (1989) outlined a number of alternative value capture techniques for recouping some of the enhanced value of the adjacent, or nearby, property attributable to rapid transit developments. These include joint development, sale and leasing of land owned by the public transport authority, and sharing revenue from property taxes raised by local governments.

In some countries, employers and retailers have been asked to contribute to the cost of public transport facilities. In Paris, a tax on employers is used to finance the cost of public transport, and in California local sales taxes are used.

State and local governments should explore further the ways in which non-users of transport services that receive a benefit can contribute to the costs of providing and maintaining the facilities.

Private sector funding and provision of infrastructure

The willingness of the private sector to fund and provide infrastructure can in some circumstances be an indication that benefits to users and other beneficiaries exceed costs.

Private sector involvement in infrastructure projects may allow certain worthwhile projects to proceed which are unable to be completely funded by governments. However, arrangements for private sector involvement should ensure that there is appropriate sharing of risk, and that there are actual cost savings for the community from such involvement.

There are a number of means for the private sector to be involved in the provision of transport infrastructure; some of these may include operating and owning the facility for a set period of time (see chapter B2 for further details of recent light rail proposals in Sydney).

Private sector participation in the provision of infrastructure is the subject of a future Commission inquiry.

A8 SOCIAL ISSUES

Current policies aimed at fulfilling social objectives in transport have not been effective in meeting the needs of many in the community. The most disadvantaged often receive relatively little assistance, and subsidies often leak to those who are relatively well-off. Untargeted subsidisation of conventional public transport is not an efficient way of helping those in need. Assistance to the transport disadvantaged needs to be carefully specified and expenditure explicitly directed to meet objectives. Reforms recommended elsewhere in this report, which will result in a wider role for taxis at lower fares and encourage participation in the operation of community transport, will do much to ease the difficulties faced by the transport disadvantaged, particularly people with disabilities.

A8.1 Introduction

Access to transport by all members of society is often identified as a prime goal of social policy. Transport is necessary for many basic aspects of everyday living such as shopping, working and obtaining medical treatment, as well as broadening participation in community activities. In the words of the Benevolent Society of NSW:

Transport is a crucial factor in enabling social interaction and access to services for all people in the community and hence maintaining their quality of life ... Lack of access limits not only an individual's personal development but also their contribution to the community. (Sub. 38, p. 6)

The achievement of acceptable standards of access to transport by all groups in society may require financial support for those who would otherwise be disadvantaged. Such assistance is currently delivered through the subsidisation of public transport, transport concessions (including those relating to private motor vehicle use), and general income assistance through welfare payments. This chapter examines current ways of achieving social policy objectives in transport and evaluates other approaches.

A8.2 Assistance to the transport disadvantaged

Who are the transport disadvantaged?

A general definition of transport disadvantaged is 'those people who have mobility and access problems most of the time'. Two broad groups are often singled out:

- those who cannot use conventional public transport regardless of its provision and efficiency; and
- those who can potentially use conventional transport but are living in areas where no service exists (Morris 1981).

Many different individuals fall into these groups and the source of their disadvantages differ (see table A8.1). The needs of the transport disadvantaged are as diverse as the composition of people within this category.

Not all transport disadvantaged people are poor, which complicates questions of government assistance. For example, many would question the provision of assistance for some well-off members of society, if the source of their disadvantage is simply that transport options are limited to more expensive alternatives such as taxis.

Transport disadvantage can considerably aggravate problems for those who are already less well-off for other reasons. For example, those actively seeking work can face considerable difficulty if they are required to seek employment in locations which have poor access. The Community Transport Organisation noted that:

The unemployed discover that a high proportion of jobs are now based away from public transport and many employers insist on car ownership as a prerequisite for employment (Sub. 28, p. 3).

What assistance is available?

There is a range of government measures aimed at helping the transport disadvantaged, including:

- operating subsidies to public transport intended to fulfil government (usually State Government) social objectives;
- concessions on public transport fares for specific groups of beneficiaries;
- operation of non-commercial public transport services (for example, low patronage/weekend/late night services);
- services to new areas;

- government requirements to make public transport accessible to all in the community (for example, modifications to allow access by wheelchairs);
- provision of assistance for community transport services;
- taxi subsidy schemes for those with disabilities; and
- Commonwealth subsidies for those with disabilities.

Table A8.1: Transport disadvantaged groups

<i>Transport disadvantaged group</i>	<i>Nature of disadvantage</i>
Young	
Very young children	Unable to travel alone
School age children	Dependent on parents, older friends or public transport for motorised mobility
Working or unemployed youths without a car (working or living in outer suburbs)	Difficulty of reaching employment (actual or potential) via public transport, especially in outer areas
Elderly	
Aged / frail	Cannot or do not drive. Failing physical faculties reduce ability to drive, and/or use other means of transport (including walking)
Poor	
Asset / income-poor	Lack of money to own and run a car and/or to afford cost of public transport
Information-poor (for example, migrants and new residents)	Lack of knowledge of available services due to language difficulties and/or lack of familiarity with new area
Home Workers	
Homemakers	Household car may not be available during the day. May be unable to drive (unlicensed). Tied to children (time constraints, prams, etc)
People with disabilities	
General disabilities	Difficulty in driving and/or using conventional forms of public transport
Physically ill	Availability of parking spaces and public transport stops close to destination is critical

Source: Based on Morris 1981

Operating subsidies

Urban public transport has traditionally attracted large operating subsidies for purposes which include assistance to the transport disadvantaged. The objectives of this form of assistance are often specified in very general ways

which make it unclear precisely who the beneficiaries are intended to be (see chapter A5).

Concessions

The most visible way in which governments intervene in transport in pursuit of social goals is directing public transport authorities to provide concessional travel to certain categories of people:

- all states and territories provide concessions to school-children, tertiary students and young children;
- all states and territories except the Northern Territory provide concessions for senior citizens; and
- those on low incomes or in receipt of social welfare payments also receive concessions, often by providing evidence of a Commonwealth Health Benefits card or a TC1 (Commonwealth Transport Concession) card.

Concession card holders make up a large part of public transport travel. In Tasmania, approximately 71 per cent of all trips on the Metropolitan Transport Trust (Metro) are undertaken by concessional travellers. Similarly, in South Australia, State Transport Authority (STA) patronage is overwhelmingly concession-oriented with around 65 per cent of passengers being either school students, tertiary students or concession holders. The Northern Territory Government estimates that around 66 per cent of bus passengers in Darwin ride at concession fares; corresponding figures are 57 per cent for Melbourne and 45 per cent for Brisbane (CGC 1993).

Operation of non-commercial services

Transport agencies have also been required to provide routes and timetable frequency into areas where cost recovery is particularly low. In part, the aim is to provide access to transport for members of the community who, for whatever reason, are unable to use private transport in areas and times where it would be unprofitable for operators to provide it.

Public transport accessibility

All Australian capital cities have some requirements for transport agencies to take into account the needs of people with disabilities. These requirements include such items as the provision of special ramps for wheelchairs and low-floor buses to assist the elderly.

The new Commonwealth *Disability Discrimination Act 1992* has the potential to require transport agencies to provide a more comprehensive service for people with disabilities. This is discussed later in this chapter.

Provision of community transport

Community transport comprises a range of specialised transport providers that play a valuable role in providing services of a localised and/or specialised nature. Analysis in chapter B5 suggests that community transport has the potential to play a much larger role in the transport task, but is currently impeded by inflexible regulations and funding arrangements.

Taxi subsidy schemes

States and territories provide concessions on taxi travel to people with severe disabilities. Typically this involves subsidisation of half the fare with an upper limit on the number of trips each year. There are also supplier subsidy schemes to allow operators to provide suitably modified vehicles to carry people with severe disabilities.

Other subsidies

The Commonwealth Government offers a number of other schemes (for example, the Commonwealth Mobility Allowance) which provide assistance in making trips for specified purposes by disadvantaged people, such as those with severe disabilities.

The scale of transport 'welfare' subsidies

While the need to help the disadvantaged is offered as one reason for subsidising public transport, data on the extent and incidence of these subsidies are relatively sparse. In general, it is not known where these subsidies ultimately have an impact and to what extent objectives are being met.

As public transport agencies around Australia do not accurately cost their community service obligations (see chapter A5), there is no way of knowing the true cost of meeting social objectives. Further, there are no accurate measures of the subsidy split between social objectives and expenditures directed at other objectives, such as improving the environment, although some state agencies provide tentative estimates.

The Commission has compiled some estimates which together give an indication of the magnitude of funding involved (see box A8.1). It must be stressed that this information is not comparable across the states and territories, since the reliability of the data varies markedly.

The lack of reliable data is, in part, a reflection of the lack of management information systems (or the means to set one up, such as electronic ticketing) and the lack of transparent cost accounting (see chapter A5). Without good

information systems it is difficult to decide where money could be best allocated to meet government social objectives in transport.

Box A8.1: The costs of meeting social objectives

NSW spent \$650m of its transport budget on social objectives in 1991-92. Social expenditures within the State Transit Authority consisted of: subsidies to pensioners and others on privately operated buses and ferries (\$18m); conveyance of school children (\$217m); community service payments (\$12m); reduced fares and increased services (\$227m). The State Rail Authority's social expenditures are not broken down, but totalled \$176m for CityRail.

The Report of the Victorian Commission of Audit (1993, vol. 2, p. 146) estimates expenditure on social obligations at \$118m in 1991-92. However, this figure includes non-urban transport and does not give a breakdown by service (for example, freight).

Brisbane Transport (Sub. 173, pp. 34 - 37) estimates the total cost of its social objectives at approximately \$30m. This consists of concessions (\$10m); free travel (\$1m); Sunday services (\$2m); Saturday services after 12 pm (\$3m); Monday to Thursday evening services (\$5m); Friday evening services (\$1m); and input and pricing disabilities (\$8-\$9m).

The Western Australian Government (Sub. 170, p. 50) defines social services as services provided on week nights, weekends and public holidays. They cover 25 percent of bus operating costs and 40 per cent of the suburban rail operating costs. Based on the above notional distributions, the Transperth *Annual Report 1992*, indicated that \$28m and \$31m were spent on rail and buses respectively to meet these obligations.

In its 1992 *Annual Report*, the State Transport Authority of South Australia defines and costs its social objectives for that year as: students (\$19m); pensioners and seniors (\$9m); unemployed persons and dependent spouses (\$2.2m); and blind persons and incapacitated ex-servicemen (\$1m). This gives an approximate total of \$31m.

The Tasmanian Metropolitan Transport Trust (Sub. 148, pp. 4, 22) defines its social obligations as concession travel (and some full fare services which do not cover cost), unprofitable services such as those on Saturdays and Sundays, and provision of services for those in the community who do not have access to private or any other transport (that is the transport disadvantaged). The cost of these services is estimated at \$8m a year.

The ACT Department of Urban Services (Sub. 167, p. iv) indicates that expenditures on social objectives were approximately \$9m in 1992. These are split into fare concessions (\$2m) and school bus services (\$7m).

The Commission recommends that the cost of meeting various social objectives be made explicit by identifying the costs of providing concessions to particular groups and the incremental costs of providing non-commercial services.

In response to the draft report, many States indicated that they are making progress in the area of implementing a transparent community service obligations methodology. These issues are taken up in the context of corporatisation in chapter A5.

A8.3 The effectiveness of subsidies

Subsidies for particular groups in society achieve the largest effect at least cost if they are accessible to as many people as possible in the target group, and spill over to as few as possible outside the group.

On the whole, transport subsidies do not appear to meet this criterion. There is evidence that not all beneficiaries of subsidies are disadvantaged people, and that not all disadvantaged people are beneficiaries of subsidies.

Existing subsidies are spread among all income groups

In examining who benefits from public transport subsidies, it is important to bear in mind the distinction between specific concessions and general operating subsidies. Benefits from the general operating subsidy usually accrue to all users of the system, since even full fares often incorporate a subsidy (see chapter A7).

This has implications for the question of the distribution among income groups of transport subsidies to rail (see figures A8.1). It suggests that general subsidies, if they are spread equally across all journeys, are close to being distributionally neutral: they boost the incomes of the more affluent by virtually the same proportion as those who are less well off.

Figure A8.1a:
Weekly expenditure on rail fares

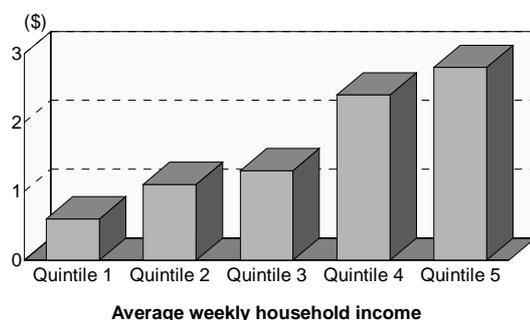


Figure A8.1b:
Percentage of weekly income spent on rail fares

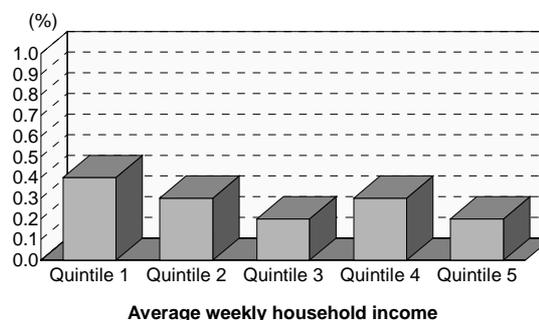


Figure A8.2a:
Weekly expenditure on bus and tram fares

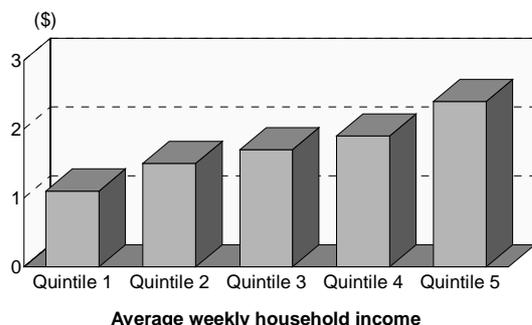
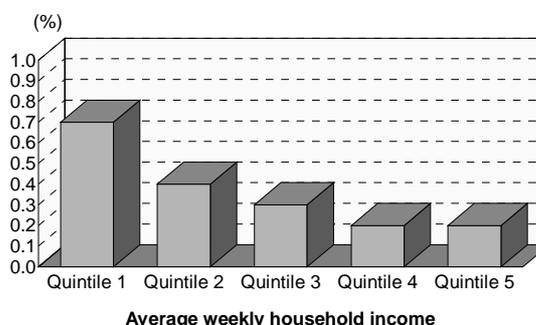


Figure A8.2b:
Percentage of weekly income spent on bus and tram fares



Figures represent average weekly expenditure by capital city households. Quintiles represent household income distribution within five groups, where quintile 1 represents the lowest average weekly household income and quintile 5 the highest.

Source: ABS 1990a.

The expenditure pattern is somewhat different for bus and tram travellers. These modes appear to be used more by people on lower incomes. From figures A8.2 it can be seen that transport expenditure as a proportion of income is quite high for those in the lowest quintile. Furthermore, unlike expenditure on rail travel, this proportion falls away quite noticeably with rising incomes.

Even for bus travel, however, subsidisation appears to be a blunt tool to help the poorer sections of the community, as large portions of this subsidy will accrue to those who have the ability to pay.

Table A8.2: Commuters in five income groups travelling to Melbourne’s central zone by various transport modes^a

	<i>Train</i>	<i>Tram/Ferry</i>	<i>Car as driver</i>	<i>Car as passenger</i>
	(%)			
Less than \$12 000	6.6	10.5	5.7	10.0
\$12 001-\$25 000	38.5	45.3	33.1	45.5
\$25 001-\$40 000	39.0	33.0	37.2	33.5
\$40 001-\$70 001	14.3	9.9	19.5	9.4
More than \$70 000	1.5	1.3	6.6	1.6

a Zone numbers designate the nine zones used the Horridge model in Appendix C. All figures are for travel into zone 1 which constitutes the CBD and some fringe suburbs. As the data includes fringe suburbs, it includes circumferential travel not within the CBD. This has the effect of underestimating the amount of people on higher incomes using public transport.

Source: ABS 1991b and unpublished statistics

The Household Expenditure Survey data is further supported by ABS Journey to Work census data (ABS 1991b) for the city of Melbourne. The census figures in table A8.2 show that the majority of train users travelling to work in the city and its fringes belong to higher income groups.

Subsidies for peak travel mainly benefit higher income groups

The extent of subsidisation depends not only on expenditure on fares, but also on the degree to which journeys taken by people in particular income groups are subsidised. For example, people on higher incomes generally use public transport for the journey to and from work. This occurs during the peak at which time services are much more costly to provide and attract greater subsidies than travel at other times (see chapter A7). This worsens the inequity of subsidies shown in figures A8.1 and A8.2.

Mr Cotgrove commented:

The major beneficiaries of urban public transport services are the employees of the authorities who run them and the professional, white collar, central city workers who use the services for journeys to and from work. As such, the massive and growing level of public transport subsidies, far from providing transport services to needy welfare groups, represents an iniquitous transfer of funds from poorer tax payers to more affluent workers. The costs of public transport are incurred primarily to provide capacity for the highly time- and space- concentrated nature of journey-to-work flows to the central business district. These peak period costs, representing infrastructure costs, vehicle fleet costs, maintenance costs, and administrative overhead costs, should properly be borne by those who incur them, namely the central peak-period commuters. (Sub. 160, p. 11)

In similar terms the South Australian Government stated:

South Australia has undertaken considerable research in this area and has a substantial amount of data. In essence, South Australian research confirms overseas research that white collar workers travelling on rail to the CBD in the peak are prime beneficiaries of public transport subsidies — should such a level of assistance be provided to this group? (Sub. 144, p. 12)

The ACTU/Public Transport Unions agreed that the peak subsidy benefits higher income groups but added that they also benefit many on average and lower incomes:

It is essential to remember that the largest percentage of city workers are in the clerical, secretarial and shop assistant areas, and not high income earners (Sub. 271, p. 33).

While this may be so, it is also true that most of these people are in paid employment. It is reasonable to question the need to subsidise the work travel costs of this group of people simply because they ride trains or buses.

Mr Hughes claimed that figures on ACTION buses suggest that the chief groups to benefit from subsidies are employed commuters and school children, accounting for a 36 and 29 per cent share respectively of total bus travel (Sub. 34, p. 73). As noted by the ACT Government in its submission to the Commonwealth Grants Commission (1993), 86 per cent of pensioner/unemployed journeys are in the off-peak period when the cost of providing an additional trip is low.

Subsidies to commuters are further compounded by the arrangements that apply to periodical tickets (for example, weekly, monthly, multi-ride and annual tickets) which are often sold at substantial discounts. Typically, these tickets are aimed at regular commuters. In its submission to the NSW Government's Pricing tribunal, CityRail stated that discounts can be up to 65 per cent (depending on distance).

Peak hour concessions

Concessions provided to target groups often involve access to cheaper fares at the same level regardless of the time of day of travel. The lack of a distinction between peak and off-peak fares for concession holders effectively blocks the signal to users that travel during peak periods imposes a much greater cost than travel during off-peak times. While most travellers during peak periods are commuters, the number of concession holders travelling during this time may nevertheless be significant enough to necessitate investment in additional capacity. Were concession holders to be made aware of the costs of their travel (through differentiated fares), many of them may be able to shift their travel. There is a strong case on economic grounds for charging higher fares for peak than off-peak travel (see chapter A7).

Other concession travellers, however, may have little choice but to travel during peak periods for some trips (for example, doctors appointments). Elimination of concession fares altogether during peak periods may impact severely on such people by effectively restricting the hours of the day for them to get around.

A reasonable balance between these economic efficiency and equity considerations would be to set fares so that concession holders receive a discount on full fares at all times, but pay more for travelling during peak periods than for off-peak periods (for example, as applies in Adelaide). **The Commission recommends that concession fares be set in a way which gives the same proportional reduction in fares, of say 50 per cent, for both peak and off-peak concession travel.** This approach is both administratively simple, and maintains the differences between full fares and concession fares and between peak and off-peak travel.

Other groups may also benefit from subsidies

Some participants also saw some of the subsidy being appropriated by groups other than travellers. The NSW Bus and Coach Association observed that:

There is enough evidence to demonstrate that subsidies are hijacked prior to them being able to deliver the social objectives, namely:

- (a) They are hijacked by employees and management to improve the working conditions and to increase the staff numbers per unit of output;
- (b) They are hijacked by manufacturers to ensure that the capital cost of the rolling stock can be maximised;
- (c) They are hijacked by special-interest groups to satisfy narrow interests. (Sub. 97, p. 32)

The potential for subsidies to be misdirected in this way is greatly increased when the purposes for which payments are made are not explicitly identified. With accurate costing of and accounting for CSO payments, such subsidies have to be fully acknowledged or eliminated.

Many concessions are not well targeted

User concessions, as opposed to supplier subsidies, have the potential to target assistance to those in need. However, many concessions are not means-tested. As a result, those who enjoy subsidised travel may not be those who are in most need.

The elderly

In most states and territories, concessional travel is provided to all those over 60 years of age regardless of income, by means of a seniors card. (In some cities this only applies to persons not in paid employment.) Because such schemes are not means-tested, they benefit people who may be quite affluent. The situation can arise where a relatively high income superannuant rides at a concessional fare, whereas a low income full time employee continues to pay full fare.

Some states target concessions to the elderly better than others. In Queensland, for example, concessions for people between 60 and 69 years of age are restricted to those receiving a pension. This helps to reduce leakage substantially (Queensland Government, Sub. 327, p. 16).

The Commission considers that transport concessions for the elderly should be targeted at those in need and not provided universally.

In submissions on the draft report some participants expressed reservations about this recommendation, arguing that concession travel for the elderly should be provided universally (for example, Ettinger House Inc, Fairfield Family Resource Centre, Sub. 216, p. 4).

The National Accessible Transport Committee argued that universal concessions to the elderly address other issues such as:

- externalities including the benefits of keeping more people out of private cars to minimise pollution, congestion and the costs of accidents;
- evaluations of transport concessions for Seniors' card holders shows that they have a significant role in increasing community participation by seniors who are more likely to get out and about if transport concessions are available. (Sub. 231, p. 10)

However, as analysed in chapters A9 and A10, subsidising users of public transport is not an effective means of addressing congestion, pollution and the costs of accidents. Further, targeting assistance to the elderly who are in financial need may enable greater resources to assist the disadvantaged members of this group.

School children

In all major Australian cities some form of child concession is available for travel on public transport. In some states and territories, there are additional services and additional concessional fares for children travelling to and from school.

The provision of transport for school children is a large expenditure item for State and Territory governments. In metropolitan New South Wales alone, over \$300 million was spent by the State Government in 1991-92 on the conveyance of school children. The Victorian Government said in its submission (Sub. 186, p. 37) that students travelling in the morning peak alone impose an additional burden of \$80 million a year. The ACT Government noted that some school services run by ACTION recover less than 10 per cent of costs (meaning a subsidy of more than \$12 million a year), and that almost two-thirds of the loss on school services is attributable to non-government schools (Sub. 167, p. 20).

Of all the cities which offer school travel concessions, Hobart alone has a means test for the recipients: the Blue Pass allows free travel to children of low income families. Sydney bus and rail travel is free to students who reside more than 1.5 kilometres from school, while students travelling on both Brisbane and Darwin buses are given concessions which are greater than those for children in general.

The rationale underlying these concessions is unclear. There can be little doubt, for instance, that concessions for children travelling to school and the subsidies implicit in the provision of dedicated school services accrue in some measure to children whose families are not disadvantaged.

In many states and territories, subsidies of this type are not considered to be a welfare payment; rather, they are part of a broader policy of subsidised access to

education for all school-aged children. To that extent, the cost of travel is associated with the provision of education.

The Public Accounts Committee of the Parliament of New South Wales (1993) clearly saw school transport as an instrument of education policy and an instrument, moreover, that was changing rapidly in response to changing educational goals:

The history of the [NSW] scheme indicates it has developed in such a way that it no longer reflects its original intention, which was to provide access to education for children living in areas where there were insufficient numbers to justify the establishment of a school ... it has expanded to provide transport for a large proportion (64 per cent) of the school population. Moreover it has become a vehicle for supporting certain changes in education policy, which involve students travelling longer distances than they did before. These changes include de-zoning and the establishment of selective and specialised high schools. (1993, pp. 8-9)

This view of school travel has some implications for funding, which were brought out by the Victorian Commission of Audit. It stated that:

If the Government is to continue to provide this [free bus travel to school] CSO then it should be shown as a cost against the Education portfolio and not Transport since it is in Education that the policy for free student travel is determined (Victorian Commission of Audit 1993, Vol. 2, p. 164).

It is not within the scope of this inquiry to review the degree to which funds should be allocated to education. However, to improve accountability and ensure that appropriate allocations are made among expenditure items within the education budget, the Commission recommends that subsidies for the travel of school children should be funded explicitly from the education budget.

Concessions are restricted to patrons of particular services

Some types of concession for pensioners are only available for use on government-provided public transport. This has the effect of curtailing the concession where a significant proportion of a city's public transport system is provided by private concerns. The New South Wales Bus and Coach Association pointed out that:

In NSW at the moment, \$1.00 excursion tickets for pensioners are only available on the public-sector transport network, not the private-sector buses. In other words, the Government will only re-imburse the public-sector operators for such concession fares. No such re-imbursements are available to the private sector. (Sub. 97, p. 35)

It is not equitable for certain classes of transport users deemed deserving of assistance in one area to be denied assistance in another, simply because they are serviced by a provider other than a public agency.

The Commission recommends that transport concessions should be available throughout the city to people who satisfy eligibility criteria, and not restricted to those who have access to particular public transport providers.

In response to this recommendation in the draft report, the New South Wales Treasury said it supported it in principle but was concerned with the practical difficulties. In the context of pensioner concessions, the New South Wales Treasury suggested there would need to be a review of present concession arrangements and to establish workable administrative arrangements for handling private operator concession claims (Sub. 311, p. 6).

Problems with administrative arrangements can be overcome. For example, the Queensland Government noted:

Many of the Commission's recommendations regarding the targeting of concessions are currently in place in Queensland. For example, concession fares are set as a fixed proportion of the standard fare and concessions are available on both privately provided and publicly provided bus services. (Sub. 327, pp. 15-16)

A more fundamental obstacle to extending concessions is the financial implications. Indeed, the New South Wales Treasury stated that there is concern about the cost of widening the concession scheme to include privately operated buses (Sub. 311, p. 6).

Nevertheless, the present inequities of only allowing concessions to users in areas where there are only publicly provided operators means that the objective of assisting the transport disadvantaged is only partially being met. It would seem appropriate for the NSW Government to consider the issue of widening concessions to private bus operators as part of its current review of community service obligations.

Some disadvantaged people rely on car travel

In part, subsidisation of urban public transport is based on the premise that the more disadvantaged members of the community are reliant on public transport for their mobility needs. In general, this is not the case. As figure A8.3 shows, the poorer sections of the community spend a substantial amount of money on private transport.

This is particularly evident when we compare the absolute dollar expenditure with other transport modes (see figures A8.1a, A8.2a, A8.3a). At approximately \$1.00 to \$1.50 per week, average weekly expenditure on buses is also quite low in absolute terms for the lowest two income quintiles. This can be contrasted with the \$26.00 to \$48.00 average weekly expenditure (see figure A8.3a) on private motor vehicles (excluding depreciation). The low weekly expenditure

figures for public transport in the expenditure survey is a reflection of the fact that many people do not use public transport. The high weekly expenditure on private motor vehicles highlights not only the user cost of this form of travel but also the extent to which it is used.

Figure A8.3a:
Weekly expenditure on private motor cars

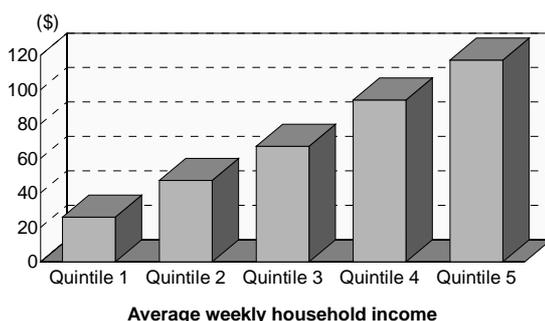
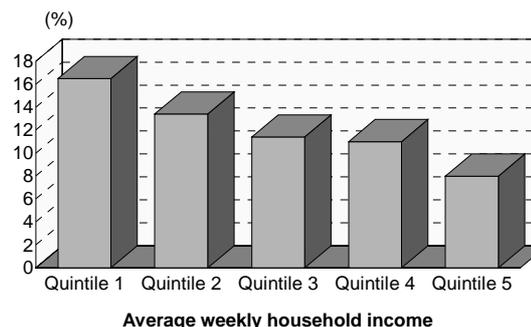


Figure A8.3b:
Percentage of weekly income spent on private motor cars



Figures represent average weekly expenditure by capital city households. Expenditure excludes depreciation. Quintiles represent household income distribution within five groups, where quintile 1 represents the lowest average weekly household income and quintile 5 the highest.

Source: ABS 1990a

It follows that within income groups subsidies for public transport, even where they are targeted, are likely to have very uneven effects, benefiting some with low incomes (because they use public transport) but not others in a similar financial position.

Some disadvantaged people do not use public transport

Subsidies for transport are often thought to benefit those in outer suburbs because they tend to travel more than those in inner suburbs. They are often thought to be the more disadvantaged of city residents.

In practice, however, people living at the fringe tend to place greater reliance on car travel than inner-city residents and so obtain less benefit from subsidies to public transport. Even more significantly, the distribution of less well-off families tends to be spread uniformly through Australian cities and not concentrated geographically (IC 1993).

Data from the STA (South Australia) (Sub. 65) appear to suggest that poorer people are under-represented in profiles of public transport use during the

peaks. The benefits of subsidies accrue to higher income residents in almost all suburbs, because of the importance of public transport in commuting.

This is particularly marked in the case of rail. For example, the Outer-Harbour rail line services relatively low income suburbs. Sixty per cent of passengers on this line during the peak have an income of more than \$20 000 a year (all figures in 1988 dollars). This proportion is high in relation to the Adelaide population as a whole: 33 percent earned more than \$20 000 a year. Moreover, it is greatly disproportionate to the income profile along that transport corridor where only 23 percent earned more than \$20 000 a year.

In general, subsidies for transport also fail to help those less well-off people who travel little or who walk. Mr Hughes observed in relation to Canberra:

... ACTION is really a very clumsy means of redistributing income to the needy and a very clumsy and inequitable way of dealing with the different needs of the needy. Subsidising the use of buses only benefits those who use buses. Those pensioners or unemployed who drive a car or walk or ride a bike or who are bedridden get nothing from the system. It is proper to ask why the ACT Government believes that pensioners who travel by bus to the pictures are more deserving of assistance than pensioners who walk to the newsagent for a newspaper. There are other identifiable groups, such as those in wheelchairs, for which ACTION is irrelevant. And in all of this, welfare assistance is going to many people who do not need it. Well-paid commuters are an obvious example, but the point also applies to many retirees and students. (Sub. 34, p. 74)

Some disadvantaged people are unable to use public transport

The ABS *Handicapped Persons Australia* survey (1981) showed that some 78 per cent of handicapped persons did not use public transport. The ACT Government noted in its submission to the Commonwealth Grants Commission (1993) that social security beneficiaries generated fewer boardings per capita than for the population as a whole. Furthermore, ACROD stated that:

Many severely disabled people are still dependent on specialised transport provided by service organisations. These users do not consider buses and trains an option — even with wheelchair lifts, the time taken and the difficulties of getting to and from bus stops or stations close off public transport as a real option. (Sub. 52, p. 10)

Furthermore, subsidising public transport does not help many of the transport disadvantaged. They do not or cannot use it. This suggests that an examination of other possible means of achieving social goals is warranted. The NSW Community Transport Organisation observed:

In the context of the equity debate it is worth noting that of the \$825 million spent during 1990/91 on public transport subsidies ... \$489 million was spent on general subsidies to pensioners and on Community Service Obligations, \$324 million for the transport of school children and a bare \$12 million targeted towards those who are in

most need of specialised or modified services. We would suggest that there appears to be no focused approach to the distribution of transport subsidies as those who need the subsidies most appear to only receive the benefit of less than 1.5% of the monies available. Unfortunately many people who are dependent on specialised transport services are among the least powerful in our community and the least likely to make a fuss about lack of services. (Sub. 28, pp. 9-10)

Impact of subsidies: summing up

The evidence presented above suggests that much of the existing subsidy to public transport does not accrue to those in the community who might be regarded as in need of assistance, that is, the transport disadvantaged. Non-target groups also benefit from these subsidies even when they have the ability to pay. The Public Transport Users Association stated:

Currently, public transport in Melbourne contributes little to providing mobility for the transport-disadvantaged, despite the sizeable public subsidy (Sub. 96, p. 4).

A8.4 Transport for people with disabilities

People with disabilities are not a homogenous group with like needs. The (WA) Authority for the Intellectually Handicapped and Bureau of Disability Services stated that:

The barriers which prevent these people from accessing suitable transport are varied, some are more difficult than others to address. Some people would benefit from modifications to existing fixed route transport systems which would improve access to services. A percentage of people with disabilities will require door to door transport services. (Sub. 209, p. 1)

And the National Accessible Transport Committee commented:

People with mobility difficulties have a wide range of needs, just as people in the community generally have different needs of the transport system and different capabilities to use the system (Sub. 231, p. 2).

In 1993, it was estimated that over three million people, or about 18 per cent of the Australian population, had a disability. Most of them experience difficulties in mobility (ABS, 1993e).

Only a small proportion of those with disabilities use public transport. The majority either use taxis, private transport or no transport at all. Furthermore, the data suggest that taxi use increases with the degree of disability indicating the importance of flexible, demand-responsive transport for those with severe disabilities.

There are a number of factors, including increasing community awareness of the needs of people with disabilities, which will increase the importance of transport for people with disabilities. Demographic trends resulting in the ageing of the population, and improvements in health care, will see an increased amount of people with disabilities.

These trends are recognised by Governments at all levels. The Federal Government established the National Accessible Transport Committee (NATC) in 1992 to examine ways of improving accessibility to, and availability of, transport for people with disabilities, including less mobile older people.

Discrimination Acts

Increasingly, transport operators are being called upon to modify traditional public transport to enable it to be used by people with disabilities. The (Commonwealth) *Disability Discrimination Act 1992* makes it unlawful to discriminate against a person on the grounds of disability in the provision of goods, services, or facilities, including transport.

This Act also provides for complaints of discriminatory treatment to be heard by the Human Rights and Equal Opportunity Commission, and for service providers to be declared to be acting illegally if people with disabilities are denied access. The Act applies to all service providers: Commonwealth, State and private.

In its assessment, the NATC considers that the Act provides for service providers to draw up action plans, which are not obligatory, but can be used as mitigation in case of a complaint being laid against them. Further, the NATC believes that the Act allows the Attorney-General to introduce mandatory access standards in the future, but suggests this would only be done after lengthy consultation with government, industry and consumers (NATC, Sub. 231, p. 3).

Modifying public transport systems

There has been an increasing trend to modify public transport infrastructure to make it more user friendly to those with disabilities. As well as modification, transport agencies are increasingly requiring that easy-access principles be incorporated into the designs of new purchases. However, as ACROD noted, this may take some time:

The argument on a rights basis states that all forms of transport should immediately be made fully accessible for people with disabilities, and that a radical, comprehensive reform of the public transport system is needed. Those who argue from a more pragmatic and economic basis accept that incremental improvements come over many years, and accept that it may not be possible to create a fully accessible system and that

some alternative system must be provided at a cost to individuals comparable with public transport. (Sub. 52, p. 6)

There are some modifications which are relatively inexpensive, simple to implement and benefit the wider community as well as those with disabilities. ACROD observed:

Modifications such as ramps and lifts rather than steps in stations, low steps and grab-rails in buses, level entry into trains and buses, clear signs and directions, make for speed and ease of boarding, and safety, for everyone, especially those who find old-fashioned trains and buses difficult — the frail aged and people with ambulatory disabilities as well as small children and people with strollers and luggage. Thus in the long term such modifications would be cost effective and beneficial to all. (Sub. 52, p. 7)

Existing buses can be modified, at a cost, to take into account difficulties of entry and exit by disadvantaged groups such as the elderly and those with disabilities. South Australia and Tasmania are introducing low-floor buses which should help. South Australia is also introducing 'kneeling' buses to make the initial step into buses easier for the elderly and people with disabilities.

The ACT Transport Action Group gave examples of how to improve access to public transport:

- improvements in signs at bus interchanges and railway stations - for example, timetables at eye level;
- hearing induction loops in ticket and enquiry offices at major interchanges and railway stations;
- better public relations to improve consultation with consumers;
- improved training to enable operating staff to deal more effectively with passengers who have special needs and to overcome prejudice;
- training for certain groups of potential users in accessing the system and overcoming fear of being taken to wrong destinations and becoming lost;
- buses stopping on request between official stops, to allow elderly or disabled passengers to alight near homes or shops; [and]
- utilisation of special purpose buses, when they are not in use, to supplement regular bus routes. (Sub. 145, p. 3)

Similarly, the Travellers Aid Support Centre suggested that all new public transport vehicles should be accessible to people with disabilities, as should ticketing outlets, stops and stations, and convenience areas; and transport staff and private operators should be provided with ongoing disability awareness training (Sub. 277, p. 3).

In recognition of the difficulties people with disabilities face in accessing transport, many transport agencies have introduced initiatives to make their services more user friendly. For example, an 'Easy Access Programme' is being implemented in New South Wales which, according to CityRail:

...aims to improve the links between transport infrastructure and the community by reducing the barriers which inhibit usage of the State Rail system. Key Stations on the CityRail network will be fully "Easy Access" stations with lifts, handrails, ramps etc. whilst all present and future upgrading of CityRail stations will incorporate basic Easy Access features such as ramps. (Sub. 256, p. 3)

Other participants pointed to the potentially high costs associated with modifying conventional vehicles. For example, the NSW Bus and Coach Association argued against a policy of requiring all route bus operations to be accessible to people in wheelchairs:

Who will take over the financial responsibility for operating the private bus system, since overseas evidence suggests that between \$100 million and \$200 million per annum will be required in NSW alone to operate the private bus system under such a scheme. This is due to the increased capital cost and consequent depreciation and finance charges, the increased time cost per journey undertaken (with the consequent increase in the number of vehicles and drivers required), and the substantial decrease in patronage and revenue resulting from the increased journey times and the lack of reliability of buses fitted with wheelchair lifts. (Sub. 97, p. 18)

The Association also cited United States experience to dispute the claim that modifications to public transport benefited the wider community:

By modifying buses to meet wheelchair accessibility, the journey time in US cities slowed considerably. In addition reliability was adversely affected, due to cases being reported of 33% of the bus fleet being out of action owing to wheelchair lifts being damaged. This resulted in able-bodied passengers deserting US urban bus transit for the automobile, leaving mainstream bus transit as the preserve of the disabled and of welfare recipients. Consequently, the patronage and revenue base became so low that US urban bus transit has become amongst the most heavily-funded in the world, with federal funding, state funding and local city funding all being supplied. (Sub. 97, p. 17)

The question of providing accessible transport clearly involves some difficult trade-offs. For example, the ACT Government noted that ACTION has undertaken a number of steps in recent years to improve accessibility for people with disabilities (for example, specially designated seating and trialing of special services) but had decided not to provide wheelchair access:

... at a cost of \$50 000 per bus, the total capital cost of re-equipping the ACTION fleet would be around \$22 million, with an additional recurrent cost of \$0.5 million per annum for maintenance costs (Sub. 167, p. 28).

In recognition of the trade-offs involved between providing a universally accessible transport service and cost, ACROD proposed the ‘equal opportunity’ principle:

In any locality, people with disabilities should have access to at least one form of transport, at a comparable cost and convenience to the transport used by the general population ... For some people with disabilities, better access to private vehicles may be the solution. For others, only the public system can provide for their transport needs. (Sub. 52, p. 9)

Existing modes of public transport can be modified to be more user-friendly for people with disabilities. However, in many cases, these traditional systems of public transport are unsuitable for people with disabilities. One solution lies outside the conventional public transport system in demand-responsive modes such as community transport and taxis.

Taxi subsidy schemes and multi-purpose taxis

The Australian taxi industry is involved in providing transport to people with disabilities. The industry claims that (at least in New South Wales) most people with severe disabilities are completely dependent on taxi services (Sub. 94, p. 10).

These taxi services include supplying and adapting vehicles to carry wheelchairs and specialised services to meet the demands of school children who suffer various disabilities. The various state and territory governments provide differing degrees of subsidies to both people with disabilities and the taxi industry for these services.

The taxi industry considers its services to be more economical and effective than Commonwealth-funded alternatives such as bus services funded under Home and Community Care (HACC). This view is shared by the NSW Bus and Coach Association which argues that transport for those with serious disabilities is better achieved through the taxi system rather than bus or route modification. The Association cites United States experience where such modifications have had profound effects on general patronage and hence the revenue base with the long-run effect of extensive subsidies being required from governments.

The Commission is making a number of recommendations with the objectives of lowering the price and increasing the availability of taxi transport (see chapter B4). These changes should be of benefit to people with disabilities. Industry subsidies to ensure an adequate supply of suitably modified cabs (for example, the M50) would continue as present.

The Council on the Ageing endorsed the Commission's approach in the draft report, stating:

COTA supports more competition in the taxi industry ... In particular, COTA sees more competition in the industry will lead to greater price competition (leading to lower prices), market segmentation, innovation and higher standards of cleanliness and punctuality. Other advantages hopefully would include more consumer information and more choice. (Sub. 301, p. 1)

A number of participants expressed concern at the lack of reciprocity in taxi subsidy schemes between most states and territories which effectively denies people with severe disabilities access to this scheme when travelling interstate. **The Commission recommends that this issue be addressed by the Disability Taskforce. Reciprocity could be achieved by mutual agreement between the States and Territories as has already occurred between Victoria and South Australia.**

Policies towards private vehicles

The motorised vehicle most widely used by the transport disadvantaged is the private motor car. This is due to a variety of factors including flexibility and convenience. Government policies towards private vehicles are likely to have a greater immediate impact on the transport disadvantaged than those directed towards public transport.

Motor vehicle affordability has a great impact on those on low incomes. Policy measures such as tariffs on new and used cars which increase the purchase price or running costs of private vehicles are regressive in their impact.

Import duties and regulations at present make it very difficult and costly for people with disabilities to import specially modified vehicles that are not made in Australia (see box A8.2).

Some participants such as Mr and Mrs O'Brien (Sub. 195) expressed the concern that, whilst people with disabilities may receive exemptions, their immediate families and carers may not. This may create hardship for families and carers and ultimately those with severe disabilities.

The Commission understands that the Disability Taskforce is examining these issues. The Commission recommends that every effort be made to eliminate quickly all unnecessary restrictions and regulations on importing modified vehicles into Australia.

In addition, there are a number of relatively inexpensive policy options which could be directed to those in private cars who have disabilities. These include

audible signals at traffic lights, the provision and policing of parking spaces for those with disabilities and registration fee concessions.

Box A8.2: What price mobility?

At the initial public hearings, Mr Byrne described the process in attempting to import a specially modified vehicle from the United States as:

Quite a minefield. I started the process about 5½ years ago and I have only just last Thursday taken delivery of my vehicle. My first obstacle was the Road and Traffic Authority in New South Wales. They wouldn't allow someone to stay in a wheelchair and drive for a start. They saw it unsafe even though it was happening in America for quite a number of years.

So I presented them with evidence and battled and squirmed ... and it took me about 6 months to get through to them. Then the import duties on the vehicle — they were going to charge me 42 per cent ... and I saw that as being unfair because there was no vehicle here in Australia like it ...

Eventually it was classified under the Florence Agreement ... as an appliance or an aid for someone with a disability rather than a motor vehicle ... which saved me about \$25,000.

... I started to proceed to purchase the vehicle and the Federal Office of Road Safety said that I couldn't have the vehicle unless I went and lived in America for 3 months — owned and operated the vehicle — and then brought it in as a personal import. I said to do that I would have to lose my job and they said, "Sorry, that's the regulation".

Now, it was about that point that I blew my stack and went to the press and an article appeared in the Sunday paper and 2 o'clock on the Monday the minister changed his mind and allowed me to have the vehicle-waived the 3 months' provision, and then it took another 15 months to get it out of America.

... I got it in eventually import duty free, sales tax free and so on, and through the RTA, but every one of those authorities has given one-off approval — not for general use, if you like.

I see that as something that needs to be broken down. If there is nothing here in Australia, certainly the benefits this vehicle has offered me in being able to be spontaneous about the come and go — get out of the van, have a break when I'm travelling or just move around recreationally — just huge ... To deny people that just for the mere sake of a regulation is nonsense. (Initial hearing transcript, pp. 1141-1142)

After the hearing, the Commissioners were pleased to have the opportunity to inspect the vehicle.

A8.5 Longer-term reform

A further step which the Commission considers should be examined by governments is to redirect subsidies currently paid to transport providers into the hands of beneficiaries themselves through direct cash payments or vouchers.

The advantages of user-based subsidies include:

- recipients would be able to spend the payments on methods of travel and times of travel of their own choosing, for example, bus fares or motor vehicle registration expenses;
- target groups receiving cash payments from the government could choose to apply the subsidy to interaction in ways that did not involve their own physical transport (for example, through use of the telephone); and
- the choices of recipients themselves would provide signals to providers about which services to provide.

Before such policies could be introduced, however, a number of obstacles would have to be addressed, including:

- the costs of administration of payments to individuals would likely be more expensive than current arrangements for subsidies to providers. If transfers are to be restricted to those in genuine need, however, it may be possible to develop cooperative arrangements between Commonwealth, State and Territory Governments to integrate any arrangements with the social welfare system;
- it would be essential to ensure that the assistance reached the intended beneficiaries (for example, children going to school) and was not used for other purposes; and
- a shift in the form of subsidy to an individual basis rather than per trip, as at present, may reduce the benefit received by some people who are currently able to make intensive use of the concession.

The Commission received varied responses to the above ideas presented in the draft report. For example, CityRail concurred that user subsidies, as opposed to provider subsidies, would be more efficient in meeting equity objectives:

Measures to target disadvantaged groups are better directed to them as individuals than to the areas where they are thought to live (Sub. 256, p. 3).

Others saw problems with this approach, particularly in its implementation. For example, the Office of Transport Policy and Planning (SA) commented that, while it has had success in the operation of vouchers for Access Cabs in the Adelaide area, providing transport for those with physical disabilities, there would be administrative difficulties in extending this to the entire STA network:

To date, direct cash payments have not been favoured due to the difficulty of ensuring that intended beneficiaries receive the assistance, a factor also recognised by the Commission in its Draft Report (Sub. 224, p. 13).

Other participants saw other reasons for not extending subsidies to other modes. The ACTU/Public Transport Unions stated that:

We are not in favour of any move that would allow transport concessions to be used on modes other than mass transit ... Such a move would take away the add-on social and environmental benefits from avoided costs of road use that stem from concessions granted primarily on equity grounds. (Sub. 271, p. 35)

The problem with that approach is that users are limited to mass transit, rather being allowed to choose the mode(s) which best suits their transport needs. In addition, other objectives such as achieving better environmental outcomes are better targeted directly (see chapter A10). Restricting transport concessions to bus or rail is both an inefficient and inequitable way of addressing the problem.

Some participants also pointed out the unintended side effects of user-side subsidies, for example, Professor Neutze observed:

Greater targeting of assistance towards the cost of using public transport (and perhaps road and registration fees), along with income tested assistance of other kinds can easily result in marginal effective rates of income tax that are higher than those on high incomes and great enough to be a severe disincentive to increased earnings (Sub. 200, p. 3).

A8.6 Conclusion

Untargeted subsidisation of traditional public transport is not an efficient way of helping all those in need. Despite large public transport deficits, many in the community remain transport disadvantaged. Too often the focus is on helping people through the traditional public transport system rather than implementing innovative transport solutions. And too often transport subsidies work to the advantage of those in the community who are comparatively affluent.

The first steps towards improving assistance to the disadvantaged are closely associated with corporatisation (see chapter A5). Target groups should be identified and explicit subsidies for their travel 'purchased' by the government through CSO payments. Similarly, non-commercial routes which the government wishes to provide should be explicitly funded.

There is scope to introduce some competition into the supply of subsidised services. For example, contracts could be let to supply after-hour services, or services to particular locations which would be open to public buses, private buses, taxis and rail services. This process would replace many mode-specific CSO payments. For example, taxis, which will be especially

competitive after the price-reducing measures recommended in chapter B4, may win contracts for after-hour services which have low patronage.

A switch to user-based subsidies involves some complex considerations. In view of the priority for more immediate reform, the Commission has not undertaken a full evaluation of its potential. However, the Commission considers that the use of vouchers and direct payments to individuals deserve further consideration, once existing methods of subsidy have been reformed in the ways recommended earlier in this chapter.

A9 THE USE OF ROADS

Most of Australia's road transport, essential for the economic functioning of the nation as well as for social interaction and personal mobility, takes place in urban areas. Given its prominent role in the movement of both goods and people, it is important that road transport be operated efficiently so as to maximise the welfare of the community.

As congestion increases, so do costs, particularly as traffic delays slow down the movement of freight and commercial traffic. Congestion in Australian cities is amenable to road pricing solutions, using the most recent advances in electronic tolling technology.

A9.1 Introduction

Road-based transport accounts for virtually all passenger travel, freight movements and business and commercial travel in urban areas (see chapter A2). Urban roads carry a variety of vehicles including cars, trucks, buses, motorcycles and bicycles, and are linked with a network of crossings and footpaths for pedestrians. Road transport makes a valuable contribution to the economy and more generally to the welfare of the community. It also has some adverse impacts (see chapter A10).

While discussion often focuses on whether there is enough or too much money being spent on roads, and whether we need more or fewer roads, this chapter concentrates on how we can make the best use of the urban roads we currently have. Supply-side issues relating to investment policies are addressed in chapter A7. As pointed out by Austroads:

Providing more or better roads is not enough. It is the way in which roads are used for the movement of freight and people that gives them value. This serves the economic and social needs of the community. (Austroads 1993, p. 5)

Efficient road use is important for all classes of users — car drivers and their passengers, motor cycles, buses, commercial traffic and those travelling on business. It is particularly significant where time savings are most valuable, for example, for urban freight, commercial and business traffic. These users are also of major and growing importance, both in terms of traffic volume and economic significance (see chapter A2).

As commented in a recent Bureau of Transport and Communications Economics (BTCE) publication:

Making the most economical use of available road capacity requires that road users are confronted with the social costs of using the road network. In the short run this means that charges for each vehicle type should reflect related road damage costs, and during peak demand periods the costs of traffic congestion. (Docwra, 1993, p. 9)

Presently, motorists are charged vehicle registration fees and fuel taxes. Hence, motorists are charged for the right to use a vehicle (an access charge to the road system as a whole), and for the consumption of fuel, but, with the exception of a few tollways, not for the use of particular roads. The absence of such a charging system which is facility or area specific, and which varies with the time of day, is seen as one reason for the growth of traffic congestion in Australia's major cities.

A9.2 Congestion

Nature of the problem

Congestion of roads occurs when there is an impediment to the flow of traffic, at a given time and location, when the use of the roads by some motorists impedes the progress of others. Congestion is an external cost of road use because it is imposed by road users on other road users, but its consequences are not fully reflected in the decisions of those who cause it. Congestion costs, however, are internalised amongst road users in aggregate. Therefore, costs of congestion should be distinguished from other external costs associated with the use of the road, such as road wear, pollution, some accidents, particularly to pedestrians, and the cost of policing traffic. While congestion may add to some of these costs, the main components of congestion costs are the loss of time and the increase in vehicle operating costs caused by additional traffic.

Traffic congestion is a serious problem in many large cities such as Tokyo, London, New York and Los Angeles. However, congestion is not perceived as a significant problem in most Australian cities. A recent Australian Automobile Association survey (Sub. 140) showed that congestion was ranked number ten out of eleven problems perceived with motoring. In the same vein, the Metropolitan Transport Trust referred to Tasmania's 'relatively low traffic congestion' (Sub. 148, p.18).

There is little doubt, however, that at certain times in some Australian cities considerable delays occur that impose costs on road users. The New South

Wales Department of Transport reported that ‘the total cost of congestion in Sydney has been estimated to be at least \$2 billion’ (Sub. 178, p.16).

The City of Melbourne said:

Traffic congestion in Melbourne remains a serious problem within the inner area where the provision of more road space, with the exception of some bypass links, is not a viable option (Sub. 4, p. 6).

Similarly, the Brisbane City Council commented:

Congestion occurs throughout Brisbane but within Brisbane City it is more pronounced around the CBD ... Demand typically exceeds the road system’s capacity in peak periods. In the morning the demand is inbound so the queues are on the suburban side of the ring of maximum load points. In the afternoon the demand is outbound so the queues are from the CBD. (Sub. 173, pp. 57-58)

And the NRMA described the situation in Sydney:

In many areas of Sydney, the peak period congestion extends over several hours ...[and]... contrary to popular perception, traffic congestion occurs across wide areas of Sydney, and not just on those routes approaching the CBD and/or parallel to public transport (Sub. 246, p. 4).

The extent of congestion problems in Australian cities varies widely. Even in cities which are relatively uncongested now, there is some concern about how increasing car travel is to be accommodated without significant congestion in the future. The Western Australian Government stated that ‘congestion is not a serious problem for Perth now, but is increasing and will be so by 2021’ (Sub. 170, p. 58).

Costs of congestion

Since congestion involves impediments to the flow of traffic and therefore increased travel times, the costs of congestion — which, in aggregate, have been estimated at around \$4 billion a year in Sydney and Melbourne — will depend on the value of the losses in time and operating costs that are caused by the delays.

Whether a trip is undertaken for business or personal reasons, most people wish to minimise the amount of time spent making it. A proxy for the value of time can be broadly derived from a person’s wage rate, since the wage rate represents the opportunity cost of spending time travelling rather than working. Estimates of travel time values vary fairly consistently between trip purposes. They appear to be higher for business travel (travel as part of work) than for commuter travel, and higher for commuter travel than for non-work related travel (see appendix B).

Business travellers and those moving freight are likely to value time lost at an amount very close to the wage rate since that is the amount paid to their drivers for the time in question. Freight forwarders in particular find congestion expensive because a certain amount of freight is necessarily moved in the peak (see table A9.1).

Table A9.1: Commercial vehicles on Sydney's main roads^a

	7-9 am	9am-3pm	3-6pm
	<i>(proportion of total volume of traffic, %)</i>		
All commercial vehicles ^b	19	27	16
Heavy vehicles alone	6	8	6

a Average from ten sites surveyed in November 1990

b Taxis, light and heavy commercial vehicles

Source: New South Wales RTA 1991, p. 63

The most recent estimate of the costs of congestion in Melbourne has been carried out by the Roads Corporation of Victoria (Vicroads) in conjunction with the Victorian Office of the Environment. This report defined congestion as:

The difference in resource costs between the road network operating under current traffic conditions, and the road network operating under ideal conditions where delays have been eliminated and traffic is able to proceed at the maximum safe speed. (Vicroads 1992, p.7)

The resource costs comprise vehicle operating costs and, more importantly, travel time costs, which vary substantially according to the purpose of the trip (see Australian Road Research Board (ARRB) 1992). For the purposes of the Vicroads study, based on the ARRB's valuation of travel time, business travellers engaged in business (as opposed to those commuting) have a travel time value six times higher than private travellers.

These different values of time are important considerations for possible changes to the way in which road space is allocated, particularly during peak travel times.

Vicroads estimates that the aggregate travel time costs of congestion in Melbourne's CBD are approximately \$740 000 a day. Operating costs are approximately \$110 000 a day. Together these costs in the CBD represent 22 per cent of the total daily metropolitan congestion costs.

For Melbourne as a whole (including its surrounding suburbs), total congestion costs — as measured using 1991 data — are estimated to be around \$7 million a day or around \$2 billion a year. This suggests **there are large economic gains to be made from reducing congestion. Around 70 per cent of this cost is borne by the business sector** (see table A9.2).

Table A9.2: **Melbourne's daily congestion costs**

<i>Cost Item</i>	<i>Market</i>	<i>Congestion Cost</i>	
		<i>(\$ million)</i>	<i>(%)</i>
Vehicle Operating Costs	Private	0.3	5
	Business	0.2	3
	Sub-total	0.5	7
Travel Times	Private	1.6	24
	Business	4.6	69
	Sub-total	6.3	93
Total	Private	1.9	29
	Business	4.8	71
	Total	6.8	100

Source: Vicroads 1992

In a similar study, the NSW Roads and Traffic Authority (RTA) estimates the annual costs of congestion in Sydney at \$2 billion (Commeignes 1992).

Alternatively, by updating a previous study by Dodgson (1986), which estimated marginal costs of congestion per vehicle kilometre for Melbourne, Sydney, Brisbane and Adelaide, the Australian Automobile Association (AAA) has calculated a significantly lower measure of congestion costs.

If these figures [Dodgson's] are grossed up by multiplying them by the estimated urban travel figures in the corresponding four cities, we estimate that marginal congestion costs are around \$500 million for these four cities (Sub. 279, p. 4).

While further work is required to better estimate the costs of congestion, what is clear is that congestion costs are significant¹ and are increasing.

A9.3 Better use of roads

As road users do not take the costs they impose on others fully into account, roads are used by many people who are prepared to suffer traffic jams because they have more time to spare and are inconvenienced the least by it (that is, they place a relatively low value on the use of the road).

Because these costs are not related to their time on the roads, road use will be rationed by queuing — only those who are prepared to wait will be able to use the road. This system favours users whose time is not so valuable; those who are inconvenienced the least by traffic congestion. For instance, those with time on their hands are more likely to tolerate traffic jams than those whose income and livelihood depend on the efficient use of their time. In many cases the costs of deferral or rescheduling of trips by those actually on the roads may be low,

while those for whom delays are very costly may be forced to more expensive alternatives, such as relocation of residential or business premises.

Policy measures to reduce congestion aim to ration road space more efficiently. Those who consequently cannot use the road at the time of greatest demand are obliged to reschedule their journeys to less congested times, use less congested routes, use alternative modes of transport or use non-transport methods of communication.

It is important that the people who change their behaviour in this way are those who can do so at least cost. Pricing the road space is an efficient method of achieving that result: those prepared to pay the charge will be those who most value the road space.

It will, however, rarely be desirable to eliminate congestion altogether. Indeed on roads that are currently congested, the very high toll required to create a completely free flow of traffic would almost certainly eliminate some users who would value use of the road highly and who could be accommodated with only minor inconvenience to those already using the road.

This means that aggregate measures of the cost of congestion need to be interpreted carefully. Often they are based — as in the Vicroads study referred to above — on the difference between current time delays and no time delays at all. The benefits from introducing optimal management of congestion will be somewhat less than this because they will not completely eliminate congestion.

The need for measures to deal with congestion has been well recognised in several forums, including the final report by the Ecologically Sustainable Development (ESD) Transport Working Group (1991b) which recommended that ‘the application of road pricing mechanisms be evaluated by Governments as an alternative to the provision of additional road facilities serving business districts and employment centres...’ (recommendation 20).

Existing policy measures

There are various measures available, some of which are currently in use, to deal with the growing problems associated with the increasing levels of congestion in Australia’s cities. They include demand management measures such as traffic calming, subsidising public transport, expanding road capacity, the use of express or high occupancy vehicle (HOV) lanes, parking restrictions, as well as pricing measures such as parking fees, fuel taxes and the actual pricing of roads.

Traffic management

Traffic management measures, particularly the use of speed limits, the computerisation of traffic light cycles, the creation of right-hand turning lanes, allowing left-hand turning vehicles to turn against red lights if the traffic is clear, the creation of pedestrian zones, and traffic calming techniques such as speed humps and chicanes, all have a valuable role to play in assisting better traffic flows in urban areas.

The merits of each management tool need to be assessed at the local level, but ideally their implementation should be the outcome of careful analysis of costs and benefits, as well as collaboration between local government authorities.

Company provided vehicles and parking

A number of participants considered that the Commission's draft report had neglected the issue of company provision of vehicles and motoring related services to employees. The ACTU/Public Transport Unions said:

... the Commission has ignored the major subsidy to car travel given by the provision of company cars, many of which are used for commuting to work and are parked free in costly multi-storey office car parks (Sub. 271, p. 8).

In a similar vein, Mr Waters stated that:

One of the ways in which transport users do not face the full economic costs of their travel is in the widespread practice, in both the private and public sectors, of constructing executive remuneration packages which effectively subsidise the use of private cars.

In the case of the Federal Government Senior Executive Service, this goes as far as offering effectively free use (including petrol), with no tax liability for the individual and no alternative such as public transport fares or the salary equivalent. (Sub. 273, p. 2)

The provision of vehicles by employers can lead observers to conclude that employees travel and park at significantly reduced cost relative to the rest of the community.

Such conclusions often fail to allow, however, for the impact of the Fringe Benefits Tax (FBT) which applies to employer subsidisation of motoring costs.

Fringe Benefits Tax applies (among other things) to the provision of vehicles and other motoring-related benefits. Since July 1993 the employer provision of free parking for employees has also been included. The FBT applies where the vehicle is used to commute, and the vehicle is parked for at least four hours a day. The valuation of the parking space is based on the lowest cost, all day commercial parking rate within one kilometre of the space provided.

Even after paying FBT, company provision of cars can be advantageous to employees where the provider can obtain the vehicles at lower costs than employees acting on their own behalf. A clear example is the remission of sales tax available to government purchasers which the Commission would like to see eliminated.

Virtually all employees in the private sector are given options for choosing to include a vehicle, cash, or some combination, in their remuneration packages. This allows them to reduce, without penalty, the extent to which payments for personal motor vehicles form part of their remuneration, so allowing them to choose to rely to a greater extent on public or other forms of transport. This option should also be available to public sector employees.

Express lanes

The use of express or high occupancy vehicle (HOV) lanes as a mechanism for encouraging increased occupancy rates of vehicles has long been a measure used in North America. In Australia, Sydney and Melbourne have for some years used HOV lanes (called transit lanes). Such lanes are generally open to buses, van pools and cars with a certain number of occupants (a minimum of 2 or 3). Other cities have extensive bus-only lanes.

Sydney has seven bus lane projects, for the exclusive use of buses and taxis, close to and within the CBD. The effectiveness of bus lanes on the harbour crossing was spelt out in the Sydney Harbour Tunnel Traffic Impact Study which stated:

In the two hour am peak period, 260 buses transport about 13 000 persons into the city and about 20 000 other vehicles transport about 28 000 persons into and around the city. Thus, on a person basis, buses can justify their own lane. (New South Wales RTA, 1989)

The usefulness or otherwise of HOV lanes is very much a matter for local authorities in each urban area to decide. The extent to which HOV lanes encourage higher occupancy rates (data needs to be compiled to assess the degree to which this occurs), will be affected by the level of congestion on the roads concerned. In some cases, the creation of HOV lanes to force traffic off one lane and onto others may increase congestion, especially if the HOV lane is hardly used. The success of HOV lanes will depend crucially on accurate data before implementation and continuous monitoring of their operation.

HOV lanes would seem to be appropriate in conditions where traffic congestion exists, the potential for ride sharing is high, public transport use is high, and where the road space is wide enough to incorporate such lanes.

Subsidies for public transport

Some participants argued that current subsidies for public transport were fulfilling the role that would ideally be undertaken by road pricing. CityRail said:

State Rail is seeking greater awareness that CSOs paid to CityRail for suburban services are not a handout but a second-best pricing solution to undercharging for suburban roads ... If it is not feasible for Government to charge the true cost of road usage it must continue providing a similar financial support to rail users as a second best alternative to put them on an equal footing with road users. (Sub. 46, p. 6)

Subsidies for public transport have some impact in attracting motorists out of their cars. But they also encourage travellers who would not otherwise have travelled at all. And subsidies for one mode of public transport have significant impacts in attracting passengers from other public transport modes. Where the subsidies are at such a level that these passengers are effectively not meeting the cost of their travel, net costs to society can eventuate. Moreover, raising the revenue required for subsidies imposes an economic cost (net burden) over and above the value of the revenue raised.

Some participants argued that congestion could be reduced if service quality was improved and additional commuters attracted. Mr John Legge argued that with a capital injection (amount unspecified) into Melbourne's urban rail system:

It is possible, using proven technology (which can be fitted to the present trains at a moderate cost) to cut 33% off transit times and improve service frequencies from four to six per hour with the same number of trains, a reduced number of employees and a 40% cut in the power bill...If these technical improvements were brought in at the same time as road user pricing and higher peak period fares the public subsidy to the public transport system could be significantly reduced. (Sub. 257, p. 3)

The Commission supports moves to improve public transport service levels. As always, however, such investments should be subject to appropriate cost benefit analysis (see chapter A7).

Levies on fuel

All petrol and diesel sold in Australia is subject to a Commonwealth excise duty of 29.6 cents a litre. In addition, all states and territories except Queensland levy franchise fees on petrol and diesel, as is shown in table A9.3.

In most states a single fee applies, except in New South Wales and South Australia where rates vary within their state boundaries.

Table A9.3: **State and Territory Government fuel franchise fees**

<i>State and Territory</i>	<i>Super leaded petrol</i>	<i>Regular unleaded petrol</i>	<i>Automotive distillate</i>
		<i>(cents per litre)</i>	
NSW (Sydney) ^a	7.0	7.0	7.1
Vic.	8.4	8.4	10.3
Qld	nil	nil	nil
WA	5.7	5.7	7.4
SA (Adelaide) ^a	9.1	9.0	10.2
Tas	6.1	6.1	6.1
NT	6.0	6.0	6.0
ACT	7.0	7.0	7.1

a Variable rates.

Source: Prices Surveillance Authority

In the absence of direct road user charging through the widespread use of tolls, the use of differential franchise fees in specific locations (that is, higher fees in capital cities) opens up the possibility of using such fees as a second-best option for road user charging.

The main disadvantage of such a mechanism is that it is not capable of tackling congestion in particular parts of a city, and is not time specific. An advantage of using levies on fuel is that no new mechanism needs to be established to collect them and it is a good way of dealing with fuel related externalities, such as lead emissions.

Parking taxes and controls

One option for dealing with congestion (or as a complementary instrument of demand management) is the use of parking charges and controls.

Limitations on parking may take the form of restrictions on the number of parking places that may be provided in a jurisdiction, restrictions on the length of time for on-street parking, or taxes on the parking places that are provided.

As congestion has worsened in some Australian cities, quantitative restrictions on parking have been imposed through land use controls on the amount of land that may be used for parking and the number of spaces that may be built.

The major limitation of tackling congestion through parking policies, using quantitative restrictions or the imposition of penalties, is that they have no effect on through traffic, which in many areas makes a large contribution to congestion. Through traffic is a particular problem where there are no ring roads around cities, thus forcing traffic to travel through the centre in order to travel from one side to the other. Parking restrictions or charges will only impact on the traffic whose destination is the area under consideration.

Physical limits on parking spaces are also difficult to target at congestion which, by its nature, only occurs at particular times of day. Controls on time limits for parking are more flexible. Taxation or additional state charging measures are the most flexible of all, since levies can be constructed in such a way that all providers of spaces face costs which vary through the day. However, the more rates are differentiated, the more compliance and administrative costs increase.

A simpler ad valorem tax of say, a flat 20 per cent, although not ideal, would be the easiest and most cost efficient way of taxing parking. Alternatively, the NSW Government has recently imposed a flat tax of \$200 on each parking space in the Sydney CBD. The parking space levy is paid by property owners, and passed on to motorists through higher parking charges.

The need for a city-wide approach to parking restrictions and other measures dealing with congestion was argued by the City of Melbourne:

...parking restrictions should be introduced on a city-wide basis. The City of Melbourne's experience has indicated that this is a major requirement for parking controls to be effective. This is relevant to road pricing as well. (Sub. 259, p. 4)

The limitations of parking restrictions, however, were recognised by Professor Neutze who argued that 'Parking charges are very poor substitutes for congestion charges' (Sub. 200, p. 3).

Many of the above measures have been used to tackle congestion in the past. They will continue to do so. However as congestion increases, more targetted measures are becoming appropriate including electronic road pricing (ERP).

Road pricing

Tolls are being imposed on some new roads and other motor vehicle infrastructure provided in urban areas. This is especially true of infrastructure which has been built with some component of private capital. Examples include the M4 and M5 motorways and the Harbour Tunnel in Sydney, and the Logan Motorway and Gateway Bridge in Queensland (see table A9.4).

It should be recognised, however, that the existing tolls rarely fulfil the requirements of congestion pricing. As the NRMA pointed out:

... the problem with most non-electronic toll facilities is that the charge is constant regardless of actual congestion levels — in the case of Sydney's tollways road users pay the same amount at 0800 on weekdays as 2400 on Sunday and yet the traffic levels are very different indeed! (Sub. 246, p. 5)

In many cases the tolls have been imposed more with an eye to revenue than to pricing the current use of the infrastructure efficiently. Indeed, it may be that

pricing has to some extent frustrated efficient use, with many facilities, such as the Westgate bridge in Melbourne, uncongested in the early years of their use.

Even so, pricing of urban arterial roads is an important step towards a more efficient use of the urban road network. As demand grows, it is inevitable that these facilities will become congested. When this happens it is preferable that pricing mechanisms be in place and accepted by motorists. Furthermore, existing tolls on congested urban roads, such as the Sydney harbour crossings, should use peak pricing.

Table A9.4: Tolls on Australian roads and bridges^a

<i>Jurisdiction</i>	<i>Facility</i>	<i>Toll</i>
New South Wales	Sydney Harbour Bridge	\$2.00
	Sydney Harbour Tunnel	\$2.00
	M4 Motorway	\$1.50
	M5 Motorway	\$2.00
	F6 Freeway	\$0.60
Queensland	Gateway Bridge	\$2.20
	Sunshine Motorway	\$1.20
	Logan Motorway ^b	\$0.60

a Rates are for cars only.

b Rate applies to the first phase of the tollway only.

If tolls could be extended to existing and new arterials, it may be possible in some cities to create a system of charging which effectively rations access to the most congested areas. By charging for both old and new access roads, it should be possible to achieve a more rapid flow of traffic in the city as a whole.

Such a system may achieve a pricing cordon around highly congested areas. In Bergen, Norway, there is a 'toll ring' around the CBD, with tolls being charged on all entrance roads. Although designed to raise revenue for road improvements, its effect has been to reduce congestion (see appendix H).

The Area Licensing Scheme (ALS) in Singapore is generally considered to be the most successful attempt at using price to ration entry to a congested city at certain times. Drivers wishing to enter the CBD during the morning and afternoon peak periods are required to purchase a permit, which must be displayed on the windscreen. The result has been a large reduction in congestion and an improvement in air quality. To overcome the inherent rigidities of the ALS and to reduce its enforcement costs, the Singapore Government is planning to replace the ALS with an electronic road pricing (ERP) system.

Electronic tolls can be flexibly applied (with significant time of day variations) to all road users, including through traffic. They can also be consistently

applied, to the extent that they are confined to arterial roads coming under the direct control of the state government. Hutchinson and Gargett said:

Charging for road use (congestion pricing) is likely to be the most effective approach to managing levels of private vehicle use because it still allows users a choice and it can be targeted at certain types of traffic, at specific locations and at certain times of the day or week (Sub. 56. p. 14).

Electronic technologies for toll collection are technically feasible and are rapidly overtaking coin-based toll booths both here and in other countries (see table A9.5).

Table A9.5: Current and planned electronic road pricing schemes

<i>City</i>	<i>System</i>	<i>Technology</i>
Oslo (Norway)	Toll ring	AVI ^a /manual
Trondheim (Norway)	Toll ring	AVI/manual
Stockholm (Sweden)	Electronic cordon	AVI/manual
Goteborg (Sweden)	Electronic cordon	AVI/manual
Orange County (USA)	Private toll roads	AVI/manual
The Randstad (Netherlands)	Comprehensive ERP ^b	ENP ^c
Singapore	Zonal ERP	Smartcard
Hong Kong	Zonal ERP	Smartcard
Cambridge (UK)	Congestion metering (based on vehicle speed)	Smartcard

a Automatic Vehicle Identification

b Electronic Road Pricing

c Electronic Number Plate

An experiment in Hong Kong with electronic road pricing between 1983 and 1985 demonstrated that a system based on the time of day and location of travel was both technically feasible and effective in reducing congestion. Compared with other attempts at levying and collecting tolls, via toll gates, the costs of implementation were fairly low. According to Austroads (1991), the initial cost of the completed Hong Kong scheme would have been about \$US30 million, and the annual cost about \$US6 million, with revenue estimates ranging from \$US20 million to \$US70 million a year. The scheme was also technically effective. Despite these results the scheme was abandoned when it failed to meet community acceptance, partly due to concerns about invasion of privacy.

No longer are there technological obstacles to the use of electronic road pricing. Although the development and use of electronic road pricing is more advanced overseas, the first steps toward its introduction in Australia are currently being taken on the Sydney Harbour Bridge — see box A9.1.

Box A9.1 Electronic toll collection on Sydney Harbour Bridge

The Road Traffic Authority of New South Wales is currently in the process of testing an electronic toll collection (ETC) system on the Sydney Harbour Bridge. The system comprises:

- remotely sensed radio frequency tags;
- toll booth mounted tag readers;
- a toll booth computer for local tag processing;
- an associated network link; and
- a violation enforcement system incorporating video digitising technology.

For the trial, three toll booths on the southern toll plaza of the Sydney Harbour Bridge have been equipped for ETC. Only two of the booths are being used by tagged vehicles, the third being equipped to assess the implications of cross-lane tag reading; ie. the tag in one lane is sensed in an adjacent lane. All lanes will continue to be used by non-tagged vehicles paying normal toll transactions.

Each toll booth is fitted with a tag detector and a booth computer with communication links to a control computer in the toll office. The coded tags are to be attached to the windscreens of commercial fleet vehicles and selected RTA vehicles, by removable velcro strips allowing drivers to take the strips with them when they leave their vehicles.

As the vehicle approaches the toll booth, the tag is activated by a radio signal from the booth antennae. In the current trial the vehicle needs to slow down approaching the booth. However, it is expected that eventually this will not be necessary. The tag identification is reflected by radar back to the antennae. The tag number is then passed to the booth computer which compares it with a memory resident data base to check whether the tag has a credit balance. If so, a booth mounted message board indicates that the motorist can proceed through the toll gates. The toll amount is then deducted from the vehicle's account.

If the balance is low, the message board indicates this to the driver. If the balance has expired, a different signal shows that the motorist must pay a cash toll. The entire process is effectively instantaneous.

A video violation enforcement system is integral to the scheme. It records any vehicle which drives through without paying by tag or cash.

ETC technology, though still in its early implementation phase, may offer significant opportunities for free-flowing tolling, reduced congestion, travel time savings, productivity improvements and efficient road pricing. If the present trial on Sydney Harbour Bridge is successful, there is potential for this technology to be introduced not only in Sydney, but elsewhere in Australia.

Source: Information provided by the New South Wales Roads and Traffic Authority.

Technological developments since the mid 1980s have resolved the privacy problems — with smart-cards as unidentifiable as telephone cards — and electronic toll collections are currently in operation (usually alongside a manual

or automatic cash payment option) on highways in several European countries (such as Italy, France and Norway) and the United States. Singapore is also planning to introduce electronic road pricing using smart-card technology. Such technologies allow the vehicle to be debited the appropriate fee as it passes through (or under) an electronic cordon, without its identity being able to be ascertained. A detailed examination of the road pricing schemes currently in operation or being planned in other countries is contained in appendix H.

Equity effects of road pricing

The introduction of road pricing, such as ERP, would have varying impacts on different groups throughout society.

Those who will clearly benefit most from congestion pricing will be:

- those who place a high value on their time (including most commercial vehicles) who will benefit most from less congestion and higher speeds;
- users and providers of high occupancy vehicle (HOV) modes, such as buses and carpools (which could benefit further if they were made exempt from such charges), who will benefit from an improved and quicker service; and
- businesses benefiting from more timely and certain delivery. Reductions in lost time for business could be passed on in better services and lower prices, which will benefit all sections of the community.

Benefits are likely to users of public transport, especially buses, as acknowledged by the State Transport Authority, South Australia which stated:

The STA would however benefit from the implementation of such measures locally in Adelaide, both through reduced road congestion for our on-street services and improved patronage (Sub. 268, p. 13).

In the absence of ameliorating or compensatory measures, those likely to lose from congestion pricing would be:

- those with a low value on their time or who cannot afford the charge; and
- some businesses whose customers may travel elsewhere to avoid the charge.

Professor Neutze commented on affordability:

It should at least be mentioned that road pricing will tend to price low income road users off congested streets because they will be unable to afford the congestion charges (Sub. 200, p. 3).

The net effects on the overall income distribution in society are difficult to predict precisely and will depend on the location and breadth of the scheme.

As congestion pricing would have most impact during peak periods, some of the equity effects can be analysed by examining the income profiles of those travelling to work by car in areas likely to be affected. Using 1991 census data, table A9.6 shows the income profile of commuters travelling from various parts (zones) of Melbourne into the central area.

Table A9.6 : Commuters driving into Melbourne's central zone, by zone of origin

Zone of origin	Income groups				
	< \$12 000	\$12001- \$25000	\$25001- \$40000	\$40001- \$70000	\$70000+
Inner West	5.4	36.3	38.9	16.5	2.9
Outer West	6.0	43.6	38.4	11.1	0.9
Inner North	6.2	38.7	37.6	14.8	2.7
Outer North	5.7	37.1	39.0	15.4	2.9
Inner East	5.4	23.9	34.7	25.1	10.8
Outer East	4.0	21.7	43.0	26.9	4.4
Inner South	6.2	25.7	34.3	21.1	12.7
Outer South	5.0	27.5	41.5	21.4	4.6
Total	5.7	31.1	37.2	19.5	6.6

a The zones of origin refer to the nine zones used in the Horridge model in appendix C. All figures are for travel from the zone of origin into the central zone, which constitutes the CBD and some fringe suburbs.

Source: ABS 1993a

This data reveals that less than six per cent of car commuters had incomes less than \$12 000 and over 62 per cent had annual incomes of over \$25 000.

It is extremely important for the eventual success of road pricing, and for reasons of social justice, that low income earners are protected when it is introduced. People with disabilities should also not be penalised.

Traffic diversion

The latest ERP technology could be operated at the single facility (specific road, bridge or tunnel), over a specific area (such as a CBD) or regionwide (such as a whole city).

In arguing for a regionwide application of ERP, the Town and Country Planning Association stated:

...the Commission's ERP proposal is inadequate to prevent evasion of payment by 'rat-running' along side streets. The Commission is wrong in its conclusion that road pricing is applicable only to inner urban arterial travel and central CBD 'cordon' entry: Adverse road effects such as congestion are now regularly observed in middle and outer suburban highways in Melbourne and Sydney. (Sub. 283, p. 14)

Similarly, the Municipal Association of Victoria considered:

If electronic pricing was used it would need to be on an area-wide basis to prevent an increase in traffic using local roads to avoid the toll on the main road network. From a traffic management perspective electronic pricing could be used to deter through traffic from using the local network, and avoid the need for physical devices such as speed humps and chicanes. (Sub. 266, p. 3)

The City of Melbourne supported:

... the need to include road pricing as a part of a broader demand management package. The City of Melbourne believes that these measures need to be examined on an area or metropolitan wide basis. One of the major traffic management problems facing local government is the intrusion of traffic into local streets. (Sub. 259, p. 3)

The problem of spillover effects from tolling specific roads was also raised by the ACTU/Public Transport Unions:

In Melbourne and Sydney, with tolls only on a few selected new or upgraded roads, many motorists are likely to continue to use alternative toll-free routes, including in some cases 'rat running' on residential streets (Sub. 271, p. iv).

It is not the intention of the Commission to limit consideration of ERP to the facility or area level, but rather to encourage its introduction incrementally. Region-wide ERP is a longer term objective, which has a better chance of coming to fruition if road users in built-up urban areas have grown accustomed to the use of ERP, even on a limited scale.

Undoubtedly, the tolling of specific facilities can lead to some 'rat-running' and spillover effects, as some drivers seek to avoid the charges. Only experience will enable the toll to be set at an appropriate level to reduce congestion on the tolled facility without causing excessive spillover effects. Traffic calming measures such as speed limits, speed humps and traffic lights could also be used to discourage such occurrences.

A9.4 Conclusion

The experience overseas, and more recently in Australia, with a number of variants of road pricing demonstrates that such policy options are viable and capable of playing a useful role in rationing road use.

The latest developments in electronic technology have made road pricing possible. The ability to price different vehicles for their use of particular roads or sections of roads at particular times, opens up the possibility for a more efficient allocation of road space.

The advantages of electronic road pricing are its low collection and enforcement costs and the ease with which it can price by areas and by time. It can also be used to charge motorists for the cost of pollution (see chapter A10).

The precise formula for introducing ERP will obviously vary from city to city, depending on local conditions. Some cities may be more suited, for instance, to the introduction of area-wide ERP rather than facility specific applications. This point was raised by the South Australian Office of Transport Policy and Planning, which stated:

...the Commission's views would be welcomed on the implementation of electronic road pricing in cities like Adelaide, which have a well defined 'grid' of arterial roads and not a number of discrete freeways or motorways which lend themselves to conversion to toll facilities...the options, in Adelaide's case, appear to be limited to the implementation of area pricing schemes rather than pricing the use of particular routes. (Sub. 224, p. 4)

The Commission considers that ERP has many advantages in terms of the efficient use of roads. In light of overseas experience, however, it favours initially tolling selected arterial roads, with their subsequent conversion to electronic collection once the technical standards for area-wide ERP have been determined, preferably nationally so all systems are compatible. The greater use of private toll roads will also extend the use of charges for congested road space. In due course these measures should increase public acceptance of more sophisticated approaches including area-wide schemes, such as in Singapore, and eventually the consideration of region wide applications of ERP.

The Commission recommends an incremental approach to the introduction of area-wide electronic road pricing. This could start in Sydney and Melbourne with tolls (preferably electronic) on certain new or upgraded urban arterial roads, bridges and tunnels, so as to reduce congestion. Realistically, this should be done over time to familiarise the public with electronic collection. In addition, wherever practicable, tolls should be extended to existing arterial roads and differentiated by time of travel so as to create controlled access to congested areas.

The collection of tolls for urban arterial roads would, other things being equal, generate additional revenue for state governments from motorists. The tolls proposed by the Commission are not, however, intended as a revenue raising measure.

The Commission recommends that tolls and other such user charges not be used to raise additional revenue from motorists in total, but rather to shift the burden towards those who impose the greatest costs. A policy of revenue neutrality should be adopted, by offsetting the costs of user charges with equivalent reductions in either the Commonwealth fuel excise

and/or state franchise fees on fuel. The Commission therefore recommends that any road pricing scheme that is introduced should provide concessions to the transport disadvantaged, including people with disabilities. Such concessions should be designed on the same principles as those for public transport use (see chapter A8).

This would reduce the cost of motoring in some areas, where the lack of congestion (and usually pollution) makes the incremental cost of road use in any case very low.

In the interim, despite their limitations, parking restrictions and taxes offer some practical solutions to congestion control. Parking restrictions, taxes and differentiated fuel franchise fees should be part of any sensible demand management strategy and are best implemented on a city-wide basis.

A10 THE ENVIRONMENT, ACCIDENTS AND ROADS

The adverse impacts of road use in the form of environmental damage and accidents need to be tackled better. Quantification of the environmental and safety impacts of urban transport is, however, a difficult task. Judgements often have to be made on the basis of the best available information, recognising the severe limitations of such data.

Ultimately, society has to weigh up the costs and benefits of applying alternative measures to address these negative impacts of urban transport. One approach is to use taxes and other pricing instruments to sheet home the cost of the impacts to the individuals generating them, so as to alter their behaviour. This has not always proved feasible and governments have brought in regulations to enforce standards for motor vehicle emissions as well as for safety.

A10.1 Introduction

While urban transport plays a vital role in the economic, social and private functioning of the community, it also has some negative consequences. This chapter is about the adverse environmental impacts resulting from the use of motor vehicles and the costs of road accidents.

A10.2 The nature of the environmental problem

Adverse impacts on the environment and our quality of life from the provision of transport in cities include the damage to health from atmospheric pollution, noise pollution, the run-off from roads, the emission of greenhouse gases, visual intrusion and ecological damage, including the loss of habitat and depletion of natural resources. The main focus here, however is on the impact urban transport has on local air quality.

In addition to direct impacts on the environment, there can also be upstream and downstream effects. An example of an *upstream* effect is the emissions from coal-fired power stations producing the electricity to run trains. A *downstream*

effect might be the damage to bushland and waterways from dumping old cars, oil and tyres. In other words, some of the environmental degradation can occur outside the urban areas where transport takes place.

Air Pollution

While the environmental effects of urban transport are varied, most community concern centres on emissions from motor vehicles. These emissions include:

- carbon monoxide;
- carbon dioxide (greenhouse);
- oxides of nitrogen (contributes to the formation of ozone);
- hydrocarbons (contributes to the formation of ozone);
- ozone (contributes to photochemical smog);
- particulates; and
- heavy metals (such as lead from petrol).

The implications of these emissions for the environment and human health are the subject of debate and disagreement amongst experts. However, there is agreement that they pose risks in sufficient concentrations and/or under certain weather conditions.

Fossil fuel combustion, particularly by motor vehicles, has been identified as the largest single contributor to atmospheric pollution, particularly in urban areas. The relative contribution to atmospheric pollution in Australian cities from various sources including motor vehicle emissions is shown in table A10.1.

Table A10.1: Relative contribution to atmospheric pollution in major Australian cities by source^a

<i>Source</i>	<i>Carbon Monoxide (%)</i>		<i>Hydrocarbons (%)</i>		<i>Oxides of Nitrogen (%)</i>	
	<i>Average</i>	<i>Range</i>	<i>Average</i>	<i>Range</i>	<i>Average</i>	<i>Range</i>
Motor vehicles	86	82-89	45	41-50	67	54-80
Other mobile	3	2-3	2	2-3	5	4-5
Waste combustion	1	1-2	1	1-2	<1	<1
Fuel combustion	7	4-12	10	6-16	21	9-34
Petroleum/solvent	<1	<1	35	30-38	4	2-5
Miscellaneous	2	<1-3	5	4-8	4	1-6

a Extrapolated from Australian Environment Council 1985. Percentages quoted are indicative only and are an arithmetic average of the values for Sydney, Melbourne, Brisbane, Perth and Adelaide. The values shown under the heading 'range' are the lowest and highest percentage for each gas from the five cities.

Source: Federal Office of Road Safety 1993

These figures show that motor vehicles are the largest contributors of major atmospheric pollutants. Any judgments about these calculations must be tempered by the fact that motor vehicles are responsible, for most of the urban passenger transport task and virtually all the urban freight task (see chapter A2).

For these reasons judgements about the significance of pollution from motor cars relative to other modes are difficult to make. One useful indicator, however, is the rate of emission per passenger kilometre of the various transport alternatives. It appears that for some major pollutants, the rate of emission by cars (per passenger kilometre) is relatively high (see table A10.2).

Table A10.2: Carbon dioxide and carbon monoxide emissions by mode

<i>Mode</i>	<i>Carbon dioxide</i>	<i>Carbon monoxide</i>
	<i>(grams per passenger kilometre)</i>	
Car	210	33
Bus	120	20
Rail	150	nil
Bicycle	nil	nil

Sources: ABS 1992a
BTCE 1991

The importance of transport pollution must also be considered in the context of pollution as a whole. For instance, although cars have higher rates of carbon dioxide emissions per passenger kilometre than buses and rail, motor vehicles contribute less than 25 per cent of total CO₂ emissions, the bulk of which comes from coal-fired power stations (the source of the motive power for nearly all urban rail and tram services). Cycling and walking are the only non-polluting forms of transport. Possible measures to enhance the role of cycling are examined in chapter B6.

The rate of emission and the concentration of particular pollutants is also affected by the speed of vehicles (cars, trucks and buses). Emissions increase markedly when vehicles accelerate and are low when they are idling. The impact of congestion on pollution levels is a complex question, but there is some evidence that traffic congestion (stop/start, acceleration/deceleration of traffic) increases local air pollution (Inter-State Commission, 1990). Singapore has enjoyed improved air quality as a result of its measures to reduce road congestion.

One indication of the extent of pollution problems is the degree of conformity with accepted air quality standards. Standards are necessarily arbitrary and are not always able to be based on rigorous comparison of costs of pollution with costs of pollution reduction. In Australia, they are also incomplete in coverage.

They can, however, reflect community attitudes about desirable pollution levels at particular times and indicate changes in pollution levels over time.

Monitoring conducted by various Environment Protection Agencies (EPAs) suggests that there has been some improvement in air quality over the past decade; such results are, however, very sensitive to the number and precise location of monitoring stations. This conclusion is based on the number of days there have been violations of air quality guidelines. (Air quality is usually measured as the total emissions of a particular type within each one-hour or eight-hour period in the day, as measured by testing stations at particular locations in each city.)

The Federal Office of Road Safety (1993) reports that carbon monoxide violations have declined substantially, with Melbourne, for example, having no breaches of the eight hour goal since 1983, and Sydney's breaches falling from 69 days in 1988 to 18 in 1991.

It is more difficult to infer trends in the levels of nitrogen dioxide. While the number of breaches have been low in recent years (see figure A10.1), the formation of nitrogen dioxide in the atmosphere (from the nitric oxide in vehicle exhaust emissions) is strongly affected by annual weather patterns.

Ozone — a secondary pollutant formed from the mixture of oxides of nitrogen and hydrocarbons — is the gas used to measure photochemical 'smog'. According to the National Health and Medical Research Council (NHMRC), a figure of 0.12 parts per million (ppm) averaged over any hour in a day is deemed to put human health at risk by reducing lung capacity. Breaches of ozone standards in most cities have shown steady declines or stabilised. Recent data from Sydney (see figure A10.2), Melbourne (see figure A10.3) and Adelaide indicate that the downward trend may not continue. Monitoring of ozone in Perth only commenced in 1990, but in the first half of 1993 alone, the one hour target was breached on more days than previously recorded (see figure A10.4).

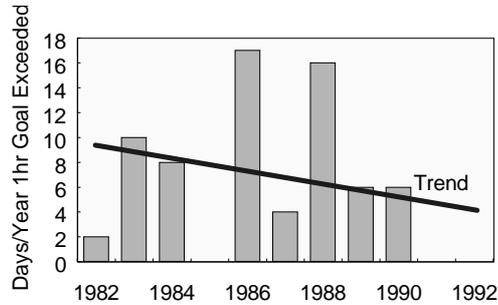
Despite the evidence of some overall improvement in air quality in recent years, trend levels vary depending on the pollutant in question. As the New South Wales Minister for the Environment stated:

While it is true that there have been some improvements in air quality in Australian cities over the last decade, this is not the case for all air pollutants. For instance, in Sydney, hydrocarbons and carbon monoxide emissions declined slightly, but oxides of nitrogen emissions remained constant, while emissions of particulates increased.

The summits on Air Quality in 1991 and 1992 highlighted considerable public concern about the quality of air in the Sydney basin. Specifically, there is concern that the reduction in photochemical smog (ozone) episodes in Sydney over the last decade may

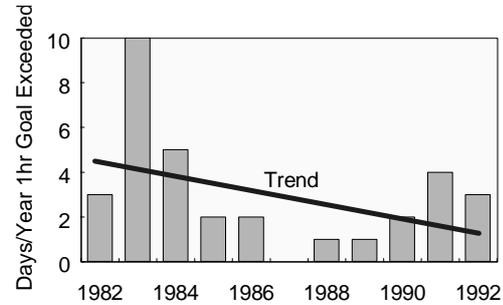
not continue in the face of increasing hydrocarbon and nitrogen oxide emissions.
(Sub. 313, p. 3)

**Figure A10.1:
Breaches of nitrogen dioxide
standard in Sydney**

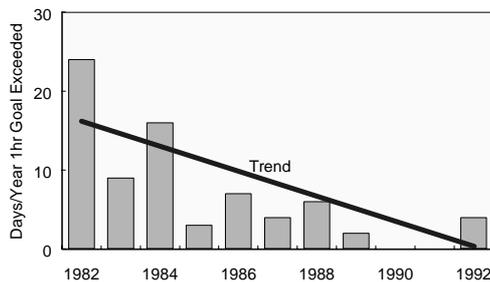


Source: EPA New South Wales

**Figure A10.2:
Breaches of ozone standard in
Sydney**

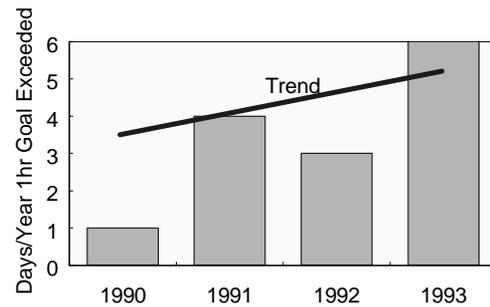


**Figure A10.3:
Breaches of ozone standard in
Melbourne**



Source: EPA Victoria

**Figure A10.4:
Breaches of ozone standard in
Perth**



Source: EPA Western Australia (Caversham station)

The NHMRC is currently reviewing the health effects of ozone and is considering, amongst a number of options, the adoption of the World Health Organisation's more stringent standard for ozone of 0.08 ppm averaged over any hour in a day. This review process should be completed by the end of 1994. If this target level is adopted as the standard for Australia, breaches of the one hour goal will increase, by definition, even if there is a reduction in emissions themselves. In international terms, a 1988 study (as reported by the Federal Office of Road Safety, 1993) indicated that Melbourne's smog levels were comparable with European cities and United States cities considered to have moderate smog problems.

Further information on vehicle emissions is being sought in a study being undertaken by the Federal Office of Road Safety. The objectives of this study are to:

- assess the extent of emission control system deterioration and failure in 1986-1991 passenger cars;
- assess the emission performance of 1981-1985 passenger cars with reference to their original requirements;
- estimate the exhaust emission performance of the current passenger car fleet;
- identify the likely causes of poor vehicle performance, including the prevalence of inoperative catalytic converters; and
- assess the need for inspection programs including the effectiveness and relative cost of a range of possible tests and inspections aimed at identifying high polluting vehicles.

The project (due to be completed by April 1995) should help to assess the magnitude of the emission problem, and assist in developing programs for improving the performance of those vehicles which are major contributors to air pollution.

Motor vehicles are the largest single contributor to atmospheric pollution in urban areas. It is clear, however, that there have been reductions in the levels of some emissions from motor vehicles in Australia's cities. The main problems of local air pollution from motor vehicles are in Sydney and Melbourne. In the absence of corrective measures, as other cities grow in size, they also could encounter decreased air quality. Some emissions can also create pollution problems some distance from where they were released.

Greenhouse gases

The costs of greenhouse gas emissions are even more difficult to quantify than other emissions, because the effects are global and may be long term. (The Commission's 1991 report *The costs and benefits of reducing Greenhouse gas emissions* discussed this issue in more detail.)

The Commonwealth Government has adopted an interim planning target for greenhouse gas emissions. This requires that emissions not controlled by the Montreal protocol (on ozone depleting substances) be stabilised at 1988 levels by 2000, and reduced by 20 per cent by 2005. The Government has resolved not to proceed with measures which would have a net adverse effect on the

economy in the absence of similar action by major greenhouse gas producing countries.

Noise pollution

Noise pollution is a function of increasing road use, roads design and the mix of vehicles using the roads. Motorbikes, trucks, buses and trams tend to be noisier than cars. While the magnitude of car travel makes it the main contributor to noise pollution in aggregate, freight trucks and trains may create a larger problem in particular locations.

Noise is less of a problem in newer cities which have grown up with the motor vehicle. For instance, the Western Australian Government said that in Perth:

Most regional roads have been planned and designed with wide reservations and in conjunction with sympathetic land uses and building design. A high proportion of industrial and commercial land adjoins these roads, in preference to residential development, and many are controlled access highways and any residential development is designed to face away from them. (Sub. 170, p. 56)

A10.3 Costs of pollution

While measuring the level of emissions gives some indication of the extent of environmental problems, development of effective policy responses in this area requires the translation of information on emission levels into estimates of the costs they impose on society.

Where possible, better insights into the scope of the problem are given through assessment of the costs of different levels of pollution (and pollution reduction) in money terms.

Such quantification is often extremely difficult. Considerable uncertainty surrounds the scientific relationships between vehicle emissions and pollution, and the effect of pollution in imposing costs such as those to people's health. The South Australian Government noted:

The evaluation of environmental costs is a complex area requiring much more research. Scientists still appear inconclusive in predicting the ramifications of the current level of pollution, of which transport is recognised as a key contributor. Instead of pricing for environmental costs, targets are set for reducing known pollutants. The costs of achieving such targets need to be determined, including the impact on efficiency of setting arbitrary controls. (Sub. 144, p. 11)

Frequently there are large numbers of people affected who incur both direct costs in terms of discomfort and illness and indirect costs through avoidance of

the problems (for example, by moving house or erecting barriers to air and noise pollution).

The complexity of the issues involved has led to the development of a range of methods of measuring pollution costs — see box A10.1

Similar difficulties beset estimation of the costs of noise pollution. The cost of noise pollution arises through:

... physiological and psychological effects on people. Noise tends to interfere with sleep, concentration, ability to perform complicated tasks and is a general source of annoyance. This is reflected in house prices with a fall of about 0.5 per cent per decibel change in traffic noise level. An equity problem arises with nearby road residences suffering a decline in quality of life for the benefit of the wider motoring public. (Sub. 170, p. 56)

Box A10.1: Evaluating environmental costs and benefits

Direct costing attempts to account for the costs associated with air pollution such as the medical expenses of those whose health is impaired by pollution and the loss of income caused by related time off work. One difficulty with this method is that non-market items (for example, damage to the natural environment) tend to be excluded from the calculations leading to underestimation of pollution costs.

The 'property value' approach (*hedonic pricing*) attempts to infer values of environmental characteristics from the attributes of traded goods. For instance, it may be estimated that a house in a clean air environment, other things being equal, will be worth more than the same, or similar, house in a polluted environment. The differential can be used to estimate the value placed on clean air. A difficulty with this method is the problem of adequately isolating characteristics.

Contingent valuation is based on surveys of people's willingness to pay or to accept compensation in return for improvements or damage to the environment. The problems with this method relate mainly to getting unbiased responses.

Control costs measure the costs of pollution in terms of the costs that society has been willing to pay to prevent it. This method assumes that the most optimal methods of pollution control are employed and further that the community - who ultimately sanction these methods by voting in or out governments - is aware of the true costs of all the alternative methods.

Although levels of noise pollution are relatively easy to monitor, estimating the external costs of noise pollution is difficult. Methods used to approximate the external cost of noise pollution include the effects of noise on property values, and the costs of noise-abatement measures.

Despite the difficulties involved, there have been some attempts at quantifying the costs of pollution. One Australian study used United States estimates of emission damage costs per gram and emission levels per kilometre, converted them to Australian measurements and currency, and combined these estimates with data from the ABS 1988 Survey of Motor Vehicle Use on distance travelled and vehicle type. This study estimated aggregate air pollution costs for Australian vehicles at over \$0.75 billion using direct costs — and the cost of noise pollution at around \$400 million in 1989-90 based on the effects on real estate prices (see table A10.3).

Table A10.3: Costs of urban pollution and noise, 1989-90

<i>Atmospheric Pollution</i>	<i>\$ million</i>
Cars, buses and light commercial vehicles	671
Petrol engined trucks	28
Diesel engined trucks	84
Total	783
<i>Noise Pollution</i>	
Cars, buses and light commercial vehicles	129
Medium trucks	69
Heavy trucks	192
Total	389

Source: ISC 1990, pp. 200-204

One problem with these estimates is that they are derived from the results of a United States study of American pollution problems. While they offer an indication of plausible orders of magnitude of the costs of motor vehicle emissions, the absence of rigorous measuring of both local pollution levels (including by source) and agreement on the health and environmental impacts of these emissions in Australian cities, places some doubt on their accuracy.

Dr Kenworthy (Sub. 77) provided other estimates (table A10.4), apparently indicating that the costs of air and noise pollution are very high for cars and buses, but non-existent for trains. These figures were partly derived from the ISC analysis, and other unpublished material, and suffer from many of the same limitations as the ISC data.

The Australian Automobile Association said it considered that:

The comparisons of costs for various modes illustrated [by Kenworthy] are clearly biased...If rail truly cost only 27 cents per passenger-km, why doesn't rail make a profit? Perhaps the data for rail is not as accurate as implied. (Sub. 190, p. 5-6)

Table A10.4: Capital, operating and external costs of transport modes in Australian capital cities

<i>Cost item</i>	<i>Rail</i>	<i>Bus</i>	<i>Car</i>
	<i>(cents per passenger km. \$1991)</i>		
Capital and operating	27.06	21.51	26.65
Depots/Car parking	na	1.09	3.42
Roads	na	na	8.89
Road maintenance	na	0.03	0.00
Fatalities	0.12	0.03	0.35
Injuries	0.00	0.00	0.11
Property damage	0.01	0.00	0.18
Air pollution	0.00	0.25	0.43
Noise pollution	0.00	0.20	0.08
Total	27.19	23.11	40.11

na not applicable

Source: Dr Kenworthy (Sub. 77, p. 59) based on an unpublished paper by G. McGlynn and J. Andrews

Further evidence is being sought in a study of externalities in Victoria by the BTCE and the Victorian EPA using consultants in the USA with a background in this area. The methodology employed is primarily based on a willingness to pay approach. The Metropolitan Air Quality Study (MAQS) currently being undertaken by the New South Wales EPA (Sub. 313) aims at developing a database of environmental costs and benefits.

The economic costs of pollution in Australian cities remain unclear. There is a need for further careful assessment of the costs of pollution. Studies such as those being undertaken by the Victorian Environmental Protection Agency and the Bureau of Transport and Communications Economics constitute worthwhile steps in this direction.

A10.4 Developing policy responses to pollution

Any level of pollution imposes costs on society. However, in combating pollution, regard must be given to the costs of such measures compared with the costs of the harmful effects they seek to reduce.

Where, as is often the case, polluters do not bear the costs of the pollution they generate, it will generally be in society's interests for there to be some intervention to have those costs reduced. Australia, as a member of the OECD, has endorsed the 'polluter pays principle' as a means of tackling pollution problems.

Sometimes the need for action is fairly obvious. For example, initial reductions in pollution may be achieved relatively cheaply with slight modifications to

engine design or fuel composition. These changes may bring large reductions in costs.

The achievement of no pollution at all, however, may be unachievable without imposing costs considerably beyond the expected benefits. Indeed the complete elimination of external effects from cars, trucks, buses and trains might well only be achieved — given present technology— by the elimination of these modes of transport in their current forms.

The South Australian Government commented:

That environmental and congestion costs are associated with travel is rarely disputed, but little research is directed at placing reliable estimates on the value of such costs. Unless we are reasonably confident in valuing such costs we can hardly ask users to bear them through prices/charges. (Sub. 144, p. 11)

At some point, however, policy makers may have to respond to community concerns, even where accurate assessments of pollution costs are unavailable.

The Western Australian Greens argued that:

The lack of data on pollution is not a good enough reason for no ameliorative action now. What constitutes an ‘acceptable’ level of pollution is a value judgement that can only be determined by community decision making processes. There is no ‘right’ level of pollution. (Sub. 212, p. 16)

In similar terms, the Victorian Government argued that:

... the uncertainties do not (and should not) prevent the implementation of policies which are assessed (using the best available information) as the most cost-effective ways of protecting air quality consistent with social and economic goals. (Sub. 319, p. 16)

Particularly in circumstances where estimating the costs of environmental damage is difficult, it will always be in society’s interests to seek the most cost-effective measures of policy options available.

‘No regrets’ policies are those which produce both environmental benefits and net economic benefits. Such policies are especially useful where the costs of environmental effects are difficult or impossible to measure. ‘No regrets’ measures can be implemented with confidence that their implementation costs are small relative to the costs of the environmental damage they aim to abate. As such, they offer, partially at least, ‘win-win’ solutions.

Recognition also needs to be given to successful measures, such as Government imposed vehicle emission standards, which have already helped to reduce pollution from motor vehicles. The introduction of unleaded petrol has also had a positive impact on air quality.

The balance between the costs of pollution from emissions and costs of abatement can be achieved in many ways:

- the taxation of emissions themselves;
- standards for vehicle emissions (new and old);
- fuel composition standards;
- the reduction in fuel use through taxation;
- the issue of tradeable pollution rights which allow fixed aggregate levels of pollution of particular types;
- road use charges;
- encouragement of lower-polluting public modes of transport; and
- changes to urban form to minimise car travel.

These policies differ in the accuracy with which they can be targeted at pollution problems as well as their cost-effectiveness.

Poorly targeted measures not only penalise non-polluters as well as polluters, they can also provide the wrong signals for technical change. For example, a fuel reduction strategy will do nothing to reduce emission per litre of fuel consumed.

Measures to alleviate pollution need to be carefully targeted, so as to minimise the costs imposed on those not responsible for causing the problem.

A10.5 Consideration of policy measures

Pricing measures

Market-based measures aim to internalise the costs of environmental damage from transport onto the individual, such as the motorist, who causes the damage. Unless transport users are made to face the costs of their actions, there will inevitably be more damage to the environment than would otherwise be the case.

The Ecologically Sustainable Development (ESD) Transport Working Group found that:

...the major economic impediment that inhibits a move towards ecologically sustainable transport is the fact that prices for transport services do not reflect the full environmental costs imposed on society by those decisions ...[and concluded that]... by ensuring that prices adequately match transport costs, a more sustainable mix and level

of transport activity can occur within existing urban structures (ESD, 1991b, pp. xxvi and xxix).

As will be seen, however, it is not always easy, or perhaps even possible, to internalise such costs in a well targeted manner, without unnecessarily imposing costs on transport users whose actions may have much less impact on the environment.

A number of participants proposed shifting the burden of taxes from fixed to variable charges, in order to use taxation as a means of altering transport behaviour. Mr Cotgrove argued:

Australia would be better off, economically, socially, and environmentally, if motor vehicles were cheaper to own and buy, but dearer to operate. Cheaper cars and trucks would increase motor vehicle ownership, benefit low income families and stimulate the motor vehicle production and service industries. The best way to achieve this is to reduce the high impost of vehicle sales tax and annual registration fees ...[this]... would enable more people to afford cars, would reduce greenhouse gas emissions and air pollution damage, and would stimulate the economy by shifting the tax burden from final goods and services to resources. (Sub. 199, p. 2)

Similarly, the Bicycle Federation of Australia expressed the view that:

Fixed vehicle ownership charges should be reduced and then abolished before there is any reduction in fuel excise or state franchise fees on fuel. Removal of standing charges, including third-party insurance, and replacement with a fuel charge or similar charge proportional to use has been recommended by a number of Federal inquiries. (Sub. 306, p. 6)

Road pricing

In chapter A9 the Commission has recommended the use of some road pricing measures, including tolls on certain arterial roads. Road user charges, particularly those which are location specific, are likely to make a contribution to reducing certain motor vehicle emissions. This has been the experience in Singapore with its area licensing scheme. In the Netherlands, a highly developed road pricing scheme is currently planned for, which will explicitly take into account the costs of pollution from vehicle emissions — see appendix H.

The main advantage of road pricing is that it can be directly targeted at traffic in particular built-up urban areas where local air pollution is considered to be a significant problem. One disadvantage is that well maintained ‘clean’ vehicles would face the same charge as ‘dirty’ vehicles of the same type. The fact remains, however, that short of directly taxing emissions, which is not technically feasible at present, any charging mechanism is going to be a somewhat blunt instrument.

The direct pricing of roads offers a useful means of tackling the problems of local air quality. The development of electronic road pricing as a means

of tackling congestion (see chapter A9) can also be applied to protecting the environment through the imposition of a surcharge in heavily polluted areas.

Taxing emissions

The taxation of emissions allows clear messages to be given about the costs seen to be associated with emissions. Unlike design regulations, taxes allow vehicle owners to make their own choices between vehicle characteristics and performance. Taxes also encourage innovation in pollution reduction, although this is more likely to be driven by overseas developments in technology.

To some extent taxes could substitute for design regulations when taxes on pollution emitted by new vehicles were set according to the characteristics of particular models when new.

To be most successful, however, taxes on emissions should be levied on the volume of pollutants from each motor vehicle. People who used vehicles with high emission rates only infrequently would then pay less than if taxes were levied on vehicle characteristics.

Emissions can also be measured instantaneously from analysis of exhaust gases as the vehicle passes a monitoring point. Vehicles can then be identified and charged or taxed according to the emission level. The technology for this has recently been trialled in Melbourne (RACV and VACC 1992). However, it appears that the level of the pollutant, so measured, varies significantly with how the vehicle is being driven, and provides an unreliable indication of the overall performance of the vehicle's emissions. In addition, instantaneous measures do not provide an indication of the total quantity of emissions.

With or without continuous monitoring, taxation should ideally also be highest for cars travelling in areas in which damage is worst. This can be difficult to implement because vehicles travel in and out of particular urban areas. Nevertheless it could be appropriate for vehicles registered in some areas to face higher taxes than those in others.

Fuel taxes

Taxation of fuel and road use may also be used to reduce emissions. Fuel taxes on passenger motor vehicles predominantly take the form of the Commonwealth's fuel excise, state fuel franchise fees and additional state government imposts on petrol and diesel.

The emission of some pollutants is strongly related to fuel use. There is a direct relationship between the amount of lead in petrol and the amount of lead which

is emitted from a vehicle's tail-pipe. In addressing this problem, taxing leaded petrol is an appropriate measure.

More generally, fuel taxes are indirectly targeted at pollution reduction because their relationship to most types of emissions is imprecise. Fuel taxes do not create immediate incentives for the development of innovations to reduce emissions per unit of fuel consumed, but they do encourage fuel economy and reduced vehicle use. In recent decades there has been considerable success in reducing their emission per unit of fuel consumed, and this process is expected to continue as the nation's fleet is replaced by newer vehicles.

Dr Knight made the point that, rather than concentrating on emissions per litre consumed, what is more important are emissions per passenger kilometre travelled. He argued that:

... in any case, road and fuel pricing would reduce fuel consumption and thus have significant benefits in terms of reducing greenhouse gas emissions (Sub. 211, p. 5).

Many estimates (see appendix B) suggest that a ten per cent increase in fuel prices would, in the longer-run, produce a decrease in petrol consumption of about six per cent and a fall in car travel of about half that (or about three per cent). (The difference is accounted for by a switch to more fuel efficient vehicles.)

It is true that any reduction in fuel use, in polluted or unpolluted areas, will reduce the amount of greenhouse gases emitted into the atmosphere. As far as local air pollution is concerned, however, fuel taxes could impose large costs when they spill over to affect the behaviour of motorists in areas in which pollution levels are very low. The Northern Territory Government said:

The appropriateness of some aspects of the reform package such as increased road user charges to overcome congestion problems in the CBD are not of immediate concern for the urban areas of the Territory. In addition, national application of measures targeted at reducing the cost of air pollution in major urban areas may penalise remote areas that are not subject to similar pollution levels. (Sub. 310, p. 2)

To reduce such spillovers fuel taxes could be differentiated by area and targeted at urban motorists. State' fuel franchise fees, for example, can, and in some states do, vary by location within states according to urban, outer-urban and rural areas (see chapter A9). The Bicycle Federation of Australia stated:

This established mechanism allows for regional fuel taxes to be varied to allow for pollution components. Urban fuel fees should be set considerably higher to cover the negative externalities of growing and excessive car use in our cities. Funds raised from the urban fuel taxes should be devoted to funding bicycle transport and other benign urban transport modes. (Sub. 306, p. 8)

Fuel taxes therefore provide one method of achieving sharp reduction in vehicle use, and so in pollution. As a short-term measure they are faster-acting than

many alternatives, because urban travel is directly affected through the fuel pump. Other measures, directed at emissions themselves (such as emission standards for vehicles) require longer lead-times to be allowed to produce vehicle modification and technical change.

But as a long-term measure, fuel taxes also have disadvantages precisely because they dampen travel activity without providing incentives to reduce emissions per litre. Relative to measures targeted at emissions, they offer reduced prospects for having both lower emissions and greater travel in the future.

Despite these limitations, **State Governments should consider differentiating their fuel franchise fees between the major urban areas and the rest of the state.**

Emission standards

There are difficulties in taxing emissions themselves, and alternative pricing mechanisms have weaknesses in their ability to directly target the main polluting vehicles. For these reasons, governments throughout the world, including Australia, have imposed regulations establishing emission standards for motor vehicles. Among the main advantages of emission standards, are the certainty and administrative ease in achieving desired emission levels, as opposed to the uncertainty of using trial and error to establish the appropriate prices in the market, to achieve the same result.

Emission standards for new vehicles are targeted fairly directly at the cause of the problem, but are difficult to confine to those built-up urban areas where emission reduction is a priority. Their use in other areas (for example, country Australia) can impose considerable cost for very little gain in terms of reduced environmental damage. One of the main costs of emission standards, apart from higher prices for new cars, is the increased fuel consumption associated with the use of catalytic converters.

Since 1986 the problem of emissions of lead from motor vehicles has been addressed by the introduction of Australian Design Rule (ADR) 37/00 and ADR41/00, requiring all new petrol engined vehicles to operate on unleaded petrol. Diesel engined vehicles have only been subject to regulations (ADR30/00) limiting visible smoke. The current limits on the emissions of noxious gases (carbon monoxide, hydrocarbons and oxides of nitrogen) from petrol engined vehicles (ADR37/00) is based on the US 1975 standard.

Although current Australian standards are not as stringent as United States standards, many of the current vehicles on the Australian market meet the latest

United States standards. This is a reflection of the move internationally by vehicle manufacturers, including those in Japan, to standardise their technology and equipment to fit the standards required for the United States market.

The control of emissions resulting from these measures will increasingly take effect as the old car fleet in our cities is eventually replaced by newer vehicles. Reductions in motor vehicle tariffs should assist this process.

The process could be accelerated, however, if Australians were given access on reasonable terms to the large quantity of low-cost second-hand vehicles which are equipped with high standard pollution control devices.

The NRMA was cautious about this proposal:

...we have some reservations about the flow on effects to Australia's technology expertise from the proposal to allow free access to large numbers of low-cost second-hand Japanese vehicles (Sub. 246, p. 7).

Notwithstanding this point, recent measures to penalise the importation of such vehicles have reduced the potential for them to be substituted for some of the stock of older cars in the Australian fleet which make disproportionate contributions to pollution.

Standards for motor vehicles are applied Australia-wide. While it would clearly be desirable for standards for cars used in polluted urban areas to be higher than elsewhere, implementing this would seem to face insurmountable obstacles.

Currently, the responsibility for design standards as they relate to emissions (and noise), ultimately rests with the Ministerial Council (advised by the National Road Transport Commission). The Council, as standard procedure, takes into account the views of the Australian and New Zealand Environment and Conservation Council (ANZECC) before endorsing new ADRs.

Other than the requirement for vehicles to use unleaded petrol, all other standards are based on the way in which equipment performs in reducing emissions rather than on specifications for its technical design. This leaves maximum scope for innovation in meeting the legitimate requirements of society for better emission outcomes. It is important that these standards be prescribed at the broadest level possible; that is, they should relate wherever possible to the performance of the car, rather than to particular pieces of equipment that comprise it.

Much of the improvement in environmental effects that was observed earlier in this chapter has resulted from the imposition of design standards for motor vehicles. Despite drawbacks in terms of costs imposed on vehicle users in unpolluted areas, emission standards appear an effective practical measure to control transport pollution.

Emission standards for vehicles are playing a role in ameliorating pollution standards. They should continue to do so. Standards should continue to be based as far as possible on performance outcomes rather than technical design characteristics of equipment.

There are difficulties in measuring the costs of emissions, assigning those costs to particular vehicles, and relating that information to trip lengths and locations of travel. So there are limitations in relying on market mechanisms to address the environmental impacts of urban transport. This means that regulations such as emission standards may be useful measures to handle environmental problems.

Periodic testing

Another option is for emissions to be measured periodically at registration or randomly checked for compliance with specified standards. In this way the current level of emissions may be monitored and taxed, or registration refused.

Such an approach would require the specification of standards for all makes and models for cars.

Some of the greatest contributors to pollution are actually old vehicles. Greenpeace said:

While many of the policy options involve long term change there are some short term measures which can be introduced. In particular, these include reducing emissions from the existing vehicle fleet. In the United States, up to 50 per cent of vehicle pollution emissions are produced from 10 per cent of vehicles which require engine tuning or reconditioning. A substantial reduction could be achieved through introducing registration emission standards for vehicles 3 years or older. (Sub. 50, appendix, p.ii)

A 1992 RACV study of motor vehicle emissions concluded:

...the trial showed that 13 per cent of 22,800 vehicles surveyed contributed 50 per cent of total carbon monoxide emissions.

Generally, it was found that carbon monoxide emissions increased with the age of vehicles, and late model vehicles with catalytic converters are responsible for less contribution of the carbon monoxide, on a model by model comparison. (RACV and VACC 1992)

The environmental impact of the age of the vehicle fleet is complicated, according to research undertaken by the Victorian EPA, which suggests that very old vehicles, although less 'clean', are used much less than newer vehicles. Consequently, it is the vehicles in the mid range age group which are likely to be the main polluters.

Given that so much effort is made to ensure that new vehicles conform to specific environmental standards, it is somewhat incongruous that little or no effort is currently made to make sure that those vehicles continue to operate

'cleanly'. Periodic or random emission testing offer useful policy options, at relatively low cost.

The Commission recommends that a system of random emission tests, with fines or loss of registration for 'dirty' vehicles, should be implemented in Australia's larger cities, where pollution problems are most severe. Alternatively periodic testing of vehicles, say every five years, could be required for registration. The emission standards for such testing should be set according to the age, type and model of vehicle.

Public transport and urban form

A number of participants proposed encouraging public transport often in combination with changes to urban form, particularly the promotion of urban consolidation, as a means of addressing the environmental impacts of urban transport.

The Bicycle Institute of New South Wales considered that:

...the only failsafe way to reduce exhaust emissions is to reduce the dependence of cities on car transport, especially for highly polluting short distance travel (Sub. 278, p. 5).

The Greenhouse Association stated that:

We support moves towards urban consolidation and halting urban sprawl, extension and improvement of public transport ... and removal of the hidden subsidisation of car use (Sub. 26, p. 1).

In proposing solutions to Sydney's pollution problems, the Friends of the Earth (Sydney) argued that:

For transport into CBD the motor car should be strongly discouraged. Other large centres such as Parramatta, North Sydney and Chatswood should be planned to minimise cars. Public transport systems to these centres should be developed and inefficient car/road developments should be curtailed ... New rail systems may be considered to be the ultimate answer to Sydney's transport problems. (Sub. 29, p.17)

Prior to this inquiry the ESD Transport Working Group recommended that:

... governments and public transport authorities: identify and implement measures to encourage greater patronage of urban public transport services ... (ESD 1991b, p. 164).

Following similar logic, the Commonwealth Department of Environment, Sports and Territories called for 'government funding of public transport in place of road provision' (Sub. 163, p. 14), while Dr Kenworthy supported wholesale changes in 'urban systems', involving urban planning and public transport provision (Sub. 77, p.A-6-38).

The ACTU/Public Transport Unions put the case for subsidising public transport while they believed road users were being subsidised.

...we think it unlikely that governments will decide to implement full-cost pricing for road-users because of the strong political opposition to such a move. Hence the case remains for a continuing government financial contribution to public transport, in part on environmental grounds. (Sub. 271, p. 36)

The current relatively low levels of public transport use, however, suggests that even quite large shifts to public transport are unlikely to make a large impact on pollution problems. The former South Australian Government said of the emission of greenhouse gases:

The Australian domestic transport sector generates an estimated 26 per cent of Australia's carbon dioxide emissions. Urban passenger transport is responsible for 11.6 per cent and urban freight for 3.3 per cent. Thus, in total, urban transport contribution to carbon dioxide emissions is about 15 per cent. (Sub. 144, p. 2)

It concluded that increased use of public transport would contribute little, because:

...it is estimated that doubling the use of public transport would at most reduce carbon dioxide emissions by 3 per cent of the total attributed to urban passenger transport. More fundamental solutions are called for, which somehow maintain accessibility but significantly reduce the amount of travel. (Sub. 144, p. 4)

It needs to be recognised that trains and buses are often not dramatically more efficient than private cars in moving people in urban areas; the reason is that occupancy rates averaged over the whole day are quite low. Indeed it is even possible that untargeted fostering of public transport could worsen the situation. As the Western Australian Government pointed out, the gains from a switch to public transport depend on achieving high loadings. If loadings are low, the use of public transport vehicles designed for high loadings can 'impact more on the environment than a single car' (Sub. 170, p. 53).

In some areas there is evidence which suggests that, in terms of energy efficiency, bus performance, because of its low passenger loadings, is actually worse than cars. Messrs Morison and Rotsey argued that among the reasons for not expanding the ACTION system as the starting point for energy conservation in Canberra that:

... most parts of the system use at least as much energy as its passengers would require to do the same trip by car. This startling fact is another consequence of the very small passenger loads carried on most local routes for most of the day (and even in peak periods in some cases), so unless a lot more people can be persuaded to use buses, to raise the average load through the whole system, there can be no energy saving. Load increases would have to be substantial, in order to match the further gains expected in the energy efficiency of cars, around 20 per cent over the next decade. (Sub. 22, p. 3)

As has been noted in the earlier discussion of congestion (see chapter A9), subsidies for public transport do not have large effects in attracting motorists out of their cars.

Because they result in a service being provided at a lower price, subsidies can have the effect, however, of encouraging travel by those who would not otherwise have travelled. While there is some variation in the estimates, rail and bus travel each increase by about 3 per cent in response to a ten per cent reduction in price (see appendix B). In the longer run the shift to public transport is likely to be greater, particularly if the subsidies are used to improve service levels.

Measures to encourage the use of public transport have an even more tenuous link to a reduction in aggregate pollution. To the extent that people are encouraged to give up car use, pollution may be reduced. But it is not clear that those discouraged will necessarily be the people driving the longest distances in the most polluted areas in the most polluting vehicles.

Even so, there is no doubt that there are some cities in which a greater use of public transport, particularly at the right time of day, could help to ameliorate urban pollution problems, both global and particularly, local. The effect would be greater, the more that there was an increase in carrying loads for existing public transport vehicles, rather than the provision of more buses and trains.

Recognising that a modal switch can have environmental benefits, however, does not make it an objective to be pursued regardless of costs. For example, severe penalties for car use may achieve a large modal shift, but this would also impose large costs on society. As well, environmental considerations are only one of many which society must face when making transport decisions in urban areas. Furthermore, where more cost effective and better targeted measures are available for reducing environmental impacts, these should be considered before further costly subsidisation of public transport is considered.

The Commission has outlined in other chapters a range of measures to improve public transport. To the extent they result in better, more cost-efficient services, they should achieve higher patronage levels, with potential benefits for the environment.

Ideally, substitution among modes will occur as part of a response to measures aimed directly at pollution problems. That is, it would be preferable for public transport use to increase in response to both an increase in the efficiency and cost-effectiveness of urban public transport and measures aimed at facing car drivers with the true costs of their travel through taxes or regulations governing use of particular technologies. In this way travellers may choose the least cost

solution among many, including public transport use, travelling at different times, or not travelling at all.

The Commission does not favour subsidisation of public transport as a cost-effective means of reducing the environmental impacts associated with transport. Public transport does, however, need to improve, so that its patrons are not ‘forced’ to switch to car travel. Wherever possible, environmental impacts should be addressed by better targeted measures.

Other measures

The New South Wales Minister for the Environment suggested that consideration be given to the inclusion of environmental reporting requirements for transport operators and regulators.

This would help to improve market participants’ knowledge about environmental impacts, an essential requirement for the efficient operation of markets and establishment of better targeted and cost effective control strategies (Sub. 313, p. 4).

Such a policy could be linked to one of the key recommendations of the ESD Transport Working Group which proposed that:

...environmental impact assessment be applied to transport policies, programs and projects as an essential part of transport planning and decision making and to facilitate the application of ESD principles to transport (ESD 1991b, p. 173).

The former South Australian Government (Sub. 185, pp. 2-3) suggested a number of additional strategies for pollution reduction.

- Every car should be allowed and encouraged to utilise its passenger carrying capacity to the fullest extent, for example, car pooling.
- All companies over a specified size should be encouraged to initiate a ride-share program.
- A compulsory fuel efficiency target scheme for new motor vehicles should be established.
- Every new vehicle should bear an appropriate label giving its fuel consumption and the fuel consumption of the best vehicle in its class.
- All advertising material for motor vehicles should give details of fuel consumption and the fuel consumption of comparable vehicles.
- Sales taxes should be skewed to favour efficient vehicles.
- All vehicle standing charges should be replaced by a revenue neutral levy on fuel.

- Questions about fuel efficient driving techniques should be included in the written examination for a learner's permit and during the practical part of the test for a driver's licence .

Alternatively, tradeable pollution rights have many desirable qualities but are not a practical solution to vehicle-caused pollution because of the costs and impracticalities associated with trading rights for all vehicles on urban roads.

Other suggestions included penalties for ownership of older cars, enforced use of smaller cars in commercial fleets and better road management to achieve pollution reductions from better flows of traffic.

The Commission considers that positive outcomes could be achieved using policies which penalise emissions directly in the manner discussed in previous sections. There is a danger that some of the policies described above would potentially penalise the users of vehicles for limited environmental gains.

A10.6 Technological change

Most technological improvements to motor vehicles, making them more environmentally friendly, will most likely occur as a result of developments overseas. Recent research (Evans 1992, p. 845) suggests that it is feasible to achieve a reduction of fuel consumption for new vehicles over the years 1989 to 2005 of 15 per cent. This could be brought about, in part, by a 10 per cent reduction in car weight, achieved through the use of lighter materials without reducing the size of vehicles.

These reductions will occur largely independently of developments and policies towards pollution in Australia. Australian environmental policy should therefore reflect Australian assessments of costs and benefits of different levels of emissions and in that way encourage the selection of the appropriate technology.

Unless there are some revolutionary breakthroughs, such technological advances, in the foreseeable future at least, are likely to relate to modifications to traditional hydrocarbon fuelled vehicles. As Mr Moon of the Australian Housing and Urban Research Institute commented:

Electric, solar and hydrogen energy can, and do, power vehicles. But the cost of these fuels, either directly or by the required associative technology, are at this stage economically prohibitive. (Sub. 219, p. 6)

An example of Australian ingenuity working to modify existing technology is to be found at the University of Melbourne's Mechanical and Manufacturing Engineering Department, where engineers have recently devised a fuel system, involving the injection of a small amount of hydrogen, which virtually

eliminates smog-causing oxides of nitrogen emissions while reducing petrol consumption. However, one of the engineers on the project, Dr Watson, estimates that it will take around seven years to develop the system commercially.

Perhaps one of the most important developments in transport technology will occur outside the transport sector as it is generally understood, as a result of new methods of communication (see chapter A2). The Transport Group, Department of Civil Engineering, Monash University said:

... the future will see a reduction in average work trip length, a reduction in the peakedness of travel, an increase in the number and proportion of non-work trips, more complex travel patterns combining several destinations and trip purposes within one journey, and a reduced emphasis on long-distance commuting. None of these factors augers well for traditional public transport technologies. (Sub. 35, p. 4)

Similar sentiments were expressed by Telecom:

Another way to approach transport problems is to balance supply and demand by reducing demand on infrastructure through the reduction in the level of transportation activities. This will also directly effect the amount of energy consumption and pollution emission.

Telecommuting offers a demand side solution to the transportation problems by substituting unnecessary travelling. (Sub. 125, p. 1)

In sum, there may be fewer trips, but more of them may be undertaken by car. For all those reasons it will remain important to achieve appropriate policy settings to manage transport-based pollution.

A10.7 Road accidents

Nature of the problem

Road accidents have costly impacts in the form of deaths, injuries and damage to vehicles.

The ESD Transport Working Group Draft Report (1991a) reported that in an international comparison, Australia was found to have the highest proportion of GDP (three per cent) being absorbed by road accidents. However, despite significant increases in population and vehicle kilometres travelled, it was reported that:

The road safety record of Australia has shown a gradual improvement over the years 1980 to 1988, with a reduction in fatalities and injuries of nearly 20 per cent (ESD 1991a, p. 32).

On urban roads, traffic congestion, lower speed limits and a greater police presence, all combine to reduce travel speed. This reduces the number of road injuries and fatalities (as a proportion of accidents) compared with rural roads. As the Australian Road Federation pointed out:

Most road accidents are a consequence of driver error. Frequently they result when drivers travel too fast for prevailing conditions and most accidents involving death or injury occur at high speeds. (Sub. 13, p. 7)

Estimates of death and injury occurring specifically in urban areas are not readily available, but the Bureau of Transport and Communications Economics (BTCE) puts deaths from motor vehicle accidents in urban areas in 1988 at over 1 400 and the number of injuries at about 65 000 (see table A10.5).

Table A10.5: Urban road accidents, 1988

<i>Accident class</i>	<i>Accidents</i>	<i>Vehicles</i>	<i>Persons</i>			
			<i>Fatalities</i>	<i>Hospital injuries</i>	<i>Medical injuries</i>	<i>Not injured</i>
Fatal	1324	2138	1431	766	359	380
Hospital	11723	19878	na	13379	2188	8884
Medical	38600	65600	na	na	49100	48000
Nil injury	351200	649000	na	na	na	941461
Total^a	402847	736616	1431	14145	51647	985482

a Figures may not add due to rounding.

Source: BTCE 1992b

Fatality rates for public transport are significantly lower than for car travel. Those who travel by motorbike have a fatality rate 16 times that of those who travel by car (see table A10.6).

Table A10.6: Fatality rates for different modes of travel, Australia, 1988

<i>Mode of transport</i>	<i>Fatality rate</i>
	<i>(per 100 million passenger kms)</i>
Rail	0.2
Bus	<0.1
Rigid truck	0.4
Car	0.9
Articulated truck	0.9
Bicycle	4.7
Motorcycle	14.0

Sources: Information received from FORS and ESD 1991b

Costs of road accidents

Measuring the economic costs of accidents is a difficult task. The two main ways can best be described as the *human capital* approach and the *willingness-to-pay* approach.

The *human capital* approach — as outlined by the BTCE (1992b) — attempts to value the loss of earning or output capacity of the victim, brought about by the accident. Central to this approach is the discounted present value of the future output of accident victims that is lost due to their premature death or disability. Added to this value are other costs such as vehicle damage, medical treatment and imputed values for the loss of non-marketed output such as the services of those involved in home and community duties, and often some allowance for losses such as pain and suffering.

There is considerable debate as to the methodology most appropriate for measuring the cost of accidents. Recent Australian studies by the BTCE (1992b) and Andreassen (1993) of the Australian Road Research Board (ARRB) both use the human capital approach — which both estimate the average cost of fatalities at around \$625 000 — which explicitly provide lower bound estimates.

An alternative approach is the *willingness-to-pay* approach, which attempts to estimate, on the basis of survey data, the amounts that individuals would be willing to pay, or would require in compensation, for changes in the probability of death or injury during a forthcoming period. Using this method Dr Quiggin (Sub. 132) has produced a much larger estimate of between \$6m and \$7.5m per fatality.

A similar study by Rice, Mackenzie and Associates (1989) in the United States found that the value of life estimated by the willingness-to-pay approach was about US\$2m compared with an average fatality cost of about US\$350 000 using the human capital approach.

Road accidents were estimated by the BTCE — using the *human capital* approach — to have cost the community \$6.1 billion in 1988, of which accidents in metropolitan areas contributed approximately \$4.1 billion (see table A10.7).

The BTCE calculations were based on estimates of the number and type of road accidents, the number of casualties, their ages, gender, and the number of vehicles involved in the accidents.

A more recent estimate by Andreassen (1993) puts the cost of accidents reported to the police over the period 1989-91 at more than \$25 billion, including \$7.6 billion in 1991 (see figure A10.5). This figure will underestimate the true cost to the extent that unreported accidents (which are generally minor) impose additional costs. However, Andreassen's estimate is higher than that of the

BTCE, primarily due to his estimate of a higher number of permanent disabilities reflected in the cost of hospital admissions.

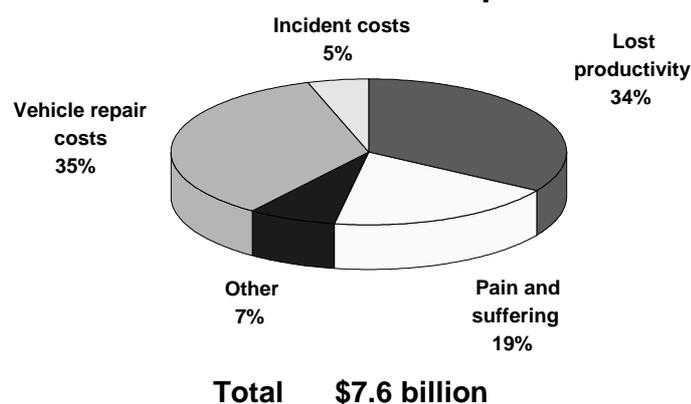
Table A10.7: Summary of metropolitan road accident costs, Australia, 1988

Cost category	Accident class				
	Fatal	Hospital	Medical	Nil injuries	Total
	(\$ million)				
Lost productivity					
Earnings	421	19	3	na	443
Family & community	308	10	2	na	319
Loss to others	9	2	1	na	11
Traffic and delay	1	11	35	229	275
Accident generated activities					
Vehicle damage	12	110	362	1033	1516
Insurance admin.	3	30	99	282	414
Invest cost	4	10	19	12	45
Legal costs	1	10	33	95	139
Ambulance costs	<1	2	3	na	5
Hospital costs	7	76	na	na	84
Medical costs	6	44	19	na	70
Rehabilitation	1	14	na	na	15
Pain and suffering	32	540	170	na	742
Total all costs	805	877	745	1650	4076

na not applicable

Source: BTCE reprinted in ESD 1991b, p. 33

Figure A10.5: Cost of road accidents reported to the police, 1991



Source: Andreassen 1993

If, as the BTCE suggests, about two-thirds of accidents occur in urban areas, the costs in urban areas on these estimates may be as high as around \$17 billion for 1989-91, including \$5 billion in 1991. Supporting this estimate, Andreassen has calculated the cost of accidents reported to or recorded by the police for each of the capital cities, which totals around \$4.4 billion (see table A10.8).

Table A10.8: Accident costs in capital cities in 1991

<i>Capital city</i>	<i>Accident cost</i>
	<i>(\$ million)</i>
Melbourne	1 183
Sydney	1 052
Perth	671
Adelaide	642
Brisbane	557
Canberra	189
Darwin	36
Hobart	27
Total	4 360

Source: Data provided by Mr David Andreassen (ARRB)

Achieving appropriate accident reduction

While accidents are costly to the community, reductions in their incidence, however, have costs of their own. This must be taken into account in designing measures to promote efficient road use. It is possible for accident reduction to become too costly to be worthwhile, with the benefits of reduced accidents outweighed, for example, by the expense of road modification or increased journey time. To put it starkly: road accidents could be eliminated if road use was abandoned in favour of other forms of transport, but society would certainly be the worse for it.

Motorists will be encouraged to take the most appropriate measures to reduce the risks when they face all of the costs of a possible accident for which they are responsible. Such costs can be incorporated in insurance premiums which vary with the risk associated with each driver. The costs of accidents include personal injury and property damage as well as the costs to third parties.

When individuals are liable to pay all the costs, they themselves can weigh up the benefits of more risky and less risky options (with different vehicle choice, speeds, routes etc) against the likely benefits from reduced accident risk. Risks of personal loss will have an impact on their behaviour.

In practice, drivers do not face all of these costs. Insurance premiums for health costs and third party damage costs do not reflect all the likely costs and risks associated with road use. Hospital costs are subsidised through the Medicare

insurance system, and there is doubt whether court awards for fatalities, which are factored into third party premiums, are set at levels that fully take into account the costs to society of death.

Dr Quiggin stressed the costs of death and injury to non-motorists, which he argued were not factored into the behaviour of motorists because of this undervaluation:

...all of the costs associated with the danger imposed on non-motorists represent externalities that should be included in the marginal cost of private road use. Although the actual number of pedestrians and cyclists killed and injured on the roads (about 600 killed and 5 000 injured) is smaller than the corresponding number of motorists (2 000 killed and around 20 000 injured), the associated externality is probably larger. The appropriate measure of external costs involves two elements. The first is the obvious one — the cost of death and injury. This is appropriately measured on the basis of willingness to accept. How much, *ex ante*, would the representative non-motorist accept as compensation for a given increase in the risk of death or injury. The second component is the costs borne by non-motorists in order to reduce the risk of death or injury. Although this is difficult to measure, theoretical considerations...suggest that this cost will be comparable in magnitude to the direct costs of death and injury. (Sub. 132, p. 2)

Mr Hughes criticised Dr Quiggin's approach in the following terms:

Dr Quiggin's treatment of risk is similarly arbitrary. There is no clear reason why motorists internalise risk while cyclists, for example, do not. The proper distinction would seem to be between injuries to oneself (which clearly are internalised) and to others, and then, for the latter, between 'reasonable' and 'unreasonable' injuries. We regard a driver as responsible for hitting a pedestrian walking sensibly across a marked crossing, but would we think the same of a driver taking reasonable care who knocks over a cyclist who is attempting to cut across the same intersection against a 'don't walk' sign? (Sub. 300, p. 7)

The key question is whether, in the event of an accident, someone will be found responsible and bear the costs. If this does not occur, or costs are undervalued, accidents will be excessive and roads overused.

Furthermore, when third party premiums are not set according to the risk of damage attributable to individual motorists, incentives among motorists will be distorted. Higher risk individuals will not bear insurance costs that match their higher risk, while lower risk individuals may be overcharged. These effects will themselves create undesirable behavioural effects among motorists. Dr Quiggin pointed out that amongst those adverse effects would be a disinclination among low-risk users to buy cars:

The current system of third-party insurance is, in essence, an access charge to road use (or more precisely to car ownership). The only incentive to take care is through no-claim bonuses. As observed [in the draft report] this incentive is almost certainly inadequate. Note that the suggestion that this distortion may lead low-risk road users to

take greater care is incorrect. The incentive to take care is reduced for all road users. The effect on low-risk users is to discourage car purchase. (Sub. 213, pp. 3-4)

The New South Wales Treasury reacted favourably to the Commission's proposal in the draft report for a review of third party insurance arrangements:

Treasury would support in principle this recommendation. Insurance premiums for health costs and third party damage costs currently do not reflect all the likely costs and risks associated with road use. Hospital costs are subsidised through the Medicare system, and the compensation for fatalities does not take account of the full costs to society of a death. (Sub. 311, p. 5)

The Bicycle Federation of Australia also supported such a review:

The BFA fully supports a full review of third party injury insurance arrangements. Our preferred model would be for a comprehensive no-fault road-users injury compensation system funded by a fuel levy. The current systems entail high legal costs and have systematic biases against cyclists who have to prove fault against motorists. The current systems also have fixed annual charges which mean that motorists who drive small cars calmly, slowly and infrequently have to pay the same as motorists who drive big cars aggressively, fast and frequently. The risks of injury to third parties are proportional to useage, speed and vehicle mass. The costs should be apportioned in the same way. (Sub. 306, p. 8)

The Western Australian Department of Transport suggested a wider review:

The recommendation to review third party insurance could be extended to include property damage insurance. It is claimed that unreported property damage accidents are minor and are not a significant component of the total crash costs. To our knowledge, this view has never been tested. (Sub. 320, p. 12)

An examination of the working of third party insurance schemes is beyond the scope of this reference. The Commission recommends a thorough review of third party insurance arrangements and their role in making the full costs of accidents part of the internalised costs of road users.

A10.8 Conclusion

This chapter has shown how difficult, controversial, and sometimes impossible it is to measure accurately the costs of some of the main adverse impacts of road use, particularly pollution and road accidents. Because accurate information is scarce on the costs of the problems, governments will inevitably have to apply value judgements, to some degree at least, in responding to community concerns about these issues. When doing so, governments should aim to implement well targeted measures, and ones that are likely to achieve the best results for the least costs. The Commission has made a number of suggestions in this respect through this chapter.

A11 REFORM: AN INTEGRATED APPROACH

Australia's urban transport systems are falling far short of their potential contribution to the economic and social well-being of our cities. There are no 'quick fixes' available: rather a mutually-reinforcing package of policies is needed. This chapter develops a program for reform which attempts to balance practicalities, equity concerns, and transition costs with the imperatives for change. While the approach entails some potentially difficult and far-reaching changes, avoiding these decisions will fail to secure the transport systems needed for the next century.

A11.1 The reform package

Transport is vital to making our cities work.

Many believe that the financial, economic, social, and environmental consequences of the way we build and operate our urban transport systems cannot be sustained.

In Australia in recent years, significant reform has occurred in other areas of transport such as long distance road transport, and domestic and international aviation. Urban transport lags behind, although there have been some notable improvements in several States in recent times which the Commission finds encouraging.

There are no easy answers to the many problems facing urban transport in Australia today. In part, this reflects the complex interlinkages between urban transport and the city. As a result, many of the recommendations in this report are interdependent. The South Australian Government observed:

... urban transport issues are interrelated and therefore it is difficult to look at issues in isolation. In practice we need a package of measures and policies which will reinforce each other to achieve objectives ... (Sub. 144, p. 3).

Particular aspects which many saw as interrelated include:

- competition between modes on an even basis;
- related to this, linking public transport prices to reform of road user charges;
- linking fare increases to improvements in service quality;

- maintaining social objectives at the same time as improving service efficiency; and
- coordination of urban development policies with urban transport.

Priorities for reform

The lack of a simple solution is reflected in the number of recommendations in this report. Whilst these recommendations together constitute a package, some recommendations are clearly more important than others. While many can be implemented in isolation, to do so simultaneously will multiply the potential benefits. However, inability to make change in one area should not delay action in another.

Identifying the priorities is necessary if the reform agenda is to remain focussed. Under the terms of reference for this inquiry, the Commission has been asked to give priority to areas where greatest efficiency gains are in prospect and where early action is practicable. A balance also has to be struck, however, between reforms which will bring large but ephemeral gains and those which secure more lasting benefits. For example, the Commission has placed greater emphasis on reforming the environment in which government transport agencies operate rather than suggesting individual technical solutions or management and work practices which need to be addressed.

On the basis of these considerations, the Commission has identified the key areas on which the reform effort should focus. These include:

- introducing constructive competition (see chapter A6);
- giving the institutions involved in urban transport well-defined objectives (see chapters A4 and A5);
- better pricing to encourage more efficient use of public transport and urban roads (see chapters A7 and A9);
- sounder investment practices (see chapter A7);
- more effective targeting and delivery of social policies (see chapter A8); and
- creating a cleaner environment (see chapter A10).

A11.2 An implementation program

Why do we need phasing?

As part of this inquiry, the Commission has been asked to advise on potential implementation strategies for introducing its recommendations.

The appropriate pace and sequencing of reforms involves many complex considerations and difficult judgments. There is a need to recognise practicalities which may be involved (for example, the logistics of corporatising public agencies), and some of the reforms are, by their nature, more long-term than others (for example, policies which involve changes to urban form).

Views on the possible or desirable pace of change differ. For example, the New South Wales Department of Transport argued:

... a more rational consumer oriented transport system can be achieved over time. However, given the existing distortions to the market, the very real economic costs of reform and the extensive market failure in the transport industry, reform must be seen as a continuing goal which can only be achieved over a reasonably long time frame. (Sub. 178, p. i)

Unnecessary costs associated with the transition to new arrangements also need to be minimised. Experience overseas with urban transport reform suggests that the importance of providing a measure of stability should not be underestimated.

While there would be large benefits arising from the Commission's reform package, some changes will have adverse impacts on certain groups or individuals. This raises the question of how to share any costs associated with reform. Consideration of equity issues, particularly when individuals suffer large losses as a result of reform, may also imply phased rather than overnight change. For example, the Commission is recommending phased approaches to restructuring public transport fares and to reform of the taxi industry. The ACT Government observed:

All communities have a collective responsibility for managing the human impact of economic and social change and governments have been given a particular responsibility in this regard. The spreading of such costs over time and different groups is a real consideration in economic change. (Sub. 228, p. 2)

It is important, however, that issues of transition not overshadow the fundamental imperative of beginning the reform of Australia's urban transport systems. Some instability is almost inevitable if changes are to be made in policies, regulations and operations that have been largely unchanged for almost fifty years. The economic and social costs of current arrangements and the extent of potential benefits from reform mean that the need to commence the process is urgent.

An indicative timetable

Given the need for a phased approach, the Commission has attempted to map out a timetable for reform. This timetable should be seen as indicative only, not a precise or rigid blueprint.

The key action is to start the process.

The process may well change over time. The Commission is mindful of concerns such as those expressed by the Chartered Institute of Transport which drew attention to:

... the fluid, constantly changing, dynamic nature of urban life and the demands placed on the urban transport system. Consequently we are concerned with the inevitable 'snap shot' nature inherent in any form of inquiry. There is a danger the recommendations made in the here and now might lock governments into strategies which might not be applicable over time. (Sub. 106, p. 16)

In similar terms, the former South Australian Government observed:

We need to be aware of the potential for technological change to create whole new scenarios not currently envisaged. We need to be aware that interventions on the current system impact both on how the system operates in the short term and how it evolves in the long term. As well as intervening in the current system to make it more efficient, we also need to step back from it and envisage new systems unconstrained by current technological limitations. Such a process needs to be ongoing, setting goals and strategies which are acceptable to the community and encompass reviews which take account of changes, including changes in community views. (Sub. 144, p. 19)

Changes in technology mentioned by participants in this inquiry ranged from the smart cards for public transport and road pricing to telecommunications advances to new age vehicles such as the 'green car' and even the 'flying car'. Technological developments may mean the policy issues of tomorrow are not the same as those of today. This underlines the need for a flexible approach which does not constrain future possibilities.

The appropriate pace of change may also vary between States and cities. While most States and Territories have commenced reform or have announced plans to do so, the pace of change needs to be increased.

Box A11.1: The timetable for reform		
	Aim	Action
Starting the process	<i>Begin introducing competition:</i>	<ul style="list-style-type: none"> - begin to tender for bus franchises - commence sale of new taxi licences and deregulate taxi fares - reduce regulatory obstacles to community transport - require road construction and maintenance to be put out to tender
	<i>Reform transport authorities:</i>	<ul style="list-style-type: none"> - remove regulatory functions from urban transport GTEs - commence corporatisation of public transport GTEs and divide into autonomous units - begin restructuring public transport fares - focus road agencies on planning and managing the road network - improve performance assessment, particularly of road agencies
	<i>Introduce other reforms:</i>	<ul style="list-style-type: none"> - put tolls on certain new or upgraded arterial roads, bridges and tunnels and continue parking and traffic management measures - trial electronic road pricing - better recognition of cycling - identify and reimburse transport concessions - start vehicle emissions testing
		
and keeping reform moving	<i>Extend competition:</i>	<ul style="list-style-type: none"> - continue tenders and trial open access for bus services - continue sale of new taxi licences
	<i>Extend other reforms:</i>	<ul style="list-style-type: none"> - complete corporatisation and fare restructuring - extend tolls to control access to congested areas
	<i>Allow full competition within and between modes:</i>	<ul style="list-style-type: none"> - remove any remaining economic regulation - introduce area-wide electronic road pricing

Starting the process...

The initial phase of the reform program will set up the framework to enable change to take place.

A priority is to ***begin introducing competition*** into those areas where it has to date been largely absent. It is the spur of competition which will drive other necessary reforms. In essence, this is no more than a continuation of the general trend, both in Australia and overseas, to reducing regulatory barriers in urban transport.

The Commission is not recommending a 'free-for-all'. Rather, it sees advantages in commencing with a structured approach which marries the advantages of existing arrangements with the benefits of competition.

The most appropriate way of introducing competition requires a ***case-by-case assessment***, and is likely to vary amongst modes and cities. Experience in other countries also suggests the need to manage the process and to consider carefully and precisely how competition is introduced.

A number of measures to complement the introduction of competition while achieving social and other objectives will be required. For example, governments should, where appropriate, ensure ***service coordination and integrated ticketing*** are in place, together with a framework for delivering ***community service obligations*** such as transport concessions and non-commercial services.

While the early stages of reform are unlikely to see the emergence of new urban rail operators, a gradual approach to introducing ***competition in urban bus services*** can be commenced immediately. Those State and Territory Governments that have not already done so should immediately begin to introduce progressively a system of exclusive franchises to operate bus services in urban areas. Such franchises should be allocated by open public tender (for periods of up to seven years). Experience in Australia and elsewhere suggests that competitive tendering of exclusive licences can take a remarkably short period of time to introduce.

Concurrently with introducing competition, a major focus of initial reform must be to ***improve the performance of existing public authorities***. The existing government-owned public transport operators should be divided into commercially autonomous units and corporatised as soon as possible. Functions associated with the administration and regulation of urban transport should be assigned to other agencies of government.

Introducing competition should not be delayed until corporatisation is completed. Rather, ***gradually introducing competition*** over the network (for example, by staggering the introduction of bus franchises of service areas of

government-owned operators) provides an opportunity for the authorities to make operating efficiencies before franchises for all their service areas are put out to tender. Allowing competition in at least part of the market maintains the impetus to continue reform.

The absence of comprehensive direct road pricing (at least in the short to medium term) limits the degree to which road authorities can pursue commercial objectives. Nevertheless, there is considerable scope for improving the performance of road provision and maintenance. One priority is to ***commence formal performance assessment of road authorities***. Road agencies should allocate all maintenance and road building works through a competitive tendering process.

Initial steps should be taken towards direct ***road pricing***. The Commission recommends an incremental approach, starting in Sydney and Melbourne with tolls (preferably electronic) on certain new or upgraded urban arterial roads, bridges and tunnels. In due course this should lead to public acceptance of more sophisticated approaches. A carefully conceived strategy for introducing electronic road pricing should include measures to address equity issues and the problem of traffic diversion. Meanwhile, parking restrictions, parking taxes, and traffic management measures should continue to form part of demand management strategies implemented on an area-wide basis.

Public transport fares should be restructured both to create a greater differential between peak and off-peak fares, and to increase with the distance travelled. Any fare increases should be phased in over several years and should be accompanied, if not preceded, by improvements in service quality.

A number of participants considered that changes to public transport fares should not be undertaken until action was taken on road pricing. While it is undesirable to introduce changes in pricing mechanisms that lead to an undue imbalance in the treatment of different modes, it is also necessary to ensure that this concern not delay reforms to fares.

The structure for ***reform of the taxi and hirecar industry*** should be set in place early. Taxi boards and advisory committees should be restructured to give users a substantial say in their operation. More fundamentally, each state and territory government should announce and then commence a program of annual sales of new taxi licences. Linked with this, fares should be deregulated immediately, except for requirements to notify them to the regulator and to display them inside and outside vehicles.

The Commission sees ***improving accessibility for the transport disadvantaged*** as a priority for reform. Better targeting of assistance enables greater assistance to be directed to those in real need — for example by providing assistance to

those that do not or cannot use public transport. Reducing regulatory barriers to community transport and freeing up the taxi and hirecar industry will also be of particular benefit to the transport disadvantaged.

The needs of *cyclists and pedestrians* should be given higher priority in transport planning. Speedy implementation of the national bicycle strategy would go a long way to enhancing the role of what are, after all, the only non-polluting modes. There is a need to translate agreed principles into action such as increasing the number of bicycle storage facilities at train stations.

A number of initiatives aimed specifically at *addressing environmental concerns* should be commenced or continued. Emission standards for vehicles are playing a role in ameliorating pollution and should continue to do so. The control of emissions resulting from these measures will increasingly take effect as the old car fleet in our cities is eventually replaced by newer vehicles. A system of emission tests, with fines or loss of registration for 'dirty' vehicles, should be introduced as a means of reducing pollution in those cities where pollution problems are most severe. Should these measures fail to achieve pollution standards which governments consider acceptable, further measures such as differential fuel franchise fees and surcharges on road pricing charges in particular areas should be considered.

... and keeping reform moving

Following the establishment of the reform framework, subsequent initiatives should seek to build on it.

After the initial introduction of *electronic road pricing mechanisms*, there should be an extension of tolling to more roads and cities.

Public transport authorities should be subject to *increasing competition* in a staged fashion.

Looking ahead, State Governments should be open to options for reforming *urban rail* in ways that promote greater efficiency, including the creation of separate infrastructure authorities and the franchising of rail services.

In the case of *buses*, the progressive allocation of bus service areas by competitive franchise should continue. In addition, there could be value in conducting demonstration projects allowing open access in particular areas. Depending on the experience, a case-by-case consideration could then be given to introducing open access (supplemented by minimum guaranteed services) to bus services in a city.

Reform of the *taxi* industry should progress steadily with continued sales of new licences.

The full benefits from reform require the elements of the process to be carried through to their conclusions, thus preparing Australia's urban transport systems for the 21st century. The future will have *competition between modes*, and electronic road pricing would be commonplace.

Competition among all modes would encourage the most efficient mix of transport services to develop in response to changing travel demands. Importantly, a competitive market would create opportunities for suppliers of all modes of transport to compete for a larger *total market*. For example, buses will no longer be restricted to providing feeder services to rail. Similarly, taxi operators and freight carriers will be free to compete with bus companies for route services. By this stage of the reform program, there would be a blurring of any distinction between buses and taxis. Taxi licences would be freely available subject to 'fit and proper person' safeguards. Any remaining distinctions between taxis and hire cars would have been removed.

A11.3 Transport and cities: the package applied

The Commission considers that the broad framework for reforming urban transport should be applied to all cities in Australia, but is conscious of the need to translate its recommendations into specifics for each State and Territory and each level of government.

The Commission recognises the important differences between States and cities. Cities differ in their history, patterns of development and transport policies. Priorities for transport reform consequently also differ. The Australian Automobile Association said:

It needs to be stated at the outset that issues such as transport deficits, urban sprawl, pollution and congestion will vary in importance between cities — in fact, many of the problems associated with urban transport are very much local in nature (Sub. 140, p. 1).

In a similar vein, the Western Australian Government drew attention to:

... the substantial and significant differences between the large, older cities of Sydney and Melbourne and the smaller, newer cities such as Perth. The histories of these cities is very different, as are their current situations. Similarly, their future needs and the most appropriate means of achieving them are likely to differ. (Sub. 170, p. 1)

Cities come from a range of starting points. Solutions may differ between smaller and larger cities, old and new cities and so on. For example, the urban rail systems in Australia vary significantly in size, market share, and method of organisation, militating against a single approach to structural reform. The different arrangements applying to buses in different cities also calls for implementation plans fashioned to fit individual circumstances. Reform of the

taxi and hirecar industry, on the other hand, could be applied in broadly the same way in all cities.

Similar logic also argues against blanket adoption of overseas models. What works in Europe, North America, or New Zealand may not necessarily work in Australia. During the course of this inquiry, the Commission has undertaken considerable study of experience and practice in other countries. The sensible approach is to take the best of what is offered in other countries and to learn from the mistakes and successes of others (see appendix G).

With these considerations in mind, the following section offers some comments on what the Commission's reform program might mean to individual States and Territories.

NEW SOUTH WALES

The New South Wales Government has introduced a number of initiatives in urban transport in the last few years. Many of them coincide with the broad thrust of the Commission's recommendations.

There have, already been some moves towards *corporatisation* of public transport authorities. The Commission supports the continuation of this program, with refinements. For example, the treatment of community service obligations appears to be in need of greater precision and, according to CityRail, negates incentives to pursue patronage. The NSW Government is developing a comprehensive CSO framework.

Reform of *public transport fare structures* is a priority given that parts of the Sydney system are reaching capacity and others are under-priced. The Commission notes that a major review of public transport fares by the Government Pricing Tribunal is scheduled for 1994-95 (Sub. 312, p. 3).

The Commission's recommendations would require consideration of *CityRail* being split up into separate business units or GTEs (for example, distinct business operations (for example ferries) and geographic regions (for example Newcastle buses). CityRail argued that separation of services from infrastructure is not an efficient solution for Sydney; but it is moving towards the division of operations into geographically based units (Sub. 256, p. 7). NSW Treasury warned that there may be operational problems in allocating track space among a number of companies, especially in major metropolitan areas during peak hours. However it agreed to the need for seeking competitive tenders for track and signal maintenance, including station operations and upkeep (Sub. 311, p. 2).

The concentration of *strategic planning and regulatory functions* in the Department of Transport is in line with the Commission's reform package. A *Integrated Transport Strategy* for Greater Sydney has recently been formulated.

The New South Wales system regulating *private bus* operators has some features in common with the Commission's competitive tendering option. It does, however, differ in three major respects:

- a lack of transparency in the tender evaluation process, combined with a lack of confidence in its accountability;
- a lack of an independent evaluator of the tenders; and
- no automatic retendering of expired contracts.

Opening franchises to tender automatically at the end of their term would sharpen the incentives for better service delivery rather than merely do what was sufficient to obtain renewal of the contract. Extension of this principle would imply subjecting all franchises, including STA's bus services (divided into franchise areas) to tender when their initial term expires and regularly thereafter.

In response to the Commission's draft recommendations in this area, the NSW Department of Transport commented that:

Significant policy changes at this time would bring uncertainty to the industry and could undermine the substantial improvements that have been achieved in service quality (Sub. 312, p. 3).

The Commission emphasises that the only other change in the first phase from the current NSW bus system is to focus on clear transparency and accountability in the tendering process. This should be feasible within the existing institutional and legal framework.

Sydney has significant *congestion and environmental problems*. It is the obvious city to begin electronic road pricing. Indeed, trials of the technology have already occurred on the Sydney Harbour Bridge (see chapter A9). The Commission recognises, however, the NSW Department of Transport's view that:

Extension of this concept to the existing road system and the use of electronic systems for revenue collection would require careful thought encompassing consideration of economic efficiency, equity, access and technical issues as well as community attitudes (Sub. 312, p. 3).

The NSW Department of Transport stated that 'the complete deregulation of taxi services is not acceptable to the industry' (Sub. 312, p. 2). That may be so, but the Commission urges the Government to take full account of the benefits which would accrue to the community as a whole from opening up the *taxi industry*.

VICTORIA

The performance indicators in chapter A3 suggest that the Melbourne system has been the poorest performer. This is recognised by the Victorian Government which, in its initial submission, identified the 'inadequacy of pre-existing institutional arrangements for delivery of public transport services as a major focus for reform' (Sub. 186, p. vii). The Government is currently aiming to reduce the public transport operating deficit by \$245 million a year as part of a program targeted at the State's budgetary difficulties.

Several of the Commission's recommendations on institutional reform have been adopted in Victoria. The Department of Transport is now responsible for planning, policy, regulation and service agreements including the purchase of services. The *corporatisation* of the PTC is proceeding. As part of a broader corporatisation program, the Department of Transport is to review CSOs within a State-owned enterprise framework.

The Commission's approach also involves separating the Public Transport Corporation into *autonomous business units* for the rail, tram and bus modes, and hiving off the urban rail passenger mode from freight and country rail passenger services. The Victorian Government has already moved in these directions. It has established a commercial charter for the PTC and commenced the creation of autonomous business units for metropolitan rail, trams, buses, country passenger services, and freight. A separate infrastructure business unit is also being established (Sub. 319, p. 8).

Recent *fare revisions* have been aimed at those areas where the divergence between costs and fares are greatest: long distance and periodic tickets. The introduction of a new automated ticketing system offers great scope for further improving fare structure, system data, and allows for integrated ticketing with multiple operators.

The Victorian Government has instituted a number of reforms to improve the management of *road infrastructure* to focus on core businesses, and to contract out much road maintenance and other services.

Bus services in Victoria are currently in transition. The Victorian Government has recently awarded bus contracts in a way which shares many of the features of the system of area franchises outlined in chapter B3. The Victorian Government's approach to tendering out routes and areas within the constraints of existing contracts provides an instructive example for other States.

A number of features of the new system, however, could be improved. For example, in the first round of contracts at least, tenders were not open to all

prospective operators, as tenderers were required to provide evidence of satisfactory past performance in providing regular passenger transport services.

The Commission's draft report proposals for open access in the *taxi industry* were not acceptable to the Victorian Government, although it did suggest that:

... consideration may be given to some deregulation of fare structures as currently occurs in some other States and internal competition will be fostered (Sub. 319, p. 3).

The Commission appreciates the sensitivities involved, but urges the Government to take full account of the benefits which would accrue to the community as a whole from opening up the taxi industry.

The Victorian Government suggested that 'traffic congestion in Melbourne, whilst not yet serious by overseas comparisons, imposes a significant cost on the Victorian economy' (Sub. 186, p. 43). A graduated approach to introducing *road pricing* should be commenced in Melbourne.

QUEENSLAND

The Queensland Government recently announced a *new policy* for public transport following a Department of Transport review. The new policy involves the introduction of exclusive service contracts specifying minimum levels of service and performance standards (for example, fleet standards). Contracts will be for five years, and will be renewed unless the performance standards and the conditions of contract are not met. The contract holders will be responsible for planning routes, setting timetables and coordinating services, but the Government can vary the area or routes or can instigate cross boundary services in the public interest. Queensland's approach to reform has a lot in common with that of New South Wales.

The new policy is based on a view that the public interest will be best served by a framework characterised by accountability and contestability, and that market entry should only be restricted when it will result in a better level of service delivery. These sentiments are consistent with those underlying the Commission's reform package. While the new policy contains some positive changes and should improve accountability, the Commission is concerned that the principles be fully reflected in the details of the new measures.

The major point of difference is that there will be no automatic retendering of expired contracts. The Queensland Government rejected automatic retendering of *bus service* franchises at the end of the contract period due to concerns about its effect on capital investment. While there is a trade-off between a secure investment environment and the benefits of periodic competition, there is a real risk that retendering only in exceptional circumstances does not strike the right

balance. The Commission's preference therefore is that bus franchises be open for all to tender after the contract period. In the Commission's view, it will also be important to guard against the danger of the approach becoming too prescriptive in its oversight of transport providers.

Reform of government transport authorities — one of the Commission's reform priorities — has commenced in Queensland. *Corporatisation* of Queensland Rail is already scheduled to occur by 1995. Under corporatisation, urban passenger services which do not provide a commercial return will be clearly identified and funded as a community service obligation under a performance agreement between the operator and the Government. It would be preferable for Citytrain to be a commercially autonomous unit.

Despite Brisbane Transport's objections (see chapter A5), the Commission considers that it too should be fully corporatised and divided into commercially autonomous units. Brisbane Transport should be able to compete on an equal basis with private bus operators for the franchises of its service areas.

Queensland has a number of provincial cities of significant size. The Commission's recommendations in the area of *devolution of responsibility to local government* is therefore particularly pertinent to the State. The rapidly growing population in some of these regions (for example, the Gold Coast) underscores the need for regulatory structures which are flexible and can cope with growth.

Some see *congestion and pollution* as potential problems for Brisbane. The Government is developing a plan for Brisbane aimed at reducing reliance on the motor car by, inter alia, upgrading suburban rail and bike networks.

While the need for *road pricing* is not immediate, current trends suggest that it is inevitable. Tolls are already in place on the Gateway Bridge, and the Sunshine and Logan motorways. The Queensland Government indicated in principle support for road use pricing and said:

Road user pricing is under consideration as a longer term strategy together with parking charges and parking restrictions to reduce congestion (Sub. 327, p. 11).

The Queensland Government is preparing legislation that will allow developer contributions to be collected.

WESTERN AUSTRALIA

In its initial submission, the Western Australian Government stressed that Perth was not Melbourne or Sydney and in future could develop differently.

In September 1993 the Western Australian Government announced that it plans to *corporatise* MTT (Perth). Its passenger operations have been separated from its service coordination functions, which have been assumed by the Department of Transport. The Department will be responsible for marketing public transport, letting tenders for service contracts, administering community service obligations, ensuring fare structures are consistent, and protecting service standards. The contracts will be for exclusive franchise areas (and for routes travelling from one area to another, including those through the Perth CBD) with the possibility of 'competition on trunk routes which form the boundary between contract areas'. The MTT will be allowed to tender for the contracts and will be placed on contract with the Department of Transport for non-tendered services as of 1 July 1994 (Sub. 320).

Although many of the details are still being developed, these plans appear to coincide with the broad thrust of the Commission's approach. In the process of developing these details, it is essential that, as is proposed, 'the coordination role of the Department of Transport will be provided in an effective, non-bureaucratic way' (WA Government, Sub. 320, p. 8).

The Western Australian Government agreed with the Commission's conclusion that structural reform of *urban rail* service provision is desirable, but stated that it was yet to determine a detailed approach. On *buses*, the WA Government indicated that, while splitting the MTT into depot-based units is 'an option under consideration', there are potential dangers of diseconomies of scale in scheduling. It argued that 'it was not self-evident that the depot is the most effective basis on which to split up existing operations' (Sub. 320, p. 9).

There do not appear to be significant problems associated with the use of Perth's *road* system. While the Western Australian Government (Sub. 170, p. i) recognised that congestion on the road system is forecast to increase in the future, present congestion or environmental problems do not justify the cost of introducing road pricing. The Western Australian Government does not see transporting urban freight as a major issue, because of Perth's relatively recent development and the way industrial and commercial activity is located with respect to the major regional road and rail networks.

While the WA Government is not planning to implement open access in the *taxi* industry, it is changing how the industry is regulated. To the extent that these changes involve making the Department of Transport (rather than the previous Taxi Control Board) responsible for regulating entry into the industry, this represents a move in the right direction.

SOUTH AUSTRALIA

The new Government in South Australia has announced a program of reform. Many of the elements appear to correspond broadly with the Commission's approach. Key ones include the creation of a Passenger Transport Board responsible for contracting (by competitive tender or negotiation), licensing and promoting passenger transport services. The STA is to be relieved of its policy and planning responsibilities.

The Commission recommends that Adelaide's *bus services* be separated into commercially autonomous units and exclusive franchises offered for them by open tender. The Bus and Coach Association of SA expressed interest in the opportunities this would present. Companies from other states and countries may also tender, as may South Australian firms presently supplying non-urban passenger services or school services, as well as decentralised units of the STA. The Government believed that the staged introduction of competitive tendering in Adelaide can lead to savings of 25 per cent or \$34 million on the STA's operating subsidy (Sub. 317, p. 2).

South Australia has already largely deregulated its *hirecar* industry, and should extend this reform to the *taxi* industry. However, the Government has explicitly ruled out taxi deregulation, in favour of a system of accreditation for all owners, drivers and radio cab companies.

Because of the small size of the system, the early introduction of private operators is likely to be easier in Adelaide than for other *rail and tram* operations. Operational efficiencies may be achieved through institutional reform of the Glenelg tram operation. This may entail either some combination of public and private sector involvement or privatisation of the operation. Both government and private sector responses to this concept were favourable (see chapter B2).

While accepting the role for *road pricing* as a medium term tool, the former South Australian Government stated that Adelaide is unlikely to trial road pricing before successful trials are carried out in Sydney and/or Melbourne, where the problem is seen as more acute (Sub. 144, p. 13).

TASMANIA

The Tasmanian Government supported the broad thrust of the Commission's draft report recommendations. However, it was concerned that the draft report failed to take into account the smaller cities, such as those in Tasmania 'where the opportunities for competition are significantly reduced' (Sub. 328, p. 1).

Applying the reform program to Tasmania implies a continuation of the *corporatisation* of Metro Tasmania and its division into autonomous units in Hobart, Launceston, and Burnie. The Tasmanian Government is in the process of corporatising Metro. However it does not consider significant additional benefits would accrue from segmenting Metro's regional services. (Sub. 328, p. 3)

With respect to competitive tendering out urban *bus services*, the Tasmanian Government suggested that while the concept may be viable in the larger capital cities, 'it is doubtful whether Tasmania has the economies of scale and level of competition to allow this system to work effectively' (Sub. 328, p. 3).

While many studies have shown that significant economies of scale do not exist in urban bus operations, there may well be some areas where the possible market for public transport services is so limited that only one operator could maintain a viable business. If this is considered to be the case in Tasmania, tenders to supply bus services in Burnie, Launceston and Hobart should be sought on a basis which does not preclude bids to run the entire operation.

The high proportion of trips undertaken by concessional travellers suggests that identifying, costing and directly funding *community services* should have a high priority. A first step would be the full reimbursement by government of fare concessions on public transport. The Tasmanian Government is currently reviewing its policy options for the provision of Community Service Obligations (CSOs).

The Hobart City Council commented that Hobart is a city heavily reliant on the private motor car for transport, but saw the potential for smaller, flexible buses perhaps in partnership with taxis to be used for circumferential and/or off-peak services (Sub. 168, p. 2).

During the Commission's visits, several people drew attention to inefficiencies arising out of the involvement of several *levels of government* (see chapter A4). The Hobart City Council noted that at present in Tasmania there is almost no linkage between regional transport planning and urban development administered through planning schemes by councils (Sub. 168, p. 2).

Tasmanian cities have low levels of congestion, so *road pricing* would not seem to be a priority. It may, however, have potential application for individual facilities (for example a new crossing of the Derwent River).

Application of the Commission's *taxi industry* reform options would entail a reversal of recent trends whereby taxi numbers are being reduced in Tasmania. The Tasmanian Government is presently considering reforms to the taxi industry (Sub. 328, p. 3) and the Commission would urge it to closely examine its options.

AUSTRALIAN CAPITAL TERRITORY

The ACT Government acknowledged that urban transport services in the ACT are in need of reform, but noted that significant progress has been made in the short period since self-government. For example, it pointed to innovations in the provision of public transport services, particularly services to people with disabilities, introduction of free parking at major feeder interchanges, construction of bus only lanes, improved ticketing technology and trialing of different vehicle types and more efficient fuels.

The Commission's recommendations in the area of reforming public transport authorities are highly relevant for ACTION *buses*. Indicators in chapter A3 suggest that ACTION receives one of the highest rates of subsidy in the country. This analysis is confirmed by a recent independent benchmarking study undertaken for ACTION (see chapter B3).

The Government has directed ACTION to reduce its annual operating subsidy by \$10 million in real terms over the three years beginning in 1992-93. In the draft report, the Commission felt that the pace was too slow. The ACT Government rejected that view, citing the need to consult with unions and employees in managing the human impact of change. The Commission appreciates this, but is concerned about the burden on the rest of the community of financing the deficit.

As soon as possible, the Australian Capital Territory's bus network should be divided into separate and commercially autonomous units, perhaps along the lines of the present ACTION depots, and exclusive franchises let. The government bus services should be *corporatised*, and permitted to tender for the franchises.

In response to the draft report, the ACT Government stated it does not believe corporatisation is an appropriate model for ACTION and would not introduce franchising because 'the results of benchmarking can achieve much of the aims of opening up services to competition' (Sub. 228, p. 5). The Commission agrees that benchmarking can be a valuable aid in exposing the problems faced by ACTION. However, on its own, benchmarking does not provide any financial incentives to increase cost-effectiveness.

The ACT Government said that it had 'the most extensive network of *bicycle* paths in Australia which, combined with legal footpath riding has created a safe and attractive environment for cyclists' (Sub. 228, p. 10). Indeed, the ACT provides an instructive example of incorporating cycling into planning — all new residential developments are required to construct a pathways system, with links to the ACT network.

The ACT Government has commissioned a major study to examine future public transport options for the ACT. A number of current policies are employed to encourage reductions in the use of private vehicles as the main means of transport. However, *road congestion* is not seen as a major problem in Canberra.

NORTHERN TERRITORY

In its response to the draft report, the NT Government emphasised that ‘the adoption of any recommendations will need to be determined on a regional case by case basis’.

As an example, it noted that increased road user charges to overcome *congestion* were not of immediate concern for the Territory. It also cautioned against national application of air *pollution* measures which ‘may penalise areas that are not subject to ... [high] pollution levels’ (Sub. 310, p.2).

The Darwin *Bus* Service has introduced a number of workplace reforms including the introduction of split shifts, reduction in the number of inspectors, and streamlined maintenance operations. Under the Commission’s proposals, the Darwin Bus Service would be *corporatised* and bus services competitively tendered.

As a relatively dispersed, car-based city, adoption of one of the Commission’s *taxi* reform options would bring significant benefits. Indeed, the NT Government commented that the removal of entry restriction for the hire car and taxi industries ‘could bring identifiable improvements’ (Sub. 310, p. 2).

COMMONWEALTH GOVERNMENT

The Commission’s reform package has relatively few implications for direct action by the Commonwealth Government.

The role of the Commonwealth Government in urban transport is now limited — and appropriately so. The Commission considers that recent general trends for the Commonwealth to withdraw from the field and deregulate road funding are moves in the right direction. Urban transport is essentially a regional and local issue.

The question of continuing to include the urban transit category in the Commonwealth Grant Commission processes is complex and warrants further consideration as to both principle and method. The Commission appreciates that such an assessment would need to take place in the context of a broader review of the entire CGC process.

LOCAL GOVERNMENT

The Commission considers that urban transport systems are best planned at the lowest practicable level of government. It would be impractical to make local government, as it is presently constituted, responsible for planning entire urban transport networks. Local government does have an important role to play in land use, transport infrastructure and service planning. In the words of the City of Melbourne:

Within the current institutional framework, regional authorities, with representation from local government, is a more realistic possibility. An important issue is that there needs to be better integration between transport and land use planning and this should be reflected in the planning machinery. (Sub. 259, p. 4)

The new machinery may require, for example, a cooperative association or body corporate owned jointly by local governments within a region. In a few cases the appropriate region may cross state borders, for example, the Gold Coast-Tweed Heads area on the Queensland-NSW border.

Whatever the urban transport responsibilities of local government, they will have little effect without adequate funding capability. The Commission appreciates that this point impinges on the financial responsibilities of the three levels of government in Australia, a matter which goes beyond urban transport. Yet it needs to be resolved if urban transport is to be delivered more efficiently.

A11.4 The impact of the reform package

The Commission was explicitly asked to report on the social, environmental, and economy-wide implications of its proposed changes.

The package is designed so that, as far as possible, everyone wins. To the extent that reform imposes costs, the Commission has suggested ways of more equitably sharing the burden.

The benefits of the Commission's program of reform are wide-ranging:

- A less costly, more flexible transport system capable of taking people and goods where they want to go. A lower cost system will also mean a reduced burden on taxpayers;
- There would be a more efficient and less congested road network, particularly in larger cities. The costs of congestion in Sydney and Melbourne have been estimated to be around \$4 billion;
- A more efficient road network would particularly benefit Australia's growing urban freight industry and other commercial (non-freight) traffic;

estimated to be approximately five per cent of GDP. Reduced congestion would also lead to lower emissions from vehicles;

- Road funding would be subject to greater scrutiny so decisions would be based on how best to move traffic around our cities;
- Competition and corporatisation of public transport authorities would sharpen suppliers' focus on the needs of customers and improvements in service quality (such as reliability, punctuality, safety and cleanliness) while allowing for the maintenance of coordinated services and integrated ticketing where governments consider it necessary;
- Because reform of the transport industry would be occurring on a broad front, individual operators would be able to enter new markets. The result should be service innovations such as replacing fixed route supply-driven services with more flexible demand-responsive door-to-door services, or higher frequency buses;
- Buses are the dominant form of public transport for Australians. Urban route bus services exist in all of Australia's major cities. Any improvement in the cost and service quality of urban route bus services will have a widespread effect on the ease with which most public transport users travel and the cost of those services to governments in Australia;
- Opening bus service markets to competition, initially through competitively tendering out exclusive franchises and then possibly through some form of open access, will encourage innovation in service delivery and improved service quality. Taking public bus operations alone, if these were franchised out to private operators, the initial savings to State and Territory Governments are likely to be over \$250 million a year. The Commission estimates that such savings would reduce the operating costs of these services by 40 cents for every passenger boarding a public bus (using 1992 figures);
- Reform of the taxi and hirecar industry would benefit users through a greater variety of taxis, more choice when it comes to taxi fares and less waiting time. The Commission has estimated that reforms would benefit the community to the tune of about \$300 million a year. On average, fares could fall by about two dollars a ride. This would particularly benefit lower income groups and people with disabilities who rely heavily on taxis. The impact on taxi licence holders will be cushioned by phasing in reform over a number of years (with the additional possibility of some financial compensation);
- Rather than the current supply-driven provision of public transport, a more open community transport network could provide a more flexible and

- frequent service meeting local community needs at lower costs, particularly in urban fringe areas;
- The potential role of the most environmentally friendly modes of transport, cycling and walking, will be given full consideration in transport and urban planning decisions;
 - While data deficiencies make it difficult to precisely quantify the benefits of rail reform, the information which is available to the Commission indicates that the potential benefits are large. Urban rail authorities are losing about five dollars a trip on average, largely because of excessive costs. Previous studies undertaken for the Commission found that the costs incurred by rail authorities in Australia were on average 36 per cent above international best practice (IC 1991c). While a number of rail authorities (notably CityRail) have since reduced their costs, introducing competition into rail services has the potential to substantially reduce them further;
 - The transport disadvantaged should benefit from the reforms to urban transport services, particularly the relaxation of restrictions on community transport services and taxi operators. For those reforms which may have adverse equity impacts (for example, fare restructuring and introducing electronic road pricing), a system of concessions should be introduced to protect those in need; and
 - Better environmental outcomes should result from testing to reduce the emissions of the mostly poorly maintained vehicles and the introduction of road pricing.

A11.5 Locking in change

Urban transport has an unfortunate history of reviews and inquiries to which there has generally been inadequate response. Without in-built mechanisms to keep up the pressure for reform, there is a real danger that things may drift. Although many members of the public would each benefit from change, vested interests whose fortunes are tied to maintaining the current regulatory environment have proved hard to overcome.

In the Commission's view, constant public exposure of the shortcomings of the current ways of doing things keeps up the pressure for reform. Indeed, the Commission hopes that this report will make a useful contribution in this respect.

The Commission sees the annual performance measurement recently commenced by the Steering Committee on National Performance Monitoring of Government Trading Enterprises as one mechanism for continuing the pressure

for reform. In a similar fashion, improved performance monitoring of road authorities (by the National Road Transport Commission and others) would provide ongoing impetus for reform in this area.

As mentioned earlier, the reform program also needs to allow for adaptations to changing circumstances. This is why structural change embodying a more commercial focus is so important — it provides incentives to continue to adapt to society's changing needs.

PART B

COMPONENTS OF THE SYSTEM

- B1 Urban rail**
 - B2 Trams and light rail**
 - B3 Buses**
 - B4 Taxis and hirecars**
 - B5 Community transport**
 - B6 Cycling**
-

B1 URBAN RAIL

Australia's urban rail systems are characterised by large financial deficits and poor operating efficiency. There is widespread dissatisfaction with the present quality of services. Some rail authorities have taken steps to improve their performance in recent years, including reducing costs and increasing service quality. Recent investments in heavy rail projects highlight the importance of proper investment appraisal.

Rail needs to be made contestable with other modes of public transport. As a minimum, infrastructure and different types of rail services should be operated by commercially autonomous business units. State governments should be open to other reforms of urban rail, including the creation of a separate infrastructure body, and the franchising of rail services.

B1.1 The role of urban rail in Australian cities

There are currently urban rail networks in Sydney, Melbourne, Brisbane, Adelaide, Perth and Newcastle. By far the largest networks are in Sydney, Melbourne and Brisbane. In Sydney and Melbourne, rail services to outer regions, including intercity services from Sydney to Newcastle and Wollongong, and from Melbourne to Geelong, provide links with the inner metropolitan area.

In recent years, passenger numbers on all systems have been adversely affected by recession. Over a longer timeframe, total passenger boardings for the five capital cities have declined slightly since 1969. However, the trend in patronage has varied considerably amongst cities. Patronage in Melbourne and Adelaide has fallen considerably, while Brisbane has increased. In Sydney, patronage has recovered from low levels in 1979 to be now slightly higher than its 1969 level.

Table B1.1 presents a number of operating statistics for Australian urban rail networks.

Rail plays a major role in urban passenger transport systems, particularly in the larger cities. In 1986, rail journeys comprised more than one-half of all public transport journeys to work in Sydney, Melbourne and Brisbane. In Adelaide and Perth, rail journeys accounted for 20 to 25 per cent of such journeys.

Table B1.1: **Main characteristics of Australia's urban heavy rail systems 1991-92**

<i>Urban rail network</i>	<i>Route kms</i>	<i>Vehicle kms</i>	<i>Passenger boardings</i>	<i>Passenger kms^a</i>	<i>No. of employees</i>	<i>Estimated value of assets</i>
		<i>(millions)</i>	<i>(millions)</i>	<i>(millions)</i>		<i>(current \$ billion)</i>
Sydney (CityRail) ^b	1 700	182	244	4 380	10 594	1.8 ^c
Melbourne	330	60	109	1 470	6213	1.9
Brisbane	450 ^d	36	40	770	2588	1.2 ^c
Adelaide	120	7	9	170	782	0.3
Perth ^e	63	3	10	120	529	0.3
Total	2 663	288	413	6 910	20 795	5.5

a Based on an estimate of average trip length.

b CityRail provides rail services in the Sydney metropolitan area, as well as outer urban areas extending to Newcastle and Wollongong (route-kms for the Sydney metropolitan area amount to 457 km).

c Urban rail assets assumed to represent one-half of the reported value of rail authority's total assets.

d Data refers to 1990-91.

e Excludes the Perth northern line (opened in March 1993). The northern line adds 29 route-kms to the Perth network. Based on a survey in August 1993, passenger boardings on the northern line are estimated to total around 4.5 million over a whole year.

Sources: Steering Committee on National Performance Monitoring of GTEs 1993

CityRail 1993, p. 5

Australian City Transit Association 1993

Queensland Auditor-General 1992, p. 118

NSW Auditor-General 1993, p. 145

Commonwealth Grants Commission data

Most urban rail travel is undertaken to and from work during peak times. For example, the South East Queensland Passenger Transport Study in 1990 found that one-half of all rail travellers were commuters, and that more than 60 per cent of rail trips to the central business district were for work purposes (Bornhorst Ward Veitch 1990, p. 25). There is also significant travel on concessional fares, particularly at off-peak times. According to the Queensland Government, 35 per cent of passengers in the Brisbane area travel on concessional fares.

Urban rail is most effective when moving large numbers of people over fixed routes at set times, such as with work trips to the central business district. To get the best use out of their rail networks, operators need to provide quality rail services which exploit these strengths.

However, due to the large fixed costs associated with providing rail infrastructure such as track, signalling and stations, where passenger volumes are low, the average cost per passenger-kilometre is relatively high compared with other modes. Hence, care needs to be taken to ensure that rail networks do not place an unreasonable burden on taxpayers.

Most of the freight carried on urban rail networks is concerned with country or interstate traffic. Relatively few intra-urban freight deliveries are made by rail; most is carried by road transport.

The role of rail in terms of urban form and the environment is discussed in chapters A1 and A10 respectively.

B1.2 Institutional arrangements

State governments closely direct many aspects of rail operations. Rail authorities have little control over investment decisions, fares, frequencies, destinations and times of services as governments either directly make decisions or regulate these aspects of operation.

- In NSW, the urban rail network is operated by CityRail, which is a division of the State Rail Authority (SRA). CityRail also provides electrified passenger services between Sydney and Newcastle and additional local non-electrified services within the Newcastle area. It also operates an electrified service between Dapto and Sydney.
- In Queensland, the urban rail network is operated by Citytrain, a division of Queensland Rail.
- The Public Transport Corporation (PTC) provides rail services within the Melbourne metropolitan area under the trading name of 'The Met', and some passenger rail services throughout Victoria under the trading name of 'V-Line'. Private operators also provide some country passenger services.
- In Adelaide, rail services are currently provided by the State Transport Authority. The South Australian Government has drafted legislation under which urban rail services may be provided by Transit Adelaide and/or another operator.
- In Perth, Westrail provides urban rail services under contract to the Department of Transport.

In NSW, a Government Pricing Tribunal was established in 1992 to review charges for a number of government services, and makes annual recommendations on the maximum level of public transport fares. The Tribunal considers submissions from CityRail.

Rail authorities do not borrow directly from the market. In many cases, debts which relate to the operation of railways are transferred to the state treasuries.

Recent developments

Recently, governments have turned their attention to improving the performance of rail services, and have introduced changes to make rail authorities operate more along commercial lines.

Although the five urban rail authorities now all have boards, these have little autonomy in decision-making. The board of the State Rail Authority (SRA) — which has the greatest autonomy — can make investments of up to \$1 million without prior Government approval. Most rail authorities have contracted out some non-core services, such as maintenance, cleaning and catering, and have reduced staff in recent years. While nearly all rail authorities have announced their intention to move to driver-only trains, few have actually done so. Most rail authorities have introduced, or plan to introduce, multiskilling and part-time staff.

There are separate business units for rail passenger and freight services within the SRA, Queensland Rail and the PTC. There is also a separate business unit for infrastructure management within the PTC. Although there is nominally a separation of rail activities into these groups, separate accounts have hitherto not been available for urban rail operations. The rail authorities are working towards improving their accounts. There is a CSO contract between CityRail and the NSW Department of Transport. As part of the corporatisation program announced by the Queensland Government in May 1993, CSO contracts are to be negotiated for Queensland Rail.

B1.3 Assessment of performance

The developments in recent years are encouraging. Yet it has become obvious during this inquiry that the performance of urban rail services needs much more improvement to provide a quality service which is affordable to the community.

This assessment is consistent with the 1990 report by the Railway Industry Council, which found that the rail industry in Australia needed 'to give greater priority to quality of service and to adopt a more customer oriented ethos' (Railway Industry Council 1990b, p. 8).

In the past 20 years or so, there has been a fall in the share of rail in the urban transport task. Rail's share of passenger-kilometres on all urban public transport in Australia is estimated to have declined from 62 per cent in 1971 to around 55 per cent in 1991. Demand for rail travel has weakened as a result of increased competition from cars (due to advances in technology and increases in car

ownership), and a change in the pattern of travel since the rail lines were built. Action for Public Transport considered that until 1985:

The move away from the CBD to major centres, and from inner zone to outer zone employment generally, can explain most of the rail decline as accessibility by rail is reduced (Sub. 42, Paper A2, p. 1).

Australian cities tend to have much larger rail networks relative to their population size and density compared with other industrialised countries (IC 1991c, Vol. I, p. 187).

As discussed in chapters A8 and A10, subsidisation of urban rail operations is not the best way of achieving social and environmental objectives. Subsidies intended to assist the poor and disadvantaged in the community have been poorly targeted. Rail deficits are a significant contributor to the overall deficit on urban public transport, and are rightly a cause for concern.

Availability of data

While some Australian railways have compiled detailed information regarding the costs of operating individual segments of the network, such data are not generally made public. The accounting systems of the SRA (NSW) and Queensland Rail cannot yet isolate the value of assets pertaining to urban rail operations.

Some of the information that is available is not comparable between systems. For example, rail systems use different definitions of costs and revenues. Some rail authorities include in their revenues community service obligation (CSO) payments for concessional fares, while others may not distinguish between concessions and the general government subsidy for recovery of operating costs.

Some rail authorities have noted the difficulty of making comparisons between rail systems. For example, at the draft report hearing, Westrail said that it is difficult to compare the performance of rail operations in Perth with that of much larger systems such as Sydney's, without making an allowance for different operating characteristics (DR transcript, p. 45).

Recorded operating deficits, as published in the annual reports of the rail authorities, can significantly underestimate the full operating deficit, due to the exclusion of depreciation, interest payments on transferred debt, payroll tax and unfunded liabilities for superannuation of rail employees.

It is difficult for the community to assess with any precision how well their rail services are performing. In recent years, governments and rail authorities have made public an increasing amount of financial and operating statistics. Nonetheless, published information is still inadequate.

Cost recovery

One measure of performance is the level of the financial deficits incurred in providing urban rail services. This section looks at the operating deficit, excluding capital outlays which can vary considerably from year to year and make comparisons difficult.

The Commonwealth Grants Commission (CGC) has compiled estimates of the operating deficits for urban public transport operations in Australia, which exclude government CSO payments for concessional fares, and take into account debt interest, superannuation and payroll tax, and government subsidies for private buses (see CGC 1993, p. 90). However, the CGC does not include depreciation, or local government subsidies for public transport, nor does it provide a breakdown for individual modes.

Based on data provided by the CGC and the Australian City Transit Association, the Commission has estimated the operating deficits of urban rail operations in Australia. These estimates totalled some \$2 billion in 1991-92. The deficit for urban rail compares with that for all urban public transport of the order of \$3 billion in 1991-92. The urban rail deficit represented an average subsidy of the order of \$5 per passenger boarding in 1991-92. Comparable estimates for 1992-93 cannot be made due to gaps in the available data.

Table B1.2 shows the percentage of operating costs covered by fare revenues.

In 1992-93, of Australia's five urban rail networks, Sydney achieved the highest farebox cost recovery, followed by Melbourne and Brisbane; cost recovery on these three networks increased between 1986-87 and 1992-93. Cost recovery in Adelaide and Perth is considerably lower than the other three systems, and declined between 1986-87 and 1992-93.

Urban rail systems in other countries differ from those in Australia. For example, some urban railways overseas have a significant amount of passenger traffic travelling on subway systems, whereas in Australia underground railways are a relatively small component of the urban network. The definition of revenues and expenditures may differ between rail authorities (for example, there may be differences in the way depreciation and interest are treated). Notwithstanding the difficulties of comparison, it is useful to note that there are several examples of rail systems overseas which recover more of their operating costs from fares. For example, cost recovery (from fares and other commercial revenue) is 90 per cent for the Tyne and Wear Metro, 74 per cent for the Washington Metro, and 50 per cent for rail services in Zurich — see appendix G.

Table B1.2: **Recovery of operating costs from fares: Australian urban rail^a**

	1986-87		1991-92	1992-93 ^b
	<i>Farebox recovery only</i>	<i>Farebox recovery plus government payments for fare concessions^c</i>	<i>Farebox recovery only</i>	<i>Farebox recovery only</i>
			(%)	
Sydney (CityRail)	na	34	47	46
Melbourne	na	28	32	28
Adelaide	19	27	12	12
Brisbane	na	26	32	25
Perth	15	23	9	10

na not available

a Inclusion of non-fare commercial revenues would increase 1992-93 cost recovery by 0-8 percentage points.

b Based on preliminary data.

c The estimates which include government payments for fare concessions are indicative only because each system uses a different definition for such payments.

Sources: Railway Industry Council 1990, p. 13
IC 1991c, Vol. I, p. 190
Australian City Transit Association 1993, p. 49
Preliminary data provided by ACTA

Cost recovery by distance and time of travel

Overall cost recovery ratios, such as those in table B1.2, can mask significant variations in cost recovery across the network. The measure of cost recovery for individual services depends on how costs are allocated to individual services, and on the fare structure. This issue is discussed further in chapter A7.

Productive efficiency

Another factor contributing to the low levels of cost recovery is the cost of providing rail services. Productivity estimates provide an indication of how well rail authorities are using their inputs. These compare a physical measure of output (such as passenger boardings, vehicle kilometres) with a physical measure of input (such as the number of employees).

Partial measures of productivity

Figure B1.1 shows passenger boardings per employee and vehicle kilometres per employee for urban rail (it is not possible to report on the trends in

passenger kilometres per employee because information on passenger kilometres over time is not available for all of the rail authorities).

Passenger boardings per employee increased considerably in Sydney between 1987-88 and 1991-92, before declining slightly in 1992-93. Over this period, there was an overall increase in Adelaide, but little overall change in Brisbane. In Melbourne, there was a major increase in this measure between 1990-91 and 1992-93. In Perth, passenger boardings per employee fell between 1987-88 and 1990-91, before recording significant increases in 1991-92 and 1992-93 (interpretation of the last two years is complicated by the modal shifts associated with electrification and the inclusion of the northern rail line).

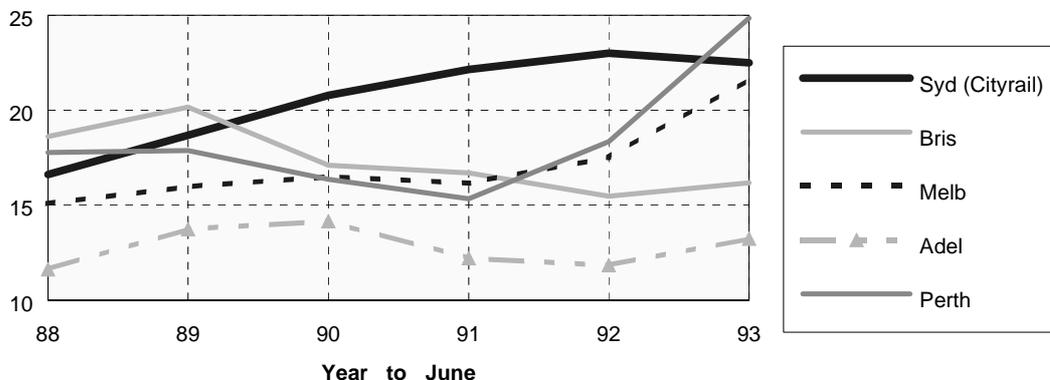
Vehicle kilometres per employee increased in Sydney, Melbourne and Perth between 1987-88 and 1992-93.

The improved performance in Sydney on both measures between 1987-88 and 1991-92 was due to a fall in the number of employees (down 27 per cent), with rail passenger boardings and vehicle kilometres remaining unchanged. In 1992-93, rail employees in Sydney decreased further, but passenger boardings also fell. The improvement in labour productivity in Melbourne in the last two years has also been due mainly to a fall in the number of rail employees (down 27 per cent).

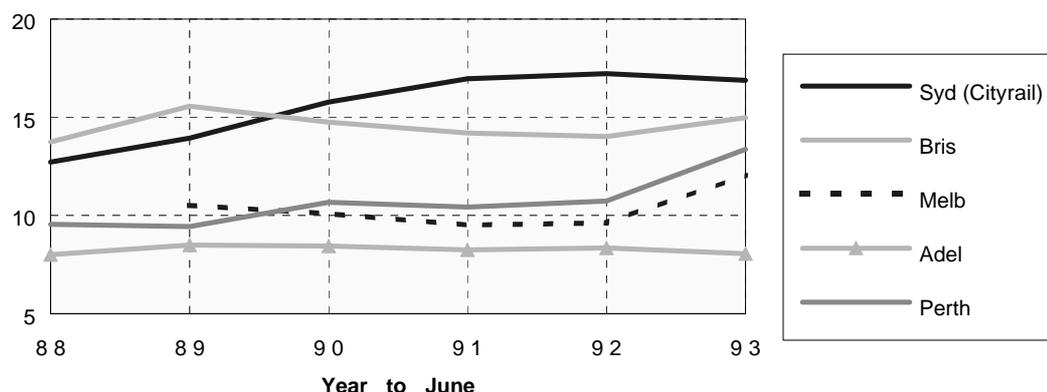
In contrast, over the period to 1991-92, there was little overall change in labour productivity in Adelaide and Perth, despite a fall in employee numbers. In Perth, there was a large increase in rail passenger boardings and vehicle kilometres in 1992-93, but also an increase in the number of rail employees (see below for a discussion of overall productivity trends in Perth).

Figure B1.1: Selected productivity measures for urban rail

Passenger boardings per employee ('000s)



Vehicle kilometres per employee ('000s)



Sources: Steering Committee on National Performance Monitoring of GTEs 1993
Annual reports, and other information provided by the rail authorities

Total factor productivity

Total factor productivity, which compares an index of output with an index of aggregate inputs, provides a more complete picture of productivity than partial measures.

The Commission's study of total factor productivity (see appendix D) found that:

- between 1986-87 and 1992-93, the productivity of the SA State Transport Authority's urban rail operations declined by around nine per cent based on passenger kilometres as the output measure, and around 34 per cent based on seat kilometres. This reflects the poor underlying performance of rail, as well as policy changes that encouraged the use of buses in competition with rail;
- the productivity of rail services in Perth increased over the same period (around three per cent based on passenger kilometres and six per cent based on seat kilometres). Rail passenger kilometres increased as a result of electrification and the inclusion of the northern rail line (from March 1993), but so far rail productivity has not increased much beyond the level of the late eighties, due to an accompanying increase in inputs. The patronage on the new northern rail line reflects both the substitution of bus services by rail, as well as some new passengers who previously travelled by car;
- between 1990-91 and 1992-93, the productivity of the PTC's passenger rail operations in Melbourne increased (around nine per cent in terms of passenger kilometres and around four per cent in terms of seat kilometres).

The difference in results is due mainly to an increase in the load factor during the three-year period; and

- the productivity of urban rail services is generally higher in Melbourne than in Adelaide or Perth.

International comparisons of productivity

In its work for the Commission's 1991 Report on *Rail Transport*, Travers Morgan found that the costs of urban passenger rail systems in Australia were on average 36 per cent higher than international best practice, with a differential in costs observable across most areas of urban rail operations (IC 1991c). Since that study a number of rail authorities (notably CityRail) have reduced their costs, particularly labour costs.

On the basis of cost per passenger journey, and passenger journeys per employee, CityRail compares favourably with Japan Railways East, British Rail's Network South East, urban rail operations in Paris, and three operators in the United States (CityRail 1993, p. 12). However, cost recovery and asset productivity are relatively low compared with these other operators.

Management and work practices

Chapter A3 discussed a number of examples of inefficient management practices and excessive corporate overheads in public transport. Although these related mainly to the operation of buses, poor management practices also exist in urban rail operations. Poor management is one factor which leads to low productivity. In many instances, government policies on public sector employment act as a constraint on the good management of rail authorities.

The need for organisational structures and management practices to reflect the requirement to hold management accountable for policy implementation and system performance was emphasised by the Railway Industry Council in its 1990 report (1990b, p. 8).

In some cases, there is union resistance to workplace reforms. For example, the Public Transport Union in Queensland opposes the introduction of driver-only operations (PTU, Initial hearing transcript, p. 373).

Various work practices restrict the ability of operators to make efficient use of staff. For example:

- according to the Western Australian Government, Transperth's train drivers are required to drive within a daily/weekly kilometre limit, and a crib arrangement requires all staff to go to a central location for their rest break (Sub. 170, p. 38);

- in CityRail, a rostering limitation requires that a driver can only travel along the eastern suburbs railway twice in one shift (Initial hearing transcript, p. 613);
- a rostering limitation for the PTC requires that no electric train drivers be allowed to go from a tunnel into daylight more than four times in a shift (Victorian Government, Sub. 186, p. 20). There are also restrictions on drivers operating split shifts; and
- in Queensland Rail there is inflexibility which restricts under-employed staff in one product group being transferred to another product group where they are needed (Initial hearing transcript, pp. 380-381).

Service quality

For urban rail systems to be viable, they need to provide attractive services which meet the needs of passengers. During the inquiry, many participants expressed dissatisfaction about the present quality of urban rail services (see box B1.1). The main issues of concern were safety, reliability, availability of information, and frequency of services.

Punctuality

As discussed in chapter A3, of the rail authorities for which data are available, Perth scores best in terms of punctuality — ‘on-time running’, or the percentage of trains arriving within three minutes of schedule, was around 95 per cent in 1992-93. On-time running in Sydney has also improved considerably since 1988-89, to be around 92 per cent in 1992-93. In Melbourne on-time running deteriorated between 1987-88 and 1989-90, but improved again in the period to 1991-92. On-time running for trains in Brisbane was low in 1991-92, at 84 per cent. On-time running of Melbourne’s trains is better during off-peak than peak times (PTC 1993, p. 14).

Service frequency

As discussed in chapter A3, the frequency of rail services is higher during the peak than the off-peak. Frequencies tend to be lower in Adelaide and Brisbane than in Sydney and Melbourne, as would be expected given that the population density and hence the passenger traffic is much less in Adelaide and Brisbane. Despite relatively low population densities and passenger numbers, Perth runs a service as frequent as that in Sydney and Melbourne. For several cities, services in outer metropolitan areas are less frequent than in inner metropolitan areas.

Box B1.1: Perceptions of urban rail services

The NSW Urban Environment Coalition (Initial hearing transcript, p. 840) said Sydney's rail system has been continually run down over 30 years, although there have been some minor improvements over the last two to three years.

The Public Transport Users Association (Sub. 96, 'Greening Melbourne', p. 19, 22) said that in Melbourne, frequencies are usually unattractive, especially outside peak hours, and are becoming steadily worse.

Many participants stressed the need for better integration of different modes of public transport. For example, the NSW Combined Pensioners and Superannuants (Initial hearing transcript, p. 884) noted the poor coordination of train, bus and ferry services in Sydney.

During the inquiry, several user groups stressed the need for better information on public transport services, including urban rail. Rail 2000 said:

The communication and information issue is a very real issue about our public transport system ... and it certainly is the case in other states. (Initial hearing transcript, p. 90)

Many groups expressed concern at the risk to personal safety on trains. For example, the Western Australian Municipal Association said that:

People in Western Australia are reluctant to use the much improved electric train service, because of perceptions about safety. This results from adverse publicity over the years to hooliganism and vandalism on trains, especially at night. (Sub. 73, p. 3)

Several groups attributed problems with safety to the reduction in staffing.

The Inner Metropolitan Regional Association said that:

Melbourne has got probably the best public transport infrastructure for a city of its size in the world, but it is not being used to anything like its capacity ... (Initial hearing transcript, p. 1047).

Other aspects of service quality

In their response to the draft report, some participants commented that there are aspects of service other than punctuality and frequency, such as comfort, safety and convenience, which are important to passengers. The Commission agrees. However, it is difficult to obtain indicators for these factors which can be used to compare different operators.

Investment and funding

Investments in rail infrastructure usually involve large sums with long pay back periods. Many of the current problems in operating Australia's urban railways

can be attributed to poorly directed investments. Apart from the waste of initial outlays, inappropriate investments (for example, expanding the rail network where urban rail is not economically viable) can lead to higher than necessary maintenance costs in later years.

As noted by CityRail, some rail lines have been kept open even when they are not economically viable:

A major problem with railways is that many lines and services which are no longer viable have not been closed or discontinued, thereby reducing the ability of the remainder of the rail system to operate efficiently (Sub. 46, p. 5).

Investments in rail infrastructure

The total amount of investments in Australia's urban rail systems (including both extensions to and upgrading of existing systems, and purchase of rolling stock and equipment) increased in real terms by around 34 per cent between 1990-91 to 1992-93 — (see table B1.3).

Most of the increase was due to completed or ongoing work on electrification of the rail networks in Perth (\$150 million total cost), electrification in Brisbane, construction of the Perth northern line (estimated total cost \$263 million), extensions to the networks in the Brisbane-Gold Coast region (estimated total cost \$240 million), and ongoing work in Sydney. Urban rail projects currently being considered include a rail link for Perth's south western suburbs, with an estimated cost of \$370-570 million (WA Government, Sub. 170, p. 71), and a rail link from Sydney's central station to the airport.

Table B1.3: Australian urban rail investment 1990-91 to 1992-93

<i>City</i>	<i>1990-91^a</i>	<i>1991-92^a</i>	<i>1992-93 (est)</i>	<i>Average</i>
		<i>(1992-93 \$ million)</i>		
Sydney (CityRail)	390	410	485	428
Melbourne	77	85	73	78
Brisbane	36	41	96	58
Adelaide	13	22	31	22
Perth	68	92	95	85
Total	584	650	780	671

a Inflation adjustment based on non-farm GDP deflator.

Sources: BTCE 1992a, p. 28 (the data is based on a survey of the rail authorities)
ABS 1993c

Investment decision-making and funding

Some participants in the inquiry pointed to the increase in rail investments in other countries in recent times as evidence that further investments in heavy rail are appropriate for Australia. However, a number of factors need to be carefully considered, including likely passenger demand, and operating deficits. The community's willingness and capacity to pay needs to be fully taken into account in decisions on whether to continue to provide particular services or invest in new rail lines or equipment.

It may in fact be more appropriate to redirect, rather than increase, investment in rail facilities. As noted by the NSW Treasury (Sub. 177, p. 8), the Booz, Allen Hamilton review of the SRA in 1989 found that investments in the past were directed to high profile areas and away from low profile projects such as track renewal, signalling and station improvements. The neglect of necessary, but low profile, investment led to SRA's signalling equipment becoming seriously run down and large outlays were necessary to stop the system from becoming unsafe.

During the inquiry, doubts were raised about the decision-making process for urban transport infrastructure, including rail investments. For example, Messrs Burt, Hill and Walford cited several examples of poor rolling stock in Melbourne's rail system, where prototypes were not subjected to proper testing prior to acquisition (Sub. 98, p. 11).

In Australia, there have been relatively few cases of the private sector contributing to the costs of rail infrastructure, either directly, or indirectly via local government contributions. Examples include the Melbourne City Rail loop, and the Toowong station in Brisbane. In the inquiry, many participants supported some form of value capture as a means of improving the performance of rail.

There is a need to improve investment appraisal and to consider a broad range of options for funding rail infrastructure (see chapter A7).

B1.4 Options for improving performance

The low cost recovery of Australia's urban railways means that, without major reforms, governments will have to continue making large contributions through direct subsidies if urban rail operations are to be maintained. Taxpayer subsidies provided to urban rail operations involve significant costs, and result in higher budget deficits, which may have to be addressed through increased taxes or a reduction in other government services. There must be major improvements in

productivity, cost recovery and service quality for the viability of urban rail systems to be secured.

In its 1991 Report on *Rail Transport* the Commission outlined a number of reforms, which are still relevant to urban rail operations in Australia. Most of these related to the corporatisation of government rail authorities. However, progress in implementing these reforms has been slow. There is a need to speed up the pace of administrative reforms, and to consider further the potential for structural reform of Australia's urban rail operations.

Administrative reforms

The main elements of the approach to corporatisation outlined in chapter A5 are a clear statement of commercial objectives, accountability, and autonomy in day-to-day operations. The Commission recommends that the measures now being undertaken by rail authorities in this direction be continued and extended. In conjunction with cost cutting and a restructuring of fares, if not preceding them, there must be a stronger customer focus and improved service quality.

Structural reform

The introduction of competition into urban rail is complicated by the issue of natural monopoly, which is usually considered to characterise the operation of rail infrastructure. For example, studies of British Rail indicate that the fixed costs represent 50 to 80 per cent of the overall cost of infrastructure provision (Nash and Preston 1993, p. 87). The evidence for natural monopoly in other aspects of the railway industry, for example, operating trains, administration and maintenance, is less clear. Even if part of the rail system is a natural monopoly, certain aspects may be delivered more efficiently if opened up to competition.

Structural reform of urban rail needs to be tailored to retain the benefits of vertical integration in those areas where there is natural monopoly, while at the same time providing scope for increased competition in other areas. If there are problems in introducing competition in rail service provision, significant pressure can be placed on rail authorities to improve their efficiency by allowing other modes of transport to compete with rail (see chapter A6).

There are a range of options which state governments should consider when deciding how to reform their rail authorities. Because of the differences between rail authorities, and between the cities in which they operate, it is unlikely that the same approach to structural reform would be appropriate in all States.

Options for structural reform include:

1. separation of different types of rail traffic (for example, urban passenger, country passenger, and freight) into autonomous business units or different organisations;
2. separation of different urban passenger services (for example, distinguished by lines or geographical regions) into autonomous business units or different organisations;
3. separation of infrastructure (such as track, signalling, and stations) from services, into either autonomous business units or completely separate government trading enterprises (GTEs); and
4. franchising passenger services on part or all of the existing network, with infrastructure remaining under the control of a government monopoly.

These options are not all mutually exclusive. For example, franchising passenger services (option 4) can take place with or without firstly creating separate GTEs for infrastructure and services (option 3).

Option 1: Separation of urban passenger services from other rail traffic

As noted above, the accounting systems of the rail authorities usually do not distinguish clearly between different types of rail traffic, such as urban passenger, country passenger and freight. There would be benefits in a clearer separation of different types of rail traffic into autonomous business units, as it would improve accountability, and encourage increased efficiency by providing a sharper business focus for each of these activities. Also, as was noted in the Commission's 1991 Report on *Rail Transport*, an assessment of the benefits and costs of competition cannot be made without a knowledge of the costs associated with different parts of the overall operation. Accurate costing is also necessary to enable the appropriate determination of CSO payments. However, for these benefits to be realised there must be an actual (rather than just a nominal) separation of units. In particular, separate financial accounts should be provided for each unit, preferably audited by an independent body.

A further question arises as to whether different types of rail traffic ought to be provided by completely separate GTEs. An important issue is the possibility of cross-subsidisation of uneconomic services (for example, urban passenger), which might mean that the costs of providing other services (for example, rail freight) are higher than otherwise. As noted by Mr Easton:

The identification and publication of costs and revenue for each major activity, at least, is essential to demonstrate that no element of cross-subsidisation between major traffic is entailed (Sub. 49, p. 1).

The operation of different types of rail traffic within a single organisation increases the risk of cross-subsidisation. The Commission is unaware of any evidence that there are significant economies of scope in conducting different rail services within the one organisation.

The benefits of separating out different types of rail traffic have been accepted by most rail authorities in Australia which have moved as far as separate business units. However, separate accounts are often not available.

In Adelaide, urban rail services are already operated by a separate authority from that providing country freight and interstate passenger trains.

In the State Rail Authority of NSW, following the recommendations of the 1989 Booz Allen Hamilton study, different types of rail traffic are now operated by autonomous business units (CityRail, Sub. 256, p. 1).

In Queensland Rail, there are currently three business units, one of which is a passenger group that covers both urban and non-urban services. The Queensland Government is of the view that a further separation of the existing structure to allow urban passenger services to be a separate group would not necessarily lead to significant benefits and may result in a loss of economies of scale (Sub. 327, p. 6).

In Melbourne, rail passenger and freight services have been reconstituted as separate business units of the PTC (Victorian Government, Sub. 319, p. 17).

Some overseas railways are organised along the lines of separate business units for different rail traffic. For example, there are separate units within British Rail for commuter traffic, intercity passengers, and freight. In Germany, Deutsche Bahn (German Railways) is being divided into separate business units for track, passengers and freight. A similar approach is being followed in some other European countries (see appendix G).

The question of whether different modes of public transport (trains, trams, buses and ferries) ought to be provided within the one organisation is discussed in chapter A6.

Option 2: Separation of urban passenger operations into geographically-based units

A further option is to divide existing urban passenger operations into smaller, geographically-based autonomous business units or GTEs.

Possible reasons for creating geographically-based units include providing a stronger local customer focus, and facilitating the introduction of new operators or owners who might find it more attractive to deal with smaller, locally-based

operations. Such an arrangement might also make it easier for local governments to participate in the funding and operation of local rail services.

British Rail is organised along the lines of business units which are responsible for providing services over particular geographical areas. In Japan, beginning in 1987, the government-owned Japan National Railway was split into subsidiaries which provide services differentiated by geographical region. In Germany, autonomous regional units are being created for passenger rail services.

CityRail is moving toward the division of its operations into geographically based units, with individual line managers responsible for three broad regions — Northwest, Illawarra and South. It said that:

The aim is to improve efficiency and control by designating responsibility for a specified section of line with one manager and by attempts to disaggregate costs and benefits by line section (Sub. 256, p. 1).

The Victorian Government (Sub. 319, p. 17) considered that while there are benefits in subdividing Melbourne's rail system into radial sectors — such as assisting better accountability and introducing a degree of contestability — further work would be needed to compare the costs of the new operational and cost-sharing arrangements with the potential benefits.

The Queensland Government considered that separating urban passenger operations into geographically based units is unlikely to be a feasible option for Brisbane (Sub. 327, p. 7), on the basis that such a move would reduce economies of scale and scope, and would not necessarily increase the opportunity for local government participation, since the Brisbane City Council already plays a dominant role.

The ACTU/Public Transport Unions said that there are benefits in maintaining the metropolitan-wide planning and integration of rail services, including economies of scale relating to infrastructure construction and maintenance, administration, service training, marketing and information, and staff training, and better coordination of services (Sub. 271, p. 18).

Option 3: Separation of services from infrastructure

Under this option, operating services would be separated from controlling and maintaining the infrastructure. This would make the cost of operating infrastructure much clearer, including the cost of running trains on congested lines, and hence give the infrastructure provider a more commercial focus. It would also increase the pressures on rail authorities to maximise returns on existing infrastructure, and create the institutional framework for possible introduction of new operators. Separation may involve creating either autonomous business units to be responsible for each function, or two separate

GTEs, one for infrastructure and the other for providing services. As with the two previous options, it is important that there be an actual (rather than just a nominal) separation of units, with separate financial accounts.

The Commission's 1991 Report on *Rail Transport* recommended creating separate business units with separate sets of accounts for infrastructure and services. While the rail authorities have recently taken steps in this direction, the divisions are not yet distinct, financial accounts are not clearly separated, and the separate business groupings do not have full commercial autonomy.

A separate business unit responsible for the maintenance, management and development of public transport infrastructure has been established within the PTC (Victorian Government, Sub. 319, p. 17). It will contract on a user-pays basis with private operators or other PTC business units.

The NSW Treasury (Sub. 311, p. 2) supported in principle the creation of separate business units for rail infrastructure and different types of rail traffic, and noted that this accords with the direction the NSW Government has been taking. CityRail said that there would be no advantages in separating infrastructure from services within the Sydney metropolitan area, on the basis that it remains the predominant user of the network, and the close functional relationship that exists between infrastructure and operations (DR transcript, p. 548).

The Queensland Government (Sub. 327, p. 7) does not support the separation of services from infrastructure.

The ACTU/Public Transport Unions (Sub. 271) and the Town and Country Planning Association (Sub. 283, p. 10) supported the idea of separate autonomous business units for rail infrastructure and services.

A further step could be to create two completely separate GTEs, one responsible for maintaining rail infrastructure and the other for providing rail services.

There are some overseas examples of structural separation (see appendix G). In Sweden, a separate infrastructure organisation was created in 1988, mainly with a view to providing equal treatment for road and rail transport, but also with an aim to introducing new operators. In the United Kingdom, as part of the reform of the rail industry a separate organisation, Railtrack, is being created to manage infrastructure while tenders will be called for the operation of services currently provided by British Rail. In Switzerland, Germany and some other European countries, separate business units have been created within the national railways to manage infrastructure, and moves towards creating a separate infrastructure body are being considered. The impetus for reform in Europe stems partly from

a European Union directive which requires member countries to provide access to its tracks for rail operators from other member states.

Separate GTEs would have the following benefits:

- allow for day-to-day autonomy in commercial operations;
- improve the clarity and focus of the organisation's objectives;
- ensure genuine separation of functions and accounts;
- increase the pressure to maximise returns on existing infrastructure, since revenues and costs would be the direct responsibility of a separate infrastructure GTE, rather than being submerged within a larger bureaucratic structure;
- facilitate the introduction of new operators. Without a complete separation of infrastructure from services, there is a conflict of interest which could deter some potential operators from tendering for service franchises; and
- make it simpler for the government to regulate the industry (see below) where there is a large number of existing or potential new operators.

On the other hand, there are potential costs in creating a separate infrastructure GTE. These include the higher transaction costs associated with an increase in the number of contractual arrangements, and possible loss of some economies of scope (for example, where the design of rolling stock, stations and tracks needs to be closely coordinated).

A discussion paper presented by Queensland Rail in September 1993 described at some length the advantages in maintaining a vertically integrated structure for rail operations (see O'Rourke 1993). A principal argument is that there is a high degree of inter-dependence between the infrastructure used by a railway and its operational capability and performance, which extends to both day-to-day operations as well as longer-term investment decisions. The discussion paper also argues that the issues which are now resolved by the exercise of managerial authority (such as access rights to infrastructure and stations, procedures for timetabling, and appropriate track and signalling standards) would need to be dealt with by way of explicit contracts, thus resulting in additional costs of administration and time spent.

In their response to the draft report, the ACTU/Public Transport Unions stressed the benefits of vertical integration, drawing mainly on the arguments in the Queensland Rail discussion paper. They said that:

Vertical separation of infrastructure from operations would effectively recreate the old engineering centres as a separate empire, with even more power and independence from the operating businesses than they had under the traditional railway structures; and more distant from the real users of the railways, the customers (Sub. 271, p. 17).

However, if GTEs — including organisations responsible for rail infrastructure — are required to operate within a corporatised environment, there would be an incentive to maintain a close link with the operators who use the infrastructure and to provide services of a high quality.

CityRail considered that a separate infrastructure authority would have less incentive to reduce maintenance costs than under existing arrangements (DR transcript, p. 548). It added that the concept of a separate infrastructure authority generally has greater applicability further away from the city, such as for the lines going to Newcastle and the Blue Mountains (DR transcript, p. 548). Westrail also considered that practical difficulties would arise in establishing contractual relationships if operations and infrastructure were run by different organisations (DR transcript, p. 33).

The Victorian Government said that one of the major issues which the PTC will need to address is ‘the long term viability of retaining both infrastructure and service delivery units within the same organisation’ (Sub. 319, p. 17).

Where the separation of operations from infrastructure leads to difficulties, it may nonetheless be possible to tailor the reform of urban rail in such a way that potential new operators have a degree of control over the management of infrastructure. For example, it might be possible to allow the operator to have a franchise to operate both passenger services and to manage certain parts of the infrastructure. This type of arrangement is generally known as a ‘vertically integrated franchise’. One disadvantage however, is that vertically integrated franchises create problems in terms of access for other operators to the same section of track, and also of maintaining through running (White 1993, p. 9). In the United Kingdom, vertically integrated franchises are being considered for some potential new operators of rail services currently provided by British Rail.

Whether it is appropriate to create separate GTEs for rail infrastructure and services depends in part on the ultimate course which the structural reform process is likely to take. For example, in New Zealand, the government-owned New Zealand Rail Ltd has been sold as an ongoing business enterprise, after several years of operating within a corporatised environment, without any structural separation. Nonetheless, the creation of a separate GTE for infrastructure does not preclude the later sale of part or all of that infrastructure.

Mr Anderson, Chairman of the Business Council of Australia (BCA)’s Transport Task Force, has proposed the creation of an organisation — to be called the Australian Rail Infrastructure Corporation — to operate and maintain all rail infrastructure in Australia. (BCA 1993).

Option 4: Franchising rail services

A further option is to provide access to existing tracks for new operators of urban rail services.

Possible ways of introducing new operators of urban passenger rail services include:

- franchises for the whole network;
- franchises for part of the network; and
- open access to some lines.

New entrants may also wish to operate some aspects of the infrastructure, for example stations, or lease some lines where the new operator is the sole user of that section of track.

A service does not necessarily have to be profitable for it to be franchised. For example, services in the UK are tendered on a minimum subsidy basis. The government defines the services it wants provided and the franchise is awarded to the operator who is willing to provide an acceptable quality service at the least cost to taxpayers.

Under these approaches the government continues to control rail infrastructure, and charges the providers of rail services a fee for running trains on its track. Agreements to allow one operator access to another's infrastructure already exist in Australia. The National Rail Corporation's freight trains will require access over urban tracks, and for many years Australian National has paid the State Transport Authority (SA) for access to urban rail lines in Adelaide. Private operators negotiate a fee for use of the PTC's infrastructure when providing Victorian country passenger services.

There may be situations where it is possible to have more than one operator providing a particular service over a given length of track (for example, at different times of the day). Under such an arrangement, which is commonly referred to as 'open access', operators would be provided access to the tracks through a coordinating body or regulator, subject to availability of capacity and suitable commercial arrangements.

Examples of private operators of passenger services

There are some private operators that provide passenger rail services in Australia and other countries, mostly in non-urban areas.

Franchises for several country passenger routes in Victoria were opened for competitive bidding in 1993 (with bids open to both rail and coach operators). The PTC did not bid. Two private operators of passenger rail services won the

franchises for the Melbourne-Shepparton and Melbourne-Warrnambool routes. They pay fees to the PTC for use of the infrastructure, and lease the PTC's rolling stock. According to the Victorian Minister for Public Transport, the tendering of passenger rail services resulted in an annual cost saving of \$3 million on each of the Shepparton and Warrnambool lines (DR transcript, p. 806).

So far the trends on both services have been encouraging, with patronage exceeding initial expectations, and a reported improvement in service quality (Mangan 1994, p. 4). Patronage in the first 13 weeks of private operation on the Warrnambool line totalled over 66 000 (West Coast Railway 1993). In commenting on the improved Warrnambool service, a spokesman for the Public Transport Users Association of Victoria said that '... if a service is to succeed it needs people with a real interest in its future.' (Mangan 1994, p. 4).

In NSW, private operators currently provide certain tourism-related charter services over tracks owned by the State Rail Authority (SRA). The SRA has called for expressions of interest from the non-government sector to operate the Wollongong-Moss Vale line, possibly as a tourist service.

In September 1993, the Western Australian Government announced that rail services could be operated by either Westrail or private operators under contract to the Department of Transport.

From 1988, tenders were called for the operation of both urban and non-urban routes in Sweden. This was part of an overall package of measures aimed at improving decision-making with respect to both rail and road-based transport, and was accompanied by increased investments in rail infrastructure. The Swedish State Railway has won all tenders for urban routes to date. One private operator, BK Train, now provides rail services on three county lines. The tenders resulted in initial cost savings of 20 per cent, even though the government operator continued to provide most of the rail services (Nordell 1993). In the United Kingdom, tenders are being called to operate rail services currently provided by British Rail. The initial tenders cover both urban and non-urban areas.

In conjunction with his proposal for all rail infrastructure to be owned and operated by the Australian Rail Infrastructure Corporation, Mr Anderson of the Business Council of Australia also recommended that tenders be called for the operation of rail services, including urban passenger services (BCA 1993).

Practical issues in introducing new operators

In both its initial and draft report submissions, the NSW Treasury noted the practical considerations of introducing new operators due to congestion on the track:

In theory there is no constraint on the track being used by other transport companies to operate passenger rail services and the use of the track could be viewed in the same way as use of the road system where there is a road or track use charge. There are, however, operational problems in allocating track space to a number of operating companies. These problems are significant when it is a question of allocation of track space during peak congestion periods. (Sub. 177, p. 9; Sub. 311, p. 2)

There may be some complications with multiple operators which do not occur if there is only one operator. These include greater scheduling and co-ordination problems, and the need to ensure that all operators have access to tracks on fair terms. Depending on the cost structures of particular urban networks and the way in which a network is divided, some economies of scale or scope may be lost (for example, the amount of rolling stock may need to increase overall, as each operator seeks to have a buffer against breakdowns and delays).

Where any new operators are to provide services over government-owned track an access fee will need to be negotiated. The level of the access fee will depend on the valuation of the infrastructure, the terms on which new operators are willing to provide services, whether there is one or more than one operator, and whether access is provided by an exclusive franchise arrangement or by 'open access'. Access fees should cover the marginal costs of the new operator using the infrastructure, and make at least some contribution to the fixed costs (see chapter A7).

The Commission received a range of views from rail authorities and State Governments on franchising urban rail services. The Victorian Government (Sub. 319, p. 17) noted that private operators are currently confined to country services in Australia and elsewhere, since these are more separable in operational and market terms. It said that use of whole network franchises could result in the replacement of public monopolies by private monopolies.

CityRail commented that the NSW Department of Transport has already initiated investigations into franchising rail services, such as for the Wollongong-Moss Vale line. However, it considered that the separation of services from infrastructure is not a feasible or efficient solution for urban rail in Sydney (Sub. 256, p. 2).

In commenting on the WA Government's statement that passenger rail services in Perth could be provided by private operators, Westrail considered that Perth's rail network would not be sufficiently large to encompass more than one operator (DR transcript, p. 32).

The Queensland Government (Sub. 327, p. 8) does not support the provision of access for new operators of urban rail services.

State Governments may not have sufficient information to determine how potential new operators would like to participate in the provision of rail services. Without this information the authorities may not be able to decide whether the franchising of rail services would result in net benefits. One way of obtaining this information would be for state governments to seek expressions of interest from potential operators to determine the terms and conditions under which they may be interested in operating urban rail services. Requests for expressions of interest could be framed broadly, without limiting the options for participation in the industry. For example, in addition to operating passenger services, potential operators could be asked if they would be interested in owning or leasing parts of the infrastructure (including stations).

The Victorian Government (Sub. 319, p. 18) considered that, whilst governments lack experience and information in structural reform of urban rail, there would be little point in seeking expressions of interest from prospective operators in the absence of genuine commitment.

Privatisation

Given the poor financial performance of Australia's urban rail networks, the sale of entire networks would probably not be feasible at present. Whether the sale of individual lines is possible depends in part on whether it is economical to operate one line only. The sale of stations separately from other rail infrastructure may also be possible, either to an operator of rail services or to other firms.

In July 1993, it was announced that New Zealand Rail Ltd had been sold to a private consortium including a US rail operator and two financiers (an overall profit having been made in the year to June 1993). In Japan, private railways operate alongside various subsidiaries of the government-owned Japan National Railways (JNR) in urban areas. The Japanese Government is in the process of selling shares in JNR subsidiaries to the public (JNR East, the first of the subsidiaries to be sold, was listed on the Tokyo Stock Exchange in November 1993). In Singapore, there are plans to sell shares in the government-owned Singapore Mass Rapid Transit Corporation to the public.

Access to the urban rail network

Another issue is the form of government regulation which is appropriate, if new operators are allowed to provide rail services. To what extent should

governments continue to regulate fares and other aspects of service, such as frequency? If fares or services offered by a corporatised GTE or private operator do not meet the government's requirements, that should be treated as a community service obligation, and handled through a community service contract with the operator. Pricing regulation in a situation of a monopoly provider of services is discussed in chapter A6.

Irrespective of whether any additional operators of rail services are introduced, there is a need to separate the function of regulating safety from the government operator. This is occurring in NSW, with the introduction of legislation to establish a regulatory regime independent of the State Rail Authority (NSW Department of Transport, Sub. 178, p. 4).

Under all of the options which result in more than one organisation providing passenger rail services, there is a role for government regulation to ensure fair access to the track and other infrastructure.

Some form of regulation or contractual relationship already exists for use of government-owned infrastructure by organisations other than the government's own railway. Examples include: the National Rail Corporation for interstate freight services, private operators providing country passenger services in Victoria, private operators of charter rail services in NSW, and Australian National over the State Transport Authority's tracks in Adelaide.

Access can be regulated either through an industry specific body or by general legislation. An example of an industry specific regulator is AUSTEL, which was set up to regulate Australia's telecommunications industry. But, as noted in the Industry Commission's 1992 Report on *Mail, Courier and Parcel Services* (see IC 1992), there are advantages in providing such regulation through general legislation.

Under general legislation, such as the *Trade Practices Act 1974*, the regulatory body would only intervene when problems arise. In contrast, enterprises need to deal continually with an industry specific body and could face high compliance costs. Further, a general regulator can ensure that a consistent approach is applied across all industries and, in the case of rail, across the various states.

The Commonwealth Government is considering its response to the (Hilmer) Report on *National Competition Policy* (see Independent Committee of Inquiry 1993) which outlines arrangements to ensure fair access to infrastructure networks such as urban rail systems. Implementation of these access arrangements would provide safeguards for the owners of rail infrastructure and the suppliers of rail services:

- the access arrangements would only be imposed on the owner of the network after a public inquiry;

- the public inquiry would develop an access declaration which would specify pricing principles to govern access negotiations with, if necessary, binding arbitration;
- the access declaration would specify any other terms and conditions to protect the interests of the owner of the infrastructure or the competitive process; and
- all access agreements would be placed on a public register.

Strategy to implement structural reform

The five rail authorities which currently operate urban rail services in Australia vary considerably in terms of size, market share, level of cost recovery and method of organisation. This, together with the range of responses on the options for reform which the Commission proposed in the draft report indicates that **it would be inappropriate to apply the same approach to structural reform in all cases.**

In Adelaide and Perth the relevant authority provides urban services only, whereas in Sydney, Melbourne and Brisbane the relevant authority provides both urban and non-urban services. Similarly, differences in the size and structure of each city may also make a single approach inappropriate. The best approach to structural reform will depend on the costs and benefits of pursuing particular options, and the interest of potential new operators.

In their responses to the draft report, State Governments agreed with the Commission's proposal to create autonomous business units for different types of rail traffic. Some authorities have already taken this step. There was a variety of responses to the proposal to create an autonomous business unit responsible for infrastructure. Of the five urban rail authorities, only the PTC has established a separate business unit for infrastructure.

CityRail currently has plans to divide its network into geographically-based business units. The Victorian Government considers that more research is needed on the appropriateness of this option for Melbourne, while Queensland does not consider it to be appropriate for Brisbane.

There was a range of views on the appropriateness of creating a separate infrastructure body, with several participants highlighting the practical difficulties of doing so.

Private operators in Australia currently provide passenger rail services only in country areas. This is partly related to the greater separability of individual rail lines in non-urban areas compared with those in urban areas. It would seem appropriate for State Governments to consider the extension of private rail

operations in outer areas, such as lines that link neighbouring regional centres with cities such as Melbourne and Sydney. The Western Australian Government has said that rail services in Perth could be provided by either Westrail or private operators under contract to the Department of Transport, but has yet to introduce any new operators.

The Commission recommends that the current moves to corporatise government rail authorities be continued and extended. As a minimum, rail infrastructure and different types of rail traffic should be operated by commercially autonomous business units. Where appropriate, existing urban rail networks should be divided into geographically-based business units.

Looking ahead, State Governments should be open to other options for reforming urban rail in ways that promote greater efficiency, including the creation of a separate infrastructure authority, and the franchising of rail services. Seeking expressions of interest from potential operators could be a way of generating information about the benefits and costs of pursuing these options.

B2 TRAMS AND LIGHT RAIL

Trams, including light rail as modern tramways are usually called, account for a minor share of the total urban transport task in Australia. Excluding tourist services, only two cities still operate tram services. In Melbourne, an extensive tram system serves the city's inner suburbs, and light rail lines connect Port Melbourne and St Kilda to the city. Adelaide's only tram line connects the CBD to the coastal suburb of Glenelg.

Australian tram services have a record of poor financial and operational performance. Declining patronage, questionable investment decisions and inefficient operating practices have impeded the viability of tram services.

Following a decline in the popularity of tram services in the mid twentieth century, there has been a world-wide renaissance of interest in light rail, largely in response to concerns relating to sustainable development and cost-effective urban transport. Current proposals to expand the presence of light rail in Australian cities are examined in this chapter.

B2.1 Characteristics of trams and light rail

As a form of urban transport, trams and light rail may be distinguished from traditional suburban rail by a number of characteristics:

- lower carrying capacity;
- less segregation of track and more on-street running;
- reduced need for automatic signalling requirements;
- relatively light cars (compared with suburban rail cars); and
- greater flexibility to negotiate sharp corners and steep gradients.

Whereas suburban rail tracks are typically located in their own transport corridors and segregated from other traffic, trams and light rail are less constrained and tracks can be located along streets, with or without priority over other traffic.

Light rail transit (LRT) is essentially a modern tram system, typically employing newer vehicles, modern technology and less shared road use than its

predecessor. In general, the greater the degree of segregation from other traffic, the higher the average travelling speed. Segregation also reduces the potential for accidents. Exclusive rights of way are, however, more costly than shared routes, particularly as a result of the purchase (or opportunity) cost of the land required.

Key operating characteristics of the rail modes in Melbourne are summarised in table B2.1. Two inverse relationships are obvious: between capacity and service frequency (although this is influenced by route density), and between operating speed and distance between stops.

Table B2.1: Summary of operating characteristics of trams, light rail and trains in Melbourne

	<i>Tram</i>	<i>Light rail</i>	<i>Suburban train</i>
Peak period			
Average frequencies	4 minutes	5 minutes	10 minutes
Peak line capacity			
Persons	900-3000	1080-5400	3840-12800
Seated capacity (common consist)	42 (1 car)	76 (articulated)	570 (6 car)
Total capacity (common consist)	117	182	Up to 1000
Average stop spacing	300m	500m	1.5 km
Typical operating speed	8–16 km/h	8–16 km/h	30–90 km/h
Maximum operating speed	72 km/h	72 km/h	115 km/h
Rights of way			
Shared on street	Yes	Yes	No
Exclusive	Rare	Yes	Yes

Source: Metropolitan Transit 1985

In general, higher capacity suburban rail services are suited to long-haul, high density routes with relatively fast travelling speeds and fewer, more widely spaced stops. Trams are well suited to short, medium to high density routes with high service frequency, multiple stops with short distances between, and lower average travelling speed, typical of the Melbourne tram network. The Victorian Government noted that:

The tram ... can only operate at its best and repay its high cost where very heavy, day-long volumes are available, and these arise only with high residential densities and tightly focussed journey-to-work destinations (Sub. 186, p. 23).

B2.2 The current role of trams and light rail

Melbourne

In Melbourne, trams form a significant component of the public transport network, accounting for about four per cent of all journey to work trips. They are the dominant mode of public transport in the central business district and some inner suburbs, providing mainly radial and some cross-suburban travel in relatively densely developed areas. As noted by the Friends of the W Class Trams, trams also play an important role in terms of 'conservation, heritage, character, and tourism in Melbourne' (Sub. 274, p. 1).

In 1993, a total of 646 trams and light rail vehicles were operated by the Public Transport Corporation (PTC) on 42 routes over 230 kilometres of double track (PTC 1993). About 30 kilometres of these routes are cross-suburban. Approximately 34 per cent of public transport journeys in Melbourne are made on trams each year, although this mode only accounts for 22 per cent of vehicle kilometres on PTC services (see table B2.2).

Table B2.2: Overview of the Melbourne and Adelaide tram systems

	<i>Units</i>	<i>1988-89</i>	<i>1989-90</i>	<i>1990-91</i>	<i>1991-92</i>	<i>1992-93^a</i>
Total Employment ^b	No.					
Adelaide (at 30 June)		118	121	116	108	106
Melbourne (Average no.)		na	na	3878	3767	3535
Total km operated (vehicle)	'000km					
Adelaide		751	713	720	688	733
Melbourne		23 800	20 200	22 295	22 537	21 380
Total km operated (seat) ^b	'000km					
Adelaide		48 064	46 600	47 116	42 880	45 932
Melbourne		na	na	1134 000	1159 000	1120 000
Total passenger boardings	'000					
Adelaide		2 544	2 644	2 605	2 231	1929
Melbourne		119 000	95 700	107 659	112 037	100 858
Total vehicles	No.					
Adelaide		21	21	21	21	21
Melbourne		653	654	670	685	646

na not available

a Based on STA and PTC 1992-93 Annual Reports.

b PTC, STA and Industry Commission estimates.

Sources: Public Transport Corporation 1993

State Transport Authority 1993

Steering Committee on National Performance Monitoring of GTE's 1993

A community attitudes study conducted by AGB McNair Australia for the PTC, *Trams in Melbourne* (1991), developed a profile of tram users and non-users in Melbourne. The study found that the bulk of tram travel occurs during the morning and evening peaks, particularly for journeys to and from work and school. Many also use the tram between 9 am and 3 pm, particularly for short distance travel in the CBD.

The Victorian Government stated:

The tram system now uses only 409 trams for its normal morning peak service, which, allowing for the trams on cross-town routes, means that the system has a capacity to deliver about 20 000 seated passengers into the [Central Business District] (or nearby areas) in the peak hour. In the early seventies, nearly 600 trams were required in the peak period. Three years ago, over 500 were needed. This decline in the trams' use of their costly infrastructure is disturbing. (Sub. 186, p. 25)

Various factors have contributed to a decline in tram travel. Today, few Melbourne tram routes sustain high passenger loadings throughout the day. Reasons include increasing car ownership and lower tram travelling speeds due to road congestion, the recession, a decline in CBD activity, and a prolonged strike in 1991. According to the Victorian Government:

The vehicle fleet is being rationalised so that an adequate number of new or refurbished trams will operate to meet current daily demand and a further 50 are being held in reserve to deal with service shortfalls and special events (Sub. 319, p. 18).

Government control of the tram service in Melbourne extends over routes, staffing, timetables, the types of trams used, and fares. In early 1993 the Victorian Minister for Public Transport announced a package of transport reforms, including:

- the introduction of automated fare collection equipment over an 18 month period and the consequent phasing out of tram conductors;
- closure of the Northcote to Thornbury shuttle-tram line, with union acceptance conditional on no other existing line being closed during the term of the agreement;
- driver-only operation on some tram services, especially in the evenings and on weekends, which is ultimately expected to save \$24 million a year according to the Victorian Minister for Transport (DR transcript, p. 802);
- contracting out of cleaning activities; and
- competitive tendering for tram track construction and maintenance.

The Victorian Government (Sub. 186, p. 13) is pursuing a strategy to operate the optimum mode on each route. This may lead to the replacement of some lightly patronised tram services with bus services, or further conversion of urban rail to light rail.

Adelaide

During the first half of the twentieth century Adelaide operated an extensive tramway and trolleybus system, although most of the system was converted to buses during the 1950s. Only one 11 km tramway remains: from the city to Glenelg, operated by the State Transport Authority of South Australia (STA), accounting for approximately three per cent of public transport journeys and half of one per cent of all journey to work trips in Adelaide. This route is located in a relatively high-density corridor, and a large number of patrons are tourists. The tramway is a private right-of-way operated by single cars, with two-car units during work and recreation peak periods.

There is a proposal before government to extend the existing line northwards through the CBD to the central railway station. If this proposal is accepted, reform of tram operations will likely become a greater priority; changes to rolling-stock and ticketing may be considered. Despite recent work practice reform in bus and rail operations in Adelaide, tram operations have remained virtually unaffected. One important initiative was the introduction of multi-skilling allowing drivers and conductors to perform both duties.

B2.3 Assessment of performance of existing systems

A variety of financial and non-financial partial measures of productivity are considered below in order to assess the performance of the tram systems.

The partial indicators draw on the work of the Steering Committee on National Performance Monitoring of Government Trading Enterprises in *Government Trading Enterprises Performance Indicators, 1987-88 to 1991-92* (1993). Because of the differences in scope between the tram systems in the two cities, comparisons need to be interpreted carefully.

Cost recovery

Only about 30 per cent of operating costs are recovered directly from farebox collections in Melbourne. This level of cost recovery is similar to rail and significantly higher than for most government bus services. In Adelaide, tram cost recovery from the farebox — at 25 per cent — is higher than rail and lower than buses. Most residual costs are financed by government grants.

Barry (1991) conducted a comparison of international tram and light rail systems to find that farebox recovery of operating costs varied considerably between different cities. Farebox recovery was generally greater than achieved

in Australia, for example San Diego 89 per cent (1988), Sacramento 35 per cent (1990), Portland 53 per cent (1990) and Nantes 113 per cent (1987).

As discussed in appendix D, relative to other modes, trams are expensive to operate on a vehicle kilometre basis, costing more than twice as much as a bus kilometre and one and a half times the cost of a rail kilometre in Melbourne. This is offset to some extent by higher levels of boardings per kilometre and revenue per kilometre for trams in both Adelaide and Melbourne (Steering Committee on National Performance Monitoring of Government Trading Enterprises, 1993). The balance of overall cost efficiency favours buses over both trams and rail. The Victorian Government noted that a bus network could provide a similar service to that currently provided by trams at a substantially lower annual cost. It argued that tram retention reflected traveller preferences for trams over buses.

Melbourne is very proud of its trams, and those living along the tram routes show a strong preference for tram travel over the bus alternative. But Melbourne pays heavily for its preference for tram travel and the environmental benefits of trams. After subtracting the present cost of unnecessary conductors, operating Melbourne's present tram service costs approximately \$45 million per annum more than if buses were used. That is what Melbourne has always been prepared to pay for the smoother ride and the environmental benefits of the trams. This cost disparity makes obvious the need to focus on further efficiencies in tram operations.

Even after efficiency improvements, the tram system will cost significantly more than a bus alternative. Because Melbourne values the other benefits of the trams, this 'benefit' (i.e. the additional cost willingly incurred on the trams) can also be added to the social benefit produced by the PTC. (Sub. 186, pp. 24, 36)

These findings were disputed by the Friends of the W Class Trams in their reply to the draft report. They argued that a W Class Tram could be 'run on terms which compare commercially with buses' (Sub. 274, p. 1).

Our figures would suggest that comparing a publicly operated W Class tram with a publicly operated bus, the tram is probably a bit cheaper but dearer than a privately operated bus (DR transcript, p. 834).

Capital and investment performance

As noted in chapter B1, investments in rail infrastructure involve large outlays representing fixed infrastructure with few alternative uses. This characteristic applies equally to trams and light rail, although the outlays are typically not as high.

Capital expenditure on the Melbourne tram network comprises line extensions, the purchase of new vehicles and upgrading of existing cars. In recent years, significant expenditure has been involved in extensions to the existing network,

increasing the total length of the track to 235 route kilometres. The Victorian Government, however, considers that this has not always led to the most efficient use of financial resources.

... recognition of past misplaced investments may prevent future recurrence. Some of these have occurred because of the availability of tied Commonwealth funds. Funds allocated for extensions to the tram network, for example, may have been more productively spent on rehabilitating existing routes carrying much heavier traffic. (Sub. 186, p. 21)

Criticism of investment decision making has also been levied at the purchase of 130 new light rail vehicles in 1986 which were designed to replace ageing W class trams and to operate on converted light rail routes in Melbourne. According to the *Report on Ministerial Portfolios*, prepared by the Auditor-General of Victoria (1993):

Since 1990, the [Public Transport] Corporation has held increasing numbers of light rail vehicles in excess of its immediate service needs. At 31 March 1993, it held 63 surplus vehicles. After taking into account interest or opportunity costs on funds ... audit estimates that around \$126 million has been prematurely outlaid by the State since 1990 to acquire these vehicles. (p. 256)

The Auditor General concluded that:

The costly lesson which can be learned from the Corporation's experiences with this project is the importance of adequate flexibility in contractual arrangements where sensitive issues (in this case, the replacement of W class trams) may give rise to subsequent shifts in the direction of government policy during the term of the contract. (p. 256)

Labour productivity

Labour productivity (as measured by vehicle kilometres operated per employee) is similar for both the PTC and STA (SA), at approximately 7 000 vehicle kilometres per employee. To put this into perspective, bus operations average approximately 20 000 vehicle kilometres per employee, while heavy rail varies from 8 000 to 17 000. Measured in terms of seat kilometres per employee, labour productivity of the PTC is only about 75 per cent that of the STA, but has been improving annually, while the STA's labour productivity has fluctuated (see table B2.3).

An alternative productivity measure is passenger boardings per employee which increased marginally for the PTC but declined marginally for the STA over the three years to 1992-93. Relatively high passenger boardings per employee on the tram system, compared with other modes in Melbourne, reflects the higher population densities in the tram catchment region.

Overall, load factors (boardings per kilometre) remained relatively constant over the same period, and are high compared with other urban transport modes.

Table B2.3: Productivity of the Melbourne and Adelaide tram systems

	<i>PTC</i>			<i>STA</i>		
	<i>1990-91</i>	<i>1991-92</i>	<i>1992-93</i>	<i>1990-91</i>	<i>1991-92</i>	<i>1992-93</i>
Seat kms per employee	292 000	308 000	316 000	406 000	397 000	433 000
Vehicle kms per employee	5 749	5 983	6 048	6 207	6 370	6 915
Passenger boardings per employee	27 761	29 742	28 531	22 457	20 657	18 198
Load factor (boardings per v.km)	4.83	4.97	4.72	3.62	3.24	2.63

Sources: Steering Committee on National Performance Monitoring of GTE's 1993
Industry Commission estimates

While most overseas tram and light rail systems have had driver-only operations for many years, both Adelaide and Melbourne have retained on-board conductors who are responsible for ticket selling and providing customer assistance. Following an agreement between unions and the Public Transport Corporation in April 1993, conductors on most types of Melbourne trams will be progressively phased out and replaced with automatic ticketing devices. The removal of 1 000 conductors will improve labour productivity on the Melbourne trams.

A recent decision by the Victorian Minister for Transport to contract out the cleaning of trams, tram shelters and tram depots is also expected to achieve considerable improvements in labour productivity (Brown 1993b).

The Commission endorses the elimination of two-person tram operation.

Total factor productivity

The Commission's study of total factor productivity (TFP) included tram operations of the STA and PTC (see appendix D).

The study found that between 1986-87 and 1992-93, TFP of STA tram operations declined overall. Productivity declined by 20 per cent, based on an output measure using passenger kilometres, reflecting both a reduction in load factor and a decline in technical efficiency (supply side productivity).

Trams are the least productive public transport mode run by the PTC. Based on passenger kilometres, trams are approximately 13 per cent less productive than

PTC rail and have declined by 6 per cent over the last three years. With output measured using seat kilometres, trams are nearly 52 per cent less productive than rail, and have remained fairly static over the last three years. The difference between these two measures is largely explained by relatively high load factors on trams in Melbourne.

Service quality

Patronage is influenced by perceptions of service quality which reflect a variety of factors including frequency, reliability, safety, speed, comfort, crowding and cleanliness. A trade-off exists between these features, on the one hand, and the cost of service provision on the other.

Frequency is one of the most important aspects of service quality. Of all the public transport modes, trams typically operate at the greatest frequency. In both Melbourne and Adelaide, service frequency varies throughout the day ranging from less than 10 minutes for each route in the peak to 20 minute intervals in the evening and on weekends. The percentage of service cancellations on the Melbourne tram network has been declining over the last five years.

The AGB McNair study of trams in Melbourne (1991) examined community perceptions of a variety of different aspects of service quality. A majority of respondents found the level of cleanliness acceptable and seats well maintained. Three quarters of respondents highlighted overcrowding on trams as a problem. Overall, nearly two-thirds of respondents indicated they were very satisfied with tram services.

B2.4 Options for improving performance

Recent reform initiatives, such as the introduction of automated ticketing, contracting out of maintenance and track construction services, removal of conductors in Melbourne, and the introduction of multi-skilling in Adelaide, will improve the operating performance of tram services in Australia. Even greater gains could be achieved through further administrative and structural reform.

Certain efficiency gains in trams and light rail can be achieved through administrative reform. One aspect of this process is the corporatisation of the transport authorities operating tram and light rail services in Melbourne and Adelaide (see chapters A11 and B1), a process already under way in the PTC.

The Commission recommends that the management of light rail and tram services be separated into commercially autonomous business units within corporatised transport agencies.

As discussed in chapter B1 several options exist for reforming the structure of urban rail services. A similar range of options applies to the provision of tram services:

- separation of different tram services (for example, distinguished by lines or geographical regions) and infrastructure into business units or different organisations;
- tendering for supply of services on part or all of the existing network, with infrastructure remaining under government control;
- privatisation (including infrastructure) of part or all of an existing network; and
- making tram services compete with alternative public transport modes.

Despite the similarities between rail and tram systems, there are some important differences which need to be considered.

In Adelaide, operational efficiencies may be achieved through institutional reform of the Glenelg line. This may entail either some combination of public and private sector involvement or privatisation of the operation. One option may be continuing public ownership of the track with private responsibility for service operation (franchising) and maintenance. A second option could involve privatisation of the complete service, including infrastructure. Because of its simplicity, the early introduction of private operators is likely to be easier in Adelaide than for other rail and tram operations.

The response to these proposals in the draft report was generally very supportive. The South Australian Office of Transport Policy and Planning agreed that private sector involvement in the Glenelg tram line was worthy of consideration, particularly with respect to the possible extension of the tram line (Sub. 224, p. 12). The Bus and Coach Association of South Australia also indicated interest in proposals for private sector involvement in the provision of tram and light rail services in Adelaide (Sub. 297, p. 1).

Some of the structural reform options may not be practicable in Melbourne, where trams share road surfaces with other vehicles. This occurs particularly in the suburban areas, whereas in the CBD and along major routes some separation has been achieved. This raises the difficult issue of property rights which — in the absence of dedicated corridors — may prevent private ownership of track infrastructure. The Victorian Government agreed in its response to the draft report:

The differences arise from the fact that trams share right-of-way with parallel and intersecting road traffic ... Tram infrastructure business units will have some difficulty in consistently providing specified standards of access to infrastructure for service operators due to traffic congestion and variability. (Sub. 319, p. 18)

The integrated nature of the Melbourne tram network will ensure that coordination of access to the track will also be an important issue. Many sections of track, particularly in and surrounding the CBD, are shared by several different tram routes. As with suburban rail, it may be necessary for an independent infrastructure authority to determine timing and access conditions where there are multiple operators, as a result of the coordination and congestion problems associated with fixed track modes.

A method of access would need to be determined. As discussed in chapter B1, this could range from open access, subject to price, safety and service conditions, to fixed period exclusive franchises for particular routes. Tenders could relate to geographical segments of the network or the entire network. A process of dispute resolution, and monitoring and enforcement of access contracts would be necessary.

Traffic management systems can be put in place to prioritise road-based public transport such as trams and buses. An initiative in Melbourne was the introduction of the Fairway system to keep other vehicles off tram lines as much as possible, and coordinating traffic signals to give priority to trams. Another option relates to kerb-side parking along busy bus and tram routes. The City of Brunswick noted:

By and large shopkeepers and small businesses in those strips are very reluctant to see car-parking reduced and they get particularly irate if a council proposes to remove kerbside parking. However, if we want to have real priority for road-based public transport through those centres, then we are going to have to do something about kerbside parking to allow the tram system to be really competitive with the motor car. (Initial hearing transcript, p. 1050)

The Commission recommends that, where trams are retained, complementary traffic management systems be implemented or improved, including limiting parking adjacent to tram routes.

Options relating to competition of trams with other modes and the closure of non-viable services are identical to those considered in chapter B1.

B2.5 Proposals for new light rail lines

During the last 20 years there has been increasing interest in light rail as a viable transport mode, due to technological developments, the relatively high cost of heavy rail construction and concern about the costs of increasing urban sprawl

and traffic congestion. Light rail is considered by some to have a potential role in addressing the issue of sustainable development and problems relating to urban form and the environment.

Light rail and urban form

The interdependent relationship between transport and urban settlement has been examined earlier in this report (see chapter A1). Several participants highlighted this relationship and argued that new light rail developments should be undertaken to stimulate urban redevelopment, particularly in inner city areas. By attracting and consolidating development in existing areas, light rail, it is argued, could help reduce development pressure on the fringe.

However, research has questioned the ability of new rail systems to attract and consolidate development. A study by Walmsley and Perrett (1992) investigated the short-term to medium-term influence of new rail (both suburban and light) on urban form in European and North American cities. They found that in poorly developed or declining areas, new lines had very little development impact. In contrast, in areas of growth, new rail systems may reinforce and encourage further development. It was argued that the systems where the greatest effect on urban development has occurred are those where there had been a long process of urban planning in conjunction with the rail system.

Many challenge the assumption that light rail is the most desirable way of restructuring our cities. Professors Hensher and Waters, for example, have argued that rail-based transport is an unnecessarily expensive mode to complement more intensive development and that busways could achieve a similar result for a significantly lower cost (Hensher and Waters 1993). Others have criticised busways for requiring more land than light rail tracks, for creating a congestion problem and for being 'easily converted into ordinary road lanes as the result of pressure from the roads lobby, thus losing the 'permanent way' for public transport' (Diesendorf 1993). The O-Bahn technology, which utilises guided track along a segregated right of way much like a rail-based mode, is one way busways can be constructed to offset these criticisms.

Clearly there is a relationship between transportation infrastructure and services and patterns of urban settlement. It is not clear, however, that it is possible to create a particular urban structure on the basis of the type of transport services introduced into a particular area (see chapter A1).

Environmental impact

A detailed discussion of environmental issues and urban transport is contained in chapter A10. Several participants highlighted the particular environmental strengths of light rail. For example, light rail vehicles produce emissions only indirectly, through the consumption of electricity, which is typically produced from coal in Australia. The type of technology chosen will also be important in terms of maximising energy efficiency and minimising noise pollution. Relatively high capacity light rail cars have the potential to reduce the number of cars trips undertaken. This may relieve some road congestion, although there is little evidence to suggest that this has occurred in practice where new systems have been opened. Where trams run unsegregated on-street, road congestion may actually increase.

The ability of light rail to achieve and maintain a competitive advantage in terms of environmental impact will depend on these influences. This advantage is likely to be maximised in the presence of relatively densely settled corridors, where potential patronage is high and the opportunity cost of land (for freeway widening or expansion) is high.

Overseas experience

Since the early 1970s, many European and North American cities have either upgraded an existing tram or streetcar network or introduced a new light rail system.

The lessons from other countries are mixed. Some new systems, for example light rail in San Diego and Sacramento, were constructed simply and inexpensively. Although the influence of rail on developments on urban form is typically a long-term process, some new systems have had significant short-term land use impacts, reinforced by developer incentives and a planning emphasis on growth along the rail corridors. Cost recovery varies from high levels in San Diego, to moderate levels in Sacramento.

In contrast, other light rail systems in the United States have performed poorly. In some cities, for example Pittsburgh and Buffalo, actual construction costs significantly exceeded budget projections while estimates of patronage were overstated.

Modern light rail systems in Europe have also had mixed success. New tramways in Nantes, France (1985) and Grenoble, France (1987) both achieved operating cost recovery of more than 50 per cent within two years of opening (Barry 1991). The Metro in Newcastle upon Tyne, UK, recovers 90 per cent of its operating costs.

Some cities have pedestrianised sections of the city centre simultaneously with the introduction of new light rail systems. In several cities shopping and employment activity has increased in central areas above what would otherwise have been expected.

According to Walmsley and Perrett (1992), in cities with a record of good public transport, new rail systems have increased public transport patronage. However, about two-thirds of travellers on the new services were existing public transport users. Of the remaining portion, approximately half was new traffic while the rest were former car drivers. Overall, there appears to have been little impact on road traffic levels.

In almost all cases, light rail systems are expensive to construct. Most new systems have been financed by a combination of local or state government authorities with substantial contributions from the national government. Private sector participation in funding has been limited. In several cities, increments in local taxes, such as on fuel, have been employed to contribute to funding.

Potential for light rail in Australia

Although outside of Melbourne the current role of trams and light rail is not significant in Australia, several participants in this inquiry claimed that there is considerable potential for light rail in a number of our cities. For example, the Light Rail Association argued that:

... it is here in Sydney where light rail has its greatest potential. This is because Sydney has the rights of way and the potential passenger volumes for a highly successful light rail system. ... Higher density of development and the concentration of high traffic generating establishments, especially offices, shops, universities and hospitals enable better public transport to be provided and the better it is, the more people will find it an acceptable alternative to driving a car. (Sub. 69, Annex A, p. 1)

Several light rail proposals have already been developed for a number of Australian cities, including extensions to the Melbourne and Adelaide systems, although few have progressed beyond the planning stage. A project to construct and operate a light rail line to Ultimo-Pyrmont in Sydney's inner west has been approved and construction is expected to commence in 1994. Expressions of interest have also been called for the provision of transport services to Sydney's northern beaches and a tram line for the central business district of Hobart. Recent light rail proposals include:

- Sydney: South-eastern suburbs, including Kingsford Smith Airport;
- Newcastle: City to Hunter Valley;
- Melbourne: City loop tram line; Southbank project;

- Brisbane: New Farm to Teneriffe urban renewal project;
- Perth: CBD to inner-eastern suburbs; Fremantle to Rockingham and Mandurah;
- Adelaide: Extension of the Glenelg line through the CBD to Adelaide railway station and on to the north-west;
- Hobart: Hobart CBD tramway; and
- Canberra: CBD to Gungahlin.

It seems doubtful whether investment in light rail will be optimal on cost-benefit grounds in many cases. It is expensive to construct, operate and maintain. Population densities in Australian cities are rarely sufficient to justify the capacity generated. On the other hand, it may have environmental, land use, and patronage advantages which also need to be considered in assessing the merits of investment proposals.

According to the Town and Country Planning Association, light rail could play a much more significant role in the transport task, particularly in outer Melbourne suburbs not adequately served by rail transport:

This would require reducing the number of stops, providing absolute tram priority at intersection, road segregation as far as is possible, and separating light rail routes from tram lines. Creating the right marketing image and environment for light rail would enable the concept to succeed at limited capital cost. (Sub. 283, p. 11)

One potential role for light rail in Australia is as a substitute for former, or existing, lightly-patronised, suburban rail routes. The Port Melbourne and St Kilda light rail lines were formerly part of the metropolitan rail network in Melbourne. As a result of a persistent decline in patronage, both routes were converted to light rail in the mid 1980s and have achieved significant cost savings since. Proposals for the conversion of other rail routes have been put forward in Melbourne and Sydney in recent years.

New light rail projects may have greater potential if pricing structures of all modes could be improved to reflect the benefits and costs of each mode. For example, beneficiaries could be charged a price reflecting land value benefits which they accrue as a result of new rail services (value capture). Fares should also be restructured to reflect high and low cost modes. These issues are analysed in chapter A7.

Private sector interest

The potential for private sector involvement in rail-based modes is likely to be higher for new light rail projects than existing rail systems for a variety of reasons. First, new investment projects would be expected to have greater

flexibility in terms of infrastructure choice, location, operations, funding and associated development proposals. Potential investors have a greater opportunity to tailor the project to suit their own requirements.

Second, the costs associated with investment in light rail are usually, although not always, lower than a heavy rail project.

Third, new light rail systems are potentially more separable than the existing suburban rail or tram networks in Australian cities. Thus, problems of coordination or congestion, which may arise where multiple operators become involved, are less likely to feature in light rail projects.

One method for determining the extent of private sector interest in light rail development is to call for expressions of interest for the provision of transport services in a designated corridor. This approach was adopted in NSW for both the Ultimo-Pyrmont and Northern Beaches light rail projects.

The extent of private sector interest will likely be affected by the franchise period awarded on new development projects. As Mr Bendall noted, the long life span of light rail infrastructure, including vehicles, track and signalling, will affect the optimal franchise period for new investment (Sub. 303, p. 4). This issue has been addressed in the tender specifications for the proposed Ultimo-Pyrmont project. The successful tenderer will be awarded a 25 year franchise to build, own and operate the system, after which it will be transferred to the NSW Government. The NSW Government will make an initial financial contribution to the project, after which the successful tenderer will be required to meet all further costs associated with construction and operation.

Investment decision process

New light rail projects need to be evaluated in light of economic, social and technical factors as well as the lessons of local and overseas experience. This is the approach of cost-benefit analysis. The Department of Transport (NSW) study *Light rail: its evolution and potential for NSW* (1992) identified several factors which should be considered in such an analysis. Operational viability issues would include current and expected levels of patronage, existing transport capacity and land use patterns and intensity. Funding considerations would include availability of federal and other funds, joint venture capital and alternative funding sources. Cost decisions would rely on robust cost estimates, cost effective transport solutions, potential infrastructure savings through concentration of activities, existing transport and right of way reservations and the potential to reduce operating costs.

Strategic factors such as compatibility with overall public transport policy and other concerns such as urban form and traffic management strategies also need to be considered. Finally, environmental and social considerations, including access for transport disadvantaged, improving access, energy conservation and reducing pollution, are also important.

It is not clear that a single mode will be able to meet all criteria optimally. Cost-benefit analysis would prioritise these objectives and determine which of the modes is most suitable for a particular task. In some cases this may be light rail, while in others, bus, taxi, private car or heavy rail may be more desirable solutions.

New investment in light rail systems or conversion of existing rail lines should not be viewed as a panacea to Australia's urban transport problems. Light rail is just one transport option which may be appropriate in some cases and inappropriate in others. A cost-benefit evaluation of these proposals should consider various factors including the expected passenger density of the route, the availability of a transport corridor, the availability of finance, existing transport and other urban infrastructure, and the potential for light rail conversion of existing suburban rail lines.

The Commission recommends that proposed light rail schemes be evaluated against all other options using cost-benefit analysis techniques.

B3 BUSES

Almost 40 per cent of all urban public transport trips in Australia are by bus. In most cities buses are the dominant form of public transport but in others they play a supporting role to rail. While the regulatory environment varies markedly, a common feature is the high degree of government involvement either through direct provision or by regulation of fares, routes, timetables and so on. Comparisons within Australia and internationally show that private bus operators are more efficient than public operators. Overseas reform experience also offers some lessons for Australia — about the essential features for success and mistakes to avoid. The Commission finds that increasing competition in Australia's urban route bus industry would initially save taxpayers \$250 million a year, while providing better services to bus users.

B3.1 The role of buses

Public and private buses supply almost 40 per cent of all urban public transport trips in Australia.

Urban route bus services, run by State, Territory or Local Government or licensed to private operators, are common to every city in Australia. Except for Sydney and Melbourne, buses are the dominant form of public transport. Additionally, transport to and from school and community-based transport are overwhelmingly provided by private bus operators (see chapter B5).

For the year to September 1991, over 600 million kilometres were travelled by public and private urban route services around the country (see table B3.1). In our capital cities alone there are almost 5 000 government-owned buses valued at over \$400 million (see table B3.2).

Table B3.1: Total kilometres travelled on urban route bus services, year ended 30 September 1991

<i>State of registration</i>	<i>Million vehicle kilometres</i>
New South Wales	176
Victoria	105
Queensland	106
South Australia	92
Western Australia	74
Tasmania	17
Northern Territory	8
Australian Capital Territory	29
Australian total	606

Source: ABS 1993b, Table 31, p. 24

Buses have a number of attractive features in moving people around cities.

First, they are potentially flexible and can be adapted to changing travel patterns. They can fan out and provide services in residential and commercial areas and so collect and deliver people closer to their homes and destinations.

Second, they are cost-effective. Buses, especially those enjoying priority systems like dedicated busways or high occupancy vehicle lanes, are capable of moving comparable volumes of people at less cost than rail. Hensher and Waters (1993) report that the total operating costs per passenger on light rail are higher than on a typical busway, where comparisons are possible.

Table B3.2: Australian public bus operations, selected statistics, 30 June 1993

	<i>Number of vehicles in stock</i>	<i>Market value of vehicles (\$million)</i>	<i>Number of employees</i>
Sydney and Newcastle	1 444	87	3 520
Melbourne (public) ^a	344	4	1 040
Brisbane	570	130	1 620
Rockhampton	30	2	39
Perth ^b	931	106	2 190
Kalgoorlie	22	2	22
Adelaide	761	72	2 226
Hobart, Launceston and Burnie	243	14	504
Canberra	425	51	1 003
Darwin	32	3	79
Australia total	4 802	471	12 243

a On 28 December 1993, the National Bus Company took over 80% of the PTC (Vic) bus fleet under a seven year franchise agreement.

b The market value of vehicles in Perth is for 30 June 1992.

Source: Preliminary data supplied by the Australian City Transit Association Incorporated

Who uses buses?

Bus users generally come from lower income groups than users of other public transport. The 1988-89 Household Expenditure Survey (HES) showed that households earning the lowest incomes spend a greater proportion of their income on bus and tram fares than those on higher incomes or those using rail or taxis. However, the proportion of income spent on private motor vehicle costs far exceeds that spent on public transport for the lowest income group — 16.5 per cent versus 1.6 per cent for public transport, and only 0.7 per cent for buses and trams. There are exceptions: in Sydney, for example, the lowest income group in the HES spends more of its transport expenditure on rail than buses — see chapter A8.

Table B3.3: Australia's urban bus industry

	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>Western Australia</i>	<i>South Australia</i>	<i>Tasmania</i>	<i>ACT</i>	<i>Northern Territory</i>
Regulators	Dept of Transport	Public Transport Corporation & VICROADS	Dept of Transport	Dept of Transport	Office of Transport Policy & Planning	Dept of Roads & Transport	Dept of Urban Services	Dept of Transport and Works
Public operators	State Transit Authority (NSW) in Sydney and Newcastle	Public Transport Corporation	Brisbane Transport and Rockhampton Bus Service	Metropolitan Transport Trust (MTT) & Goldenlines Bus Service in Kalgoorlie	State Transport Authority (SA) and Whyalla Bus Service	Metropolitan Transport Trust in Hobart, Launceston and Burnie	ACTION (ACT Internal Omnibus Network)	Darwin Bus Service
Private operators	Supply half the services in Sydney, some in Newcastle and all services in other cities	Supply over 90% of the services in Melbourne. All route services in other cities	In less densely populated areas of Brisbane, and other cities	No private operators	In less densely populated areas of Adelaide and other cities	Private operators of route services in Devonport	No private operators	Private bus services in Darwin and Alice Springs
Payment of welfare subsidies	CSO contracts between the Director-General and bus operators	The PTC is not reimbursed for concession fares	State gov't reimburses private operators 30% of gross fare revenue	State gov't reimburses MTT 25% of bus operating costs	STA (SA) and private operators are partly reimbursed	Private operators reimbursed for concession fares, but 'Metro' is not	ACTION is not reimbursed for concession fares	Darwin Bus Service is not reimbursed for concession fares

Sources: Various submissions and annual reports

B3.2 Regulation and provision of Australian urban buses

Bus services are provided by a government-owned operator in all the capital cities. These services are usually complemented by private operators. In most other cities, such as Toowoomba, Geelong, Bendigo and Wollongong, private bus operators alone service the market. The Newcastle area is partly serviced by the State Transport Authority of NSW, and some other cities are serviced by local government bus operations, such as the Kalgoorlie, Whyalla and Rockhampton City Councils (see table B3.3).

Bus operations are regulated by State and Territory Governments, usually through their departments of transport. Table B3.4 sets out the regulatory arrangements for Australia's private urban bus services in detail. All operators (public and private) must obtain government approval of their fares, timetables and the routes their buses take, and all receive substantial subsidies. There is no direct competition between any operators — each is granted exclusive rights to the route or area assigned to it.

The urban bus services in *Canberra* and *Perth* are entirely government-planned and provided, although the WA Government plans to progressively tender out some services over the next three years. The ACT Internal Omnibus Network (ACTION) operates within a government department, whereas Metropolitan Transport Trust (Perth) is a statutory body and is to be corporatised.

Darwin, Adelaide, Hobart, Launceston and *Burnie* are also basically serviced by public operators. However a few services are provided by private operators. The Darwin Bus Service (which operates within a government department) is complemented by Buslink, a private operator working under contract to the NT Department of Transport and Works. Some services on Adelaide's fringe and route services into Hobart from outlying towns are licensed to private bus operators. The new government in South Australia plans to reform the State Transport Authority and to create a Passenger Transport Board responsible for contracting out public transport services.

There is another group of larger cities the bulk of whose services are planned and provided by government, but with a large proportion of other services being provided by private operators holding exclusive franchises.

The bus services in *Brisbane* are supplied by the Brisbane City Council through Brisbane Transport which has a monopoly within the city's limits. The Queensland Department of Transport licenses private operators to service adjoining areas in Brisbane and *Rockhampton* (where the Rockhampton City Council also operates a service) and in other Queensland cities.

Table B3.4: Regulatory arrangements for Australia's private urban buses

	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>South Australia</i>	<i>Tasmania</i>	<i>Northern Territory</i>
Operating agreement	Performance contract which specifies minimum level of service	Cost-based contracts ^a	Performance contract which specifies minimum level of service ^b	Operating contracts with municipal councils in regional areas	Agreement under licence to provide services equivalent to 'Metro'	Buslink has a joint contract with NT Gov't and Alice Springs Council
Coverage	By area	By area and route	By area	By route	By route	By route
Tenure	5 years and renewal	7 years and renewal	3 to 5 years	4 years	3 years	5 years and renewal
Operators' revenue	Fares, operating subsidy for deficit	Fares paid to the PTC, gov't pays operating costs	Fares, gov't subsidy less licence fee ^c	Fares, gov't subsidy	Fares, reimbursed for concessions	Fares, gov't subsidy (rate for minimum km)
Control of fares, routes and timetables	The NSW Pricing Tribunal recommends max prices to Minister	Routes and fares agreed to by the Minister	Dept of Transport determines routes and max fares	Routes and fares agreed to by the Minister	Operators set timetables and fares	Routes and fares agreed to by the Minister
Changes to service delivery	Contracts set minimum levels	Operators must give notice to the PTC	Must give 30 days written notice to Dept of Transport	Must give 30 days written notice to Office of Transport Policy and Planning	Routes changed on application to Transport Commission	Negotiation between Buslink and the Council

a The National Bus Company and the newly formed PTC Bus Division began operating services on 28 December 1993, under seven year franchise contracts. The contracts allow the operator to keep farebox revenue and the Government reimburses them for required concessions only.

b The Queensland Government has entered into only two such contracts with private operators. The basis for future contracts is under review.

c Under the *Urban Bus Subsidy Scheme* in Queensland, a subsidy of between 30 and 60 per cent of gross fare revenue is paid to operators. When services are mostly used by concession passengers, a subsidy is paid on the basis of fare discounts for concession holders. A subsidy on interest paid to purchase buses is available.

Sources: Various submissions and articles

In Brisbane and Rockhampton, operating subsidies for these services are shared between the Councils and the State Government. The Queensland Government has recently announced plans to tender out contracts for bus services in areas or by route (see section B3.6).

The arrangements in *Sydney* and *Newcastle* are governed by the *NSW Passenger Transport Act 1990* and characterised by the allocation of separate territories for the public operator, the State Transit Authority of New South Wales, and for each of the private operators. Contracts with the private operators are periodically reviewed, but renewed unless the operator has failed to meet minimum service levels.

The STA (NSW) is currently being separated into business units. The State Government aims to have its bus operations organised as independent corporatised or privatised entities within five years.

Melbourne bus services are in the process of transition. Under long-standing arrangements the Public Transport Corporation (PTC) of Victoria has operated a number of bus routes in the metropolitan area of Melbourne and administers the cost-plus contracts for private bus operators who supply three-quarters of bus services in the Melbourne metropolitan area and *Geelong*. These contracts, and the accompanying licences, which do not expire until 1997, have been negotiated on 'the claimed costs of particular operators, and therefore cover the costs of the least efficient operators' (Sub. 186, p. 31).

The Victorian Government recently began to reform the PTC, and has awarded six new contracts by competitive tender to service areas previously under the control of the PTC. Unlike previous contracts, these allow operators to keep fare revenue and permit them to change routes, fares and timetables provided they maintain minimum service levels. A new business unit within the PTC will be formed to service the three contracts it won. The National Bus Company, which won the other three contracts, began operations on 28 December 1993.

B3.3 Performance of public and private bus operators in Australia

The range of possible forms of provision of bus services within and among Australian cities leads to obvious questions about the relative performance of regulatory alternatives. Are some systems better than others in satisfying the community's transport needs? Do some approaches require less resources than others, in providing a given level of service?

This section examines the productive efficiency of bus service provision, including management and work practices, the quality of service and degree of

innovation, and compares performance between different systems in Australia and in other countries.

Service quality

The quality of urban bus services was criticised by many participants. For example, the Public Transport Users' Association described the services in Melbourne as of 'an almost unimaginably poor standard' and quoted the Melbourne Metropolitan Planning Scheme Survey (p. 184) which states that Melbourne's buses:

... in most cases act as feeders to rail and tram ... on account of infrequent service and poor co-ordination the saving in walking time by use of a feeder bus is largely offset by waiting time ... there are relatively few who can save much time by using them [ie. instead of walking] ... (as quoted in Sub. 96, p. 4)

On announcing the new policy changes in Queensland, the Minister for Transport stated that the review of Queensland's passenger transport services found that 'many of the State's bus services are sub-standard and have become increasingly dependent upon expensive taxpayer subsidies' (Queensland Minister for Transport 1993).

The Commission is aware of instances where bus service planners have concentrated on radial routes and routes to train stations, while ignoring some communities' needs for local public transport. Such communities include the Shire of Pakenham and the Roxburgh Park development in Craigieburn, both in Victoria (see chapter B5). In addition, the planners and operators have persisted with conventional vehicles regardless of their suitability. For example, Mr Hughes observed that Canberra:

... is a spacious, sparsely populated city which is peculiarly unsuited to traditional mass transit networks such as ACTION, the truth of which is glaringly revealed in the low use of ACTION, the low occupancy rates of its buses and in its enormous government subsidy per passenger carried and per head of population (Sub. 34, Attachment 1, p. 81).

It should be noted that while indicators of service quality do exist, such as those in the report by the Steering Committee on National Performance Monitoring of Government Trading Enterprises, the data is collected by only a few operators and their quality is such that it is difficult to draw robust conclusions (see chapter A3). **The Commission recommends that bus operators collect data to enhance compilation of the performance indicators on service quality (particularly frequency and reliability) published by the Steering Committee on National Performance Monitoring of GTEs. To encourage yardstick competition and enable comparisons of performance, franchised**

private bus operators should also be required to compile and furnish equivalent data to the State and Territory Governments.

Innovation

The regulation of bus services appears to have inhibited innovation in services, routes and fares. This is not to say that innovation has been entirely absent:

- In August 1992 a computerised bus demand management system was introduced in Shellharbour, NSW. The system involved passengers calling a base and requesting the bus pick them up. The project was partly funded by the Local Government Development Program and other Commonwealth funding. The project terminated after the funding was exhausted;
- Trials of a taxibus service are being held in Hallett Cove and Sheidow Park, South Australia. The service operates after 7pm on weeknights and is linked with the STA train services;
- The Croydon Bus Service operates a demand-responsive bus service in Mooroolbark and Rowville. Travel to a passenger's door attracts a surcharge over the Met fare, which the operator keeps. The services run in areas not generally accessible to large buses;
- Westbus has introduced a high frequency service using 26-seater minibuses in the Penrith area west of Sydney. This has doubled service levels on all routes; and
- The Mt Barker Passenger Service in South Australia introduced a multitrip ticket five years ago on its bus services:

We used to have a weekly pass but a weekly pass was just that. If you didn't use it between Monday and Friday, it was not valid for the next week, and that seemed silly. We now sell 1 000 a month and that has got 6 months' life and it's interchangeable ... We're looking at even extending that perhaps to monthly or yearly passes. We're out to get more bums on seats ... (Initial hearing transcript, p. 148)

However generally speaking, innovation has been limited. Regulatory requirements have restricted the type of vehicle which will be accepted, and prevented competition with public bus services in many states and territories. For example, despite the fare innovations Mt Barker Passenger Service have been able to introduce, it cannot pick up passengers from Crafers to Adelaide in competition with the State Transport Authority because of SA Government restrictions. Mr Burt et al claimed that:

In Victoria, regulatory practice has stifled initiatives in new service modes and vehicles, such as telebus services and smaller buses. This is important, as such

initiatives are more likely to provide attractive and viable transport in areas or at times of inherently low demand potential. (Sub. 98, p. 26)

The Victorian Bus Proprietors Association shared this view:

The current control imposed on the bus industry in Victoria is considered to be excessive, particularly in contracted route service operations. While the regulation is reasonably appropriate contractual controls have destroyed the industry's ability to innovate and operate as efficiently and effectively as a truly private enterprise system. (Sub. 84, p. 4)

In NSW, where regulatory arrangements for private operators give somewhat more scope for initiative, there has been evidence of a greater degree of innovation. For example, the NSW Bus and Coach Association (Sub. 97) drew attention to recent innovations including higher frequency minibus services, direct city express services, demand-responsive call-bus services, and door-to-door services between airports and country towns.

One of the successful elements of the reform experience in other countries has been the innovation introduced, such as the widespread use of higher frequency minibuses in the UK and taxi-bus services in New Zealand.

Management and work practices

Poor management and work practices can lower productivity because too many people and too much capital are used to provide a given level of service or to provide services no one wants to use. Both are evident in the way in which Australian bus services are provided.

The way labour is used is one of the major sources of productive differences between private and public urban bus operations. Inefficient management practices and corporate overheads also play a significant part. Hornibrook Transit Management criticised Brisbane Transport's new depot, saying:

... instead of building a \$20,000,000 monstrosity out at the Mount Gravatt area you build about half a dozen \$2,000,000 depots around the outskirts of the city so we save all this cost of time and mileage running vehicles (Initial hearing transcript, p. 331).

The Secretary of the Queensland branch of the Public Transport Union (Bus and Tram) stated that Brisbane Transport employs supervisors who:

... do what are really minor clerical duties ... they have some authority within those clerical duties which means that they are paid at significantly higher wages to do things like opening and closing depots, signing and signing-off people, checking to make sure that the bus operator is actually there and standing before them and doing things like handing out run boards and run prints and generally carrying out surveillance-type duties on the bus operators. (DR transcript, p. 439)

These thoughts were echoed by his counterpart in Perth when discussing the operations of the MTT.

The Victorian Government criticised past PTC management of Melbourne's bus services, saying:

Smaller buses, operated on more flexible routing, may offer improved frequency and longer hours of service. However, with less than a handful of exceptions, bus planning in Melbourne has been limited to routes which can be served by large standard buses. (Sub. 186, p. 26)

The terms and conditions applying to public service employment in the states and territories is usually extended to public bus operations. These are significantly more generous than those which apply to employees in the private bus sector. Chapter A3 reviews some of the policies which inhibit the cost competitiveness of public transport bodies in general. Brisbane Transport stated that relative to private operators:

... Brisbane Transport carries higher costs in the areas of superannuation, long service leave entitlements, sick leave accrual and termination entitlements. Furthermore, there may be constraints in that voluntary redundancy is the only option to shed excess staff ... (Sub. 99, p. 4)

The Commission received a range of evidence on inefficient workplace practices which occur in public bus operations but not in their private counterparts. Several sources pointed to the policy requiring bus drivers to return to the depot for meal breaks in Melbourne, Perth and Brisbane. The Victorian Minister for Public Transport recently drew attention to this:

Every PTC bus driver is obviously entitled to a meal break. But where, in the park? No. On the bus? No. Each driver must return to base not, though, on a scheduled bus service. The driver is in fact entitled to, and does, take an empty bus back to base — a door to door meal service. (Victorian Minister for Public Transport, 1993b)

At the initial Melbourne public hearings the Bus Proprietor's Association of Victoria stated:

... when you get those long distances away from depots and a driver having to return to a break you get a lot of empty buses running around. So we believe that we could probably save somewhere in the order of a quarter of the buses that are currently used by the government to operate the same set of services. (Initial hearing transcript, p. 931)

Multi-skilling, by both management and operations staff, generally appears to be a prominent feature of private, but not public bus operations. Mr Crawford of the Mount Barker Passenger Service stated at the initial Adelaide hearings:

... our three mechanics drive buses in the morning and in the evening for the short school runs ... So we don't have to employ additional drivers for that purpose. The manager of the business, who's a director also ... he does some driving; he drives services on a Saturday because we're up for double time or time and a half, whatever.

So he does those on a cross-country service to save money. (Initial hearing transcript, p. 144)

Table B3.5: Award comparison between STA (SA) and a private operator in South Australia

<i>Item</i>	<i>STA award^a</i>	<i>Private award^b</i>
Base wage rates		
Base award rate per week	\$442.80	\$346.00
Supplementary payment per week	\$ 72.80	\$ 48.20
Total	\$515.60	\$394.20
Hours of duty		
Base hours per week	38 hours	40 hours
Ordinary hours per shift (min to max)	7 to 7 hours 36 mins	5 or 6, to 6 hours
<i>Max spread of hours:</i>		
Straight shift - weekday	9 hours	11 hours
Straight shift - weekend	9 hours 40 mins	11 hours
Broken shift	12 hours	11 hours
Min interval in broken shift	2	-
Overtime and penalty payments^c		
Work outside max ordinary hours per shift and per week	First 3 hours: 0.5 Further hours: 1.0	First 3 hours: 0.5 Further hours: 1.0
Saturdays	0.5	0.5
Sundays	1.0	1.0
Broken shift penalties	Spread 9 - 10 hrs: 0.5 Spread over 10 hrs: 1.0	} }
<i>Straight shift allowance (weekdays):</i>		
Shift end 1700-1800	15% penalty on time after 1700	} No set allowances
Shift end > 1800	15% penalty on whole shift	}
Shift start < 0900	15% penalty on time before 0900	}
Annual leave		
No. of weeks per year	5	4
Annual leave loading	20.0%	17.5%
Signing on/off allowances		
Sign on, outfit, take bus from depot	15 mins	}
Sign on, no outfit, take bus from depot	10 mins	} No set allowances -
Sign off, bus to depot	5 mins	} local arrangements
Sign off, bus to depot, pay in	15 mins	} apply

a SA Tramway and Omnibus Award 1981 (as updated).

b Transport Workers (Passenger Vehicles) Award 1984.

c Penalty payments: 0.5 means time and a half, and 1.0 means double time.

Source: Australian City Transit Association Inc (Sub. 174, p. 17)

The awards under which public bus drivers are employed, compared with private bus drivers, are generally less flexible and result in less productive working time per shift. For example, in South Australia the State Transport Authority's award (see table B3.5) specifies payments for shift penalties and signing on/off allowances, whereas the private operator's award allows these

payments to be set locally — potentially giving more flexibility to management of the private bus company. The Commission received similar information describing the differences between MTT (Perth) and the Transport Workers' Union passenger vehicle awards in Western Australia.

Mr Gable (Bus and Coach Association of Queensland) believed work conditions are the major difference between the public and private bus operators in Queensland. At the initial Brisbane hearings, he said:

I think [the difference is] working hours probably. We find that the council is operating under a 38-hour week, whereas the private sector operates under a 40-hour week for starters. There are no rostered days off, there are no 10-minute breaks every few hours, there are no huge workshops and depots with very expensive staff amenities. Basically we employ people to do a job, and at the end of the time when they have completed that job, they go home, and they come back again to do the job the next day. (Initial hearing transcript, p. 316)

Comparative performance

The financial performance of Australia's public bus operators varies greatly. For example, ACTION recovers only 22 per cent of its operating costs commercially, whereas STA (NSW) recovers 48 per cent. Their demands on public finances range from just over 37 per cent of total revenue for Brisbane Transport to almost 72 per cent for ACTION (Steering Committee on National Performance Monitoring of Government Trading Enterprises 1993). Australia's public bus operators incurred an aggregate deficit of over \$330 million for the year to 30 June 1993 (Preliminary ACTA data). Private operators on average perform better than public operators on financial measures (see table B3.6).

Table B3.6: Some financial indicators for private and public bus operators in Australia^a

<i>Partial performance indicator</i>	<i>Public operators</i>	<i>Private operators</i>	<i>Difference</i>
Revenue per vehicle km ^b	\$1.48	\$2.30	(\$0.82)
Revenue per passenger	\$0.98	\$1.85	(\$0.87)
Ratio of revenue to costs	0.89	1.04	(0.15)
Capital cost per vehicle km ^c	\$0.46	\$0.43	\$0.03
Total cost per passenger	\$2.40	\$1.79	\$0.61

a Data are 1991-92 averages.

b Excluding deficit and CSO funding.

c Accounting capital cost.

Source: Hensher and Daniels 1993, p. 26

Because of the dominance of public bus operators in major cities, an obvious first question is the efficiency with which they provide services. Current arrangements generally give them exclusive and permanent rights to their catchment areas. In some cities it is possible to compare the efficiency of these public operators with private operators who have been granted similar exclusive rights over areas or routes.

Table B3.7: Public and private bus operations in Australia^a

<i>Partial performance indicator</i>	<i>Public operators</i>	<i>Private operators</i>	<i>Difference</i>
Total cost per vehicle km	\$3.31	\$2.18	\$1.13
Labour cost per vehicle km	\$2.01	\$1.06	\$0.95
Labour costs in overheads	18.7%	15.6%	3.1%
Non-labour maintenance cost per km	\$0.17	\$0.18	(\$0.01)
Average annual km per vehicle	48 790	45 850	2 940
Labour cost per paid hour	\$17.52	\$16.98	\$0.54

a Data are 1991-92 averages.

Source: Hensher and Daniels 1993, p. 26

Partial productivity measures

As part of this inquiry, the Commission contracted a study by the University of Sydney's Institute of Transport Studies (Hensher and Daniels 1993) to measure the technical productivity of Australia's bus operators (see appendix E). The partial performance indicators (see table B3.7) show that on average, public operators' unit costs per vehicle kilometre are 50 per cent higher than the private operators. Private operators provide a lower cost service per unit of service on most indicators.

Table B3.8: Labour productivity ratios in New Zealand and Australia

<i>Operator</i>	<i>Total staff per million bus kms^a</i>		<i>Total staff per million bus hrs</i>	
	<i>Most efficient</i>	<i>Least efficient</i>	<i>Most efficient</i>	<i>Least efficient</i>
Australia				
Government operator (1991/92)	59.8	43.3	1 332	1 078
Private operator (1991/92)	37.6	27.5	808	661
New Zealand				
Government operator (1989/90)	96.1	56.1	1 345	1 138
Government operator (1991/92)	64.6	30.5	904	619
Private operator (1988/89)	53.7	23.6	na	na

a Staff refers to 'fulltime equivalent' staff.

Source: Travers Morgan (NZ) Ltd 1993a, Table 4.1, p. 37

These results are confirmed in similar partial indicators of performance prepared by Travers Morgan, also as an input to this inquiry (see table B3.8) — see appendix F for a summary of this study. These indicators concentrate on labour productivity, and show considerably lower input labour requirements for private operators compared with public operators.

Similar differences in productivity between the private and public sectors were evident in the UK and New Zealand before their reforms, when operators generally had exclusive rights to passengers (see tables B3.8 and B3.9).

Table B3.9: Total staff per million bus kms in the United Kingdom

<i>Operators</i>	<i>1985/86</i>	<i>1990/91</i>
London Buses	98.1	75.9
Metropolitan Passenger Transport Companies	73.7	53.2
National Bus Company/ Independents	40.9	33.8
All	52.4	39.1

Source: Travers Morgan (NZ) Ltd 1993a, Table 4.1, p. 3

The ACT Government recently released the *ACTION Bus Benchmarking Study*, undertaken for the ACT Department of Urban Services by Travers Morgan (1993b). It found that:

On any measure of costs, ACTION's unit costs are substantially higher than any of the other operators assessed:

- around **25% higher** than the costs of the next highest cost operator [STA (SA)];
- around **35% higher** than the average costs of the other three public operators [STA (SA), Brisbane Transport and Transperth];
- around **45% higher** than the costs of the lowest cost public operator;
- around **double** the costs of the five private operators. (Travers Morgan (NZ) Ltd 1993b, p.i) (Bold in the original.)

The ACT Government, in commenting on these findings, said that ACTION 'would have needed to reduce its subsidy by \$15 million to achieve the average unit costs of the public operators and \$38 million to achieve the average unit costs of the private bus operators'; yet it 'has exceeded its target set for 1992/93 deficit reduction and is on target for 1993/94' (Sub. 228, p. 4). The ACT Government aims to reduce the current annual subsidy by \$10 million over three years.

Mr Hughes, an inquiry participant, observed that:

... the public subsidy of Canberra's government-run bus system, ACTION, is equal to \$750 per household, and the average cost of provision per trip is roughly the same as for the heavily regulated taxi system which has among the world's most expensive licences to operate. Despite the subsidy of nearly \$3 per section (the typical return trip

has four sections), ACTION accounts for about 4% of total passenger traffic. (Sub. 34, p. 1)

Total factor productivity

A more comprehensive measure of productivity performance is given when all inputs (and outputs) are measured simultaneously and compared to create a measure of total factor productivity (see Hensher and Daniels, 1993).

Measurements of total factor productivity in urban bus services formed part of the study undertaken for this inquiry by the Institute of Transport Studies.

It is important to note here that measurements are based on data for one year only (1991-92) and from a (necessarily) limited sample of 24 private operators. The Bus Proprietors' Association (Vic) cautioned that 'particular problems arise in obtaining consistent revenue data across all operators, because of the differences in interpretation of 'revenue' in different States and between public and private operators' (Sub. 270). The results should therefore be interpreted with some caution. Nevertheless, they provide the most comprehensive indicators available of performance in the urban bus industry.

The bus industry (both public and private) has expressed general support for the study. The Institute of Transport Studies will continue it for the year 1992-93, under the title *Mercedes-Benz Performance Benchmarking Program*, with more detailed surveys from a larger sample of bus operators. The Commission welcomes this development.

The initial study supports the conclusion that **private companies generally provide bus services more efficiently than public operators**. On the measure of total factor productivity which adjusts for advantages of scale and scope enjoyed by some operators, the private operators are 67 per cent more productive in carrying passengers and 120 per cent more productive in producing bus kilometres.

Table B3.10: Comparison of private operators with their own state public operator

<i>Location</i>	<i>TFP on passengers carried</i>	<i>TFP on vehicle km travelled</i>
Sydney private operators are ..	12% less efficient than STA	45% more efficient than STA
Brisbane private operators are ..	4% less efficient than BCC	37% more efficient than BCC
Melbourne private operators are ..	19% more efficient than PTC	29% more efficient than PTC

Source: Hensher and Daniels 1993, p. 39

State by State, private operators are significantly more efficient than their public counterparts on the bus kilometre measure. However, the results are less

conclusive when passengers carried are used as the output measure (see table B3.10).

Public operators usually service the dense inner areas of their city. Because of the higher patronage density it is easier for the incumbent operator to attract patronage, compared with the lower densities in the areas available to private operators. One implication of the study is that private operators might achieve considerably better results than the public operators were they given access to the territory currently covered by public operators. The authors of the study observed that:

... the advantage conveyed to a public operator through location is not translated into action which ensure that inputs are used to produce intermediate outputs at lowest cost. Thus if private operators were to supply the equivalent service currently offered by the public operators in the public operators' service area, we should expect a significant improvement in GTFPpass [output in terms of the number of passengers carried], given GTFPvkm [output in terms of the kilometres travelled]. (Hensher and Daniels 1993, p. 44) (Italics in the original)

B3.4 Issues in reform

The significant differences in productivity between public and private operators, the equally significant productivity differences between different private operators, and the unexploited scope for service innovation suggest that there are likely to be substantial gains from reforming the institutional arrangements that have applied to the provision of urban bus services.

Experience in the UK and New Zealand indicates that some of the largest gains from easing the limits on competition were achieved by public operators. These came through changes in work practices and improvements in productivity by government regulators, management and the workforce. In the Travers Morgan study undertaken for this inquiry, aggregate labour productivity indicators for New Zealand show government operators improved 33 per cent over the course of reform; in London the public operator improved by 23 per cent and the public operators in the UK outside of London by 28 per cent (see tables B3.8 and B3.9).

There appear to be two broad ways of achieving greater competition in the provision of bus services. One involves allowing access to any potential operators to all bus markets at all times. The other involves periodic competition for the exclusive right to provide all services in a particular area or on a particular route (contestability). Both approaches have recent precedents in other countries, although the details of individual regulatory arrangements can, and do, differ.

Open access

Open access involves a completely deregulated bus market with no restrictions on the provision of bus services by any potential operator, except for those relating to safety. This creates an environment in which the threat of competition is continuous.

Open access allows suppliers to design, organise and provide services at fares in line with market preferences. It has the potential to achieve the lowest input costs and encourages services to be differentiated by both quality and price in response to passenger demand. Smaller companies, some community-based cooperatives or taxi operators may well enter the market for commercial bus services.

One concern often raised about open access is that it may lead to a drop in safety standards, with situations such as vehicles racing to get to a bus stop first. Problems like these should be avoided by adequate policing. There are also concerns that deregulated services would result in numerous changes in timetables, a lack of security in service provision, and a loss of multi-operator ticketing, that would confuse passengers and result in a loss of patronage.

There are very few truly deregulated bus markets in the world. The most well-known policy changes are those introduced in metropolitan UK outside of London and in New Zealand — see boxes B3.1 and B3.2. However both these reform programs allowed local authorities to intervene, by specifying and tendering out operating contracts for loss-making community services with the local authority wanted to see supplied. Such intervention, in one form or another, seems likely to be required by governments in Australia.

Cost savings and service innovation

Introducing more competition in a bus market will encourage operators to develop new routes, introduce more efficient work practices and use a range of vehicles to better serve passengers at the lowest cost possible.

The NSW Bus and Coach Association (Sub. 97) noted that benefits of open access in the UK have included a reduction of up to 70 per cent in operational and planning costs, with a consequent reduction in taxpayer support. Subsidies paid in New Zealand have also fallen, by between 10 and 50 per cent.

Reform has been accompanied by innovation in discount fare schemes and higher frequency services introduced in the UK. In addition to increased frequencies, minibus services have brought advantages such as the capacity to enter narrow-street housing estates, and to lower operating costs. Operators negotiated lower pay and conditions for the drivers (made possible by parallel labour market reforms) and the minibuses do not require specialised mechanics.

Box B3.1: Deregulation in the UK — different experiences

There were three parts to the reform of urban bus services in the United Kingdom outside of London: the first deregulated entry to bus services; the second allowed local authorities to supplement the commercial service by competitive tender; and third the National Bus Company was split up and sold to the private sector, and municipally owned companies were placed under British companies legislation and privatised.

In general the reforms led to: increases in the total bus miles run and in real fares, and falls in operating costs, passengers and public subsidy. However, the NSW Bus and Coach Association warned that ‘care should be taken when viewing system-wide statistics to ensure that sight is not lost of individual performances that might be at the extremes of the system-wide average’ (Sub. 97, p. 11). It is true that the picture is very different in different areas of the UK. For example, the experiences of Oxfordshire and Greater Manchester vary greatly.

Since 1987, service levels in *Oxfordshire* have doubled in many cases — weekday frequencies of every 2, 3, or 4 minutes operate on city routes, services operate until midnight and a comprehensive service is provided on Sunday. Fares are now market based and have fallen in real terms on most routes. Passengers in Oxfordshire have a choice between two main operators. Patronage has increased by up to 70%. ‘Travelcard’ type tickets are offered by both operators but they are not transferable.

On most established routes double-decker buses compete with smaller vehicles. Other routes have been developed using small buses. Initially frequent service changes by both operators created some instability, but timetable alterations now reflect response to passenger demand instead of attempts to take market share from competitors. Operators are making sufficient profits to invest in new vehicles.

The UK House of Commons Transport Committee (1993) reported that the experience in Oxfordshire has been ‘stimulated by Oxford City Council’s Balanced Transport Policy, which creates an environment conducive to the use of public transport.’ As part of this package, the Oxford Bus Company recently introduced 18-seat battery-powered buses on city centre services.

In contrast, *Greater Manchester* has seen continual and extensive competition amongst bus operators, with over 60 operating in mid-1993. Between 1 500 and 2 000 service changes have been made per year. These changes may be minor in terms of the timetable as a whole, but they are significant to passengers using that service.

While the total bus subsidy has fallen 15 per cent from 1985/86 to 1992/93, patronage has fallen by 30 per cent over the same period. Fares have risen by over 30 per cent in real terms. While a multi-operator travelcard has been preserved at a higher price, the multi-journey tickets have been abolished with the exception of a 10 journey concessionary tickets.

Sources: Tyson 1992 and UK House of Commons Transport Committee 1993

However, there have been some concerns that the pressure of competition in the UK and New Zealand has resulted in an increase in the age of the bus fleet, thereby reducing service quality and risking safety standards. In New Zealand some regional councils have tightened vehicle quality requirements for licensed operators. A notable result of the reform in New Zealand has been the replacement of conventional large buses with taxi buses, operated by taxi companies — see box B3.2.

Effect on patronage

Reform in other countries was initially criticised because previously coordinated services and fare structures did not survive the reforms and patronage fell as bus users became confused by the changes, particularly in the UK (see box B3.1). While patronage was clearly affected by a combination of fare increases and, more recently, the recession, some have concluded that other factors also contributed. On the basis of the UK experience, the Australian Bus and Coach Association concluded that:

There can be simply no guarantees that a deregulated market would come close to achieving the same goals of reliability, quality, service frequency and safety as effectively delivered by the existing system (Sub. 78, p. 17).

The NSW Bus and Coach Association claimed that if a number of operators operate along the same route, ‘there can be a decline in the market-responsiveness, suitability and overall efficiency of the service, with resultant patronage and revenue declines’ (Sub. 97).

While the weight of opinion is that the bus industry does not enjoy economies of scale in service provision, some commentators (such as Evans and Hensher) argue that there may be a natural monopoly based on declining *user* costs with an increasing scale of bus services — see chapter A4.

The UK Government had not expected this to be an issue. Its White Paper *Buses* which proposed the deregulation of buses in metropolitan UK (outside of London), stated:

It is certainly obvious that the traveller wants to make convenient journeys, to travel throughout the urban areas, to rely on comprehensive information about the services available. But if they are to stay in a free market operators will have to meet the needs of the customers as the demand arises. (*Buses* p. 13 as quoted in Evans 1990)

The Commission’s discussions in the UK suggest that instability in the provision of urban bus services was confined to a few towns and metropolitan counties, such as Greater Manchester, and then for an initial period only — see box B3.1.

Box B3.2: New Zealand's reform experience

In 1989 the *New Zealand Transport Law Reform* legislation decentralised public transport policy to the 14 regional councils. Any approved operator can begin operating commercial services (those not needing a government subsidy) once they notify the regional council. The councils must prepare a transport plan specifying the routes to be subsidised. Such routes must be put out to tender. Three to five year contracts are usual. The tenders are sometimes evaluated on the 'lowest price conforming tender' basis while in other cases tradeoffs are made between price and service quality.

The councils operate public transport through corporatised enterprises only. Until 1993, regional councils were allowed to give preference to existing council bus companies by a margin of 25 per cent. Since July 1991, the number of bids for each tender has increased.

The reforms have engendered dramatic change within the municipal bus operators, while private operators remain concerned with preserving their traditional markets. Consequently, while work practices and productivity among private operators have hardly changed, the municipal operators have become much more like private operators. The total public funding for all nine regions from 1990/91 to 1991/92 fell by 18 per cent.

Total public funding reductions for some regions from 1990/91 to 1991/92

	<i>Total public funding 1990/91 (NZ\$m)</i>	<i>Reduction (%) in 1991/92</i>
Auckland	48.0	9.8
Canterbury	14.8	32
Man-Wang	1.4	68
Taranaki	1.1	100
Wellington	37.5	16

Source: Travers Morgan 1994 (forthcoming)

Relative to the UK, the extent of service innovation in New Zealand has been small and service, in terms of vehicle kilometres, has changed very little — only 9 per cent of the tenders were awarded to taxi or van operators and 5 per cent to companies using mini or midi buses. This is to be expected given that by July 1991, only 13 per cent of the pre-reform bus kilometres were registered as commercial. However conventional large buses have been replaced with taxi buses in two medium sized towns, Palmerston North and Wanganui.

Some regional councils are now tightening vehicle quality standards after the average age of buses increased sharply. Fare increases have been modest over the last three years — the regional councils have generally been keen to retain previous fare levels and structures. Wallis (1993) reported that prior to deregulation, patronage was falling around 10 per cent per year. In 1993, the underlying rate was estimated at around 5 per cent or less, despite a fall of about 5 to 10 per cent when the reforms were initially introduced because of unfamiliarity and the bad publicity which resulted.

Source: Wallis 1993, Travers Morgan (NZ) Ltd 1994 (forthcoming)

Whilst deregulation and privatisation in urban transport in the UK were initially opposed by many in the bus industry and local government, those organisations which accepted, accommodated and planned for the new regime demonstrated that both cost and service benefits could be achieved.

Supplying community services in a 'deregulated' market

Under open access, governments may wish to ensure the supply of certain 'community services' via contracts with individual operators. This has several implications.

Firstly, it means that governments need to keep a close watch on the nature and the extent of the services that are provided commercially. Community services are essentially supplements to these services and will need to be commissioned around them. In New Zealand, licensed operators are required to notify the relevant regional council of their intention to start or vary any service at 21 days notice. This gives the council time to specify and publicly tender out a contract for whatever additional services the council deems to be socially necessary — see box B3.2. A similar system operates in the UK.

Secondly, it is clear that 'deregulating' in this way does not eliminate the need for government subsidies or taxpayer support, although it should ensure that their value to the community is maximised. The NSW Bus and Coach Association observed that such reform 'leads to a re-direction of subsidies from system-wide to time-period-specific, though at a reduced total level (because of the competition on the supply side)' (Sub. 97, p. 10).

And thirdly, the rules governing the process of deregulation and of tendering out community services must be carefully framed to minimise strategic behaviour by operators. For example, in the initial round of tenders in New Zealand some operators notified some unprofitable services as being commercial in order to delay the granting of contracts for community services to rivals. These registrations were later withdrawn, only to be replaced by further registrations for slightly modified commercial routes which again prevented the community service contract being issued.

Box B3.3: Bus franchises in Nordic countries (Part 1)

The four Nordic countries, Sweden, Denmark, Norway and Finland, have all introduced or plan to introduce competitive tendering of their urban bus services.

Sweden

In 1989, the Swedish Parliament passed legislation eliminating exclusive licences to provide public transport services and introducing a competitive tendering system. The legislation's aim was to strengthen the planning powers of county councils, and to discipline operators via competitive tendering. County transport services became the responsibility of the council alone or joint responsibility of all the county's municipalities.

The county transport authorities are in charge of all planning, including design of the network, timetables and fares, but the actual operation is put out for tender. The tenderers bid a gross rate for a 3 to 5 year contract period. Some authorities specify service quality in terms of maximum average age and maximum age of oldest bus used, user friendliness for disabled persons, and exhaust emissions. The county councils have discretion over their selection criteria, but there is political pressure to give preference to the lowest priced tender. Tender award details are made public. Exclusive licence holders can require a public buy-out of their assets, provided they do not participate in competitive tenders. Average cost savings have been around 5 to 15 per cent.

In ***Göteborg*** the public transport authority (Stadstrafiken) is responsible for network planning, service standards, finance and fares policy, and tendering out services. In 1993 one third of the routes, mainly in the western part of the city, were tendered in five packages of 5 to 20 buses. The Stadstrafiken specified hours, the route network, headways and timetables, average fleet age, maximum age of buses used, emission and noise limits.

The services were awarded to the city operator (55%) and a private company Linjebuss (45%). The city operator had three years to restructure before tendering was introduced. Operating costs of the bus services have fallen by 45 per cent from 1989 to 1993.

Stockholm County Council was already responsible for public transport and the support of Stockholm Transport (SL), but the new legislation encouraged a reorganisation of SL. SL has separated out strategic planning (which remains centralised), service planning (which is delegated to five area units), and operations (which are split into 25 smaller units). Operations have been corporatised and results can be compared to other operators. SL's services will be tendered out within the next few years.

Sources: Cox and Love 1991, Cox and Love 1994 forthcoming, Gwilliam and van de Velde 1990, Gerofi 1993, Jansson and Wallin 1991.

Box B3.4 Bus franchises in Nordic countries (Part 2)

In 1989 the parliament of *Denmark* enacted competitive tendering legislation for *Copenhagen* public transport bus services. The Hovedstadsomradets Trafikselskab (HT) [Capital Region public transport company], which is responsible for general transport planning, preserving network and fare integration in association with the railway companies, was required to tender 45 per cent of their bus services by April 1994.

Before the requirements were introduced, 18 per cent of bus services were operated under subsidy agreements by private operators. These agreements were terminated and the services were the first to be competitively tendered. HT does not compete for tenders. All buses have HT livery.

Legislation allowed for maximum contract length of 8 years, however HT has preferred a 4 year maximum tenure. They have kept individual tender packages small and contract prices are fixed for the first year and thereafter indexed. Tenderers have been selected on the basis of: financial ability, experience, service quality and price. Cost savings have averaged 10 per cent.

Norway plans to introduce competitive tendering over the next ten years. The maximum contract length will be three years with one renewal of two years allowed. They will be allocated on the basis of gross costs. At present, operators are licensed by local authorities to provide services.

Finland began converting to competitive tendering in 1993.

Sources: Cox and Love 1991, Cox and Love 1994 forthcoming, Gwilliam and van de Velde 1990

Tendering exclusive franchises

Tendering for the exclusive right to provide services introduces competition for, but not in, the particular bus market. Under this approach, the role of the government is to:

- determine minimum service levels;
- develop requests for tenders;
- evaluate tenders;
- monitor service; and
- coordinate services and fares.

Exclusive franchises can take one of two broad forms:

- the right to provide specified services on nominated routes; or
- the right to serve an area, with discretion as to the services provided.

When route services are specified, the gains arise solely through competition to reduce the costs of provision; these gains can, however, be substantial. When

exclusive franchises for areas are involved, the successful tenderer also has scope to design services to best suit customers, although this design may be constrained by the need to observe minimum service requirements.

A number of participants supported tendering exclusive franchises as a way of introducing competition without losing the user benefits of coordination. The Coalition of Urban Transport Sanity claimed that:

The British system of privatisation and deregulation has achieved a short-term financial goal, but at the expense of longer term social and environment factors. In contrast, Gothenberg [Göteborg] in Sweden has privatised some bus services, while retaining a regulated framework. This approach has achieved at least the same cost reductions that have occurred in the UK, but retained a high quality of service within an integrated network. (Sub. 250, p. 11)

Stockholm, Copenhagen and London have also introduced competitive tendering into their urban bus services. (These reforms are reviewed in boxes B3.3, B3.4 and B3.5.) This approach has also been used in United States cities for many years. Teal (1989) reported that in 1985 over 300 US public agencies tendered for over 400 separate public transportation services. In California, over 200 separate services were run by private transport operators, including all of the transit services provided by the Counties of Los Angeles and San Diego. Cox and Love (1989) reported that while less than 10 per cent of all bus services in the US is competitively tendered, more than half the 'paratransit', dial-a-ride and demand responsive services, largely for the disabled and elderly, is competitively tendered.

The environment created by competitive tendering can also encourage public operators in the same city to lower their costs, despite not being required to tender for the services they operate. This outcome was evident in London Transport's bus operations: its costs went down across the board, not just on the tendered routes — see box B3.5.

Competitive tendering of exclusive franchises allows governments to retain a higher degree of control over services than does open access. This control can, and has, been used to retain integrated networks and maintain service coordination throughout the reform process. And yet the cost savings from competitive tendering have been significant in countries where it has been introduced — see table B3.11.

Despite this, the Bus Proprietors' Association (Vic) claimed that:

Competitive tendering in the private bus industry is not necessary to achieve efficiency in service delivery. There is ample evidence to suggest that the industry is already relatively efficient and further efficiency gains are unlikely to be achieved through a tendering process. (Sub. 270, p. 2)

Table B3.11: Cost savings from tendering bus services in other countries

<i>Source</i>	<i>Country</i>	<i>Cost savings</i>
Cox and Love (1991a)	US	30% (average)
Cox and Love (1991a)	Sweden	5 to 15%
Cox and Love (1991a)	Denmark	10% (average)
Teal (1991)	US	25 to 30%
Hensher (1988c)	UK (London)	20%
Glaister & Beesley (1991)	UK (London)	19 to 25%
Wallis (1992)	NZ	30%

Sources: Cox and Love (1991a)
Stanford (1992) p. 8
Wallis (1992)

While it is clear that the private bus industry is efficient relative to the public bus operators, the Hensher and Daniels (1993) study also illustrates a great deal of variation in performance among private bus operators. Even after taking into consideration the differences in the nature of services provided by more specialised operators, this range of performance points to the effect of a lack of competition provided by a regulatory environment which awards (often on-going) monopolies to private operators.

Allocating franchises

Franchises can be allocated in three ways: on the basis of costs, subsidy or services to be provided.

The *cost-only* franchise involves the prospective operator tendering an estimated 'cost' (which includes a profit margin) for the required service — the tendering authority collects all farebox revenue. By awarding the contract on the basis of lowest 'cost', the operator has no responsibility for revenue and therefore has little incentive to encourage patronage or increase revenue. Indeed operators can lower operating costs by actively discouraging patronage:

... the operator has no incentive to improve the timetabled efficiency of the service, since any curtailment of unnecessary journeys or curtailment of inefficient operating practices will lead to a decrease in revenue for the operator ... Consequently, there is an in-built generator of increased subsidy requirements ... (NSW Bus and Coach Association, Sub. 97, p. 8)

Box B3.5 Competitive tendering in London

In 1984 the *London Regional Transport Act* was passed, which transferred control of London Regional Transport (LRT) from the Greater London Council to the Secretary of State for Transport. A separate unit of LRT — the Tendered Bus Unit — was set up to administer competitive tenders for London's bus services.

The first routes tendered were poor financial or operational performers. The cost contracts are for up to three years with one renewal of up to three years if performance is satisfactory and prices are reduced in real terms. LRT specifies route alignments, timetables, fare structures and service and vehicle specifications. LRT has entered into net cost contracts for those routes not subject to tender. By 1991, 60 per cent of tendered route services (35 per cent of all services) were operated by one of the twelve subsidiaries of 'London Bus'.

Contracts include financial penalties. Performance is monitored by inspectors and contract operators' returns. The LRT also issues formal warnings for poor performance and several contracts have been revoked as a result of accumulating excess warnings.

The bus operating costs for LRT as a whole have fallen by 20 per cent since 1986/87. Tendering has also pressured the subsidiaries operating on the non-tendered routes to improve. Costs have fallen mainly because of changes in work practices. In 1988, London Buses employed 73 per cent of the number of staff it did in 1983 to operate a vehicle fleet 94 per cent its former size and carrying 5 per cent more passenger miles (Higginson 1989). Travelcards and other intermodal tickets remain.

London's bus services out-perform metropolitan UK services in some cases – see below.

Comparisons between London and UK metropolitan areas 1985-86 to 1990-91

	<i>Percentage change</i>	
	<i>London</i>	<i>Metropolitan UK</i>
Patronage	+3.9	-26.1
Vehicle kilometres	+11.4	+12.9
Passengers per vehicle km	-6.7	-34.6
Operating cost per vehicle km*	-20.0	-40.0
Operating cost per passenger*	-16.0	-8.0
Fares	+49.9	+78.7
Real fares	+12.0	+31.8

Source: Tyson (1992) quoting Bus & Coach Statistics: Great Britain 1990-91 Transport Statistics for London 1980-1990

* excludes depreciation

Sources: Cox and Love 1991, Higginson 1989, House of Commons Transport Committee 1993 and Tyson 1992.

Under a *minimum subsidy* franchise for loss-making routes the prospective operators submit bids for a subsidy to operate the services on specific routes and at specified maximum fares. For commercial routes operators offer a *maximum price* to government to win the contract. Once operating, the bus operator collects and keeps the fares. The incentives to provide a good level of service primarily come from the operator's motivation to maximise revenue, and the threat of losing the franchise or suffering penalty provisions.

A third approach involves more administrative discretion by the tendering authority. This is to allocate the franchise on the basis of *maximum level of services* provided for a *given subsidy or price*. This is the approach the Queensland Department of Transport plans to take:

Where tenders or expressions of interest are called for, then evaluation will be based, amongst other things, on the extent to which the minimum services levels of the proposed Service Contract are exceeded. The subsequent services and levels offered by the successful tenderer will then become the standard to be achieved for the duration of the contract. (Queensland Department of Transport 1994a, p. 4)

Under this approach, the minimum contract price or maximum amount of subsidy the government is willing to pay must be specified in order to avoid servicing beyond what is justifiable for particular bus service routes or areas. The problem is that, without stating a specified subsidy, there is a risk that the service levels achieved by the incumbent operator will become the minimum to bid at the next tender. This may encourage an ever increasing level of service without regard for the level that is appropriate, at an ever increasing cost to government.

Allocating franchises on the basis of price *and* service levels (above minimum required levels) involves complex tradeoffs between two sets of characteristics. To ensure a fair and genuinely competitive tender, the evaluation procedure must be transparent. (The Victorian Government appointed a chartered accounting firm to evaluate its tenders.) The weightings given to different service characteristics and price, by which the tendering authority will be guided, must be public before expressions of interest are called.

Area franchising

Franchising an area, that is contracting private operators to plan as well as operate services in a defined bus market, offers the possibility of greater savings in costs than franchising specific routes. The NSW Bus and Coach Association reported that:

... in the United Kingdom prior to de-regulation, the Government found that some of the more costly local government transport corporations in Northern England which ran at 7 employees per bus (compared to achievable averages of less than 3 or even 2 employees per bus), would only have shed under 2 employees if the operations (i.e.

driving and maintenance) were contracted out while the planning was retained in local government control. Only if the planning was also contracted out, could the additional 3 employees per bus be also shed. (Sub. 97, p. 8)

Such franchises require the city to be served by buses to be divided into a number of franchise areas. The planning and operating functions within each area are then the responsibility of the franchisee. The franchisee would plan the routes and the timetable in response to commercial considerations. The NSW Bus and Coach Association particularly supported giving the planning function to the operators:

The bus drivers, mechanics and other blue-collar workers are contracted out (usually privately owned) in a competitive tendering [of operating contracts] environment. Meanwhile, the planners, administrators and other white-collar staff are in the public sector and are protected from competition.

Experience interstate and overseas has shown that the reverse is often required for larger regional transport networks. The bus drivers are, by necessity, highly efficient employees. Yet the planning process, through lack of competition, has often developed public transport systems that are not responsive to consumer requirements and are structured in a way that ignores efficient resource utilisation.

It is believed that competition should be encouraged in all facets of passenger transport, including planning. (Sub. 97, p. 7)

Mr Hughes also argued that, if tendering leaves the management structure of present public bus operators unchanged, 'tendering may achieve a more limited improvement in productive efficiency than we might hope for', and that there is also:

... the question of fairness in placing the burden of reform on drivers and mechanics, for example, while leaving middle and senior management relatively unaffected (Sub. 300, p. 5).

The franchised operators would be required to meet minimum service and maximum fare standards. This should result in services at lower cost than would be the case with operators who own their service rights in perpetuity.

Relatively few commentators have attempted to estimate precisely the administering and monitoring costs under competitive tendering. Teal (1989a) estimated that for relatively large contracted services, it appeared the additional costs for contract administration and service monitoring would be in the 3 to 10 per cent range. However these costs have been absorbed by governments in other countries, notably the United States, Sweden and the United Kingdom (in both the Metropolitan counties and in London) and they have still been able to reduce their financial support for bus services.

Administering tenders for exclusive franchises

The *NSW Passenger Transport Act 1990* introduced a system of contracting private bus companies to operate services in the Sydney region. Under the Act bus operators are required to receive relevant accreditation for this type of service and negotiate and enter into a performance-based service contract with the Director-General of Transport. The NSW Department of Transport describes the legislation as ‘introducing greater competition into the local bus industry and allowing market forces to remove inefficient or low-quality services’ (Sub. 178).

The NSW system differs from a fully competitive process in several ways. First, and most fundamentally, an incumbent is guaranteed automatic contract renewal after five years unless the operator fails to operate the service (ie. the contract is ‘grandfathered’). As the NSW Bus and Coach Association (BCA) stated at the Commission’s initial public hearings in Sydney:

The present franchises are awarded to existing operators if they were agreeable to comply with the requirements ... of service levels, fares ... (Initial hearing transcript, p. 780).

The Central Sydney Transport Group pointed out:

... the only method of disciplining a bus company is for the Department of Transport to withdraw that company’s ‘franchise’ for a territory. This would be such a draconian action that it is unlikely that it would ever be taken. (Sub. 82, p. 8)

However, at the draft report hearings, the BCA claimed that a number of franchisees have in fact lost the right to operate for not meeting minimum service levels — usually mechanical problems. The Commission tried, but was unable to verify this with the NSW authorities.

Second, there is no competition for the rights to operate the bus services provided by the STA (NSW).

Third, the evaluation system is *seen* to lack transparency. Expressions of interest are called on the basis of certain minimum service standards and the selection committee must choose the successful tender on the basis of a combination of service and price characteristics. As the BCA pointed out:

... consequently the selection committee has to be of a high calibre, [so] that the participants and the public and everybody else have confidence that it’s a fair selection committee (Initial hearing transcript, p. 783).

However, such public confidence may not exist in NSW. A number of participants questioned aspects of the NSW selection process. As Ettinger House stated:

... the criteria for the award of franchise must incorporate a mechanism that can facilitate public accountability so as to ensure that operators are meeting the transport

needs of the people. The system that is presently in use in NSW is lacking this element. (Sub. 216, p. 1)

Victoria is moving towards a more competitive contract system. The tenders were evaluated by the accounting firm, Price Waterhouse, independently from the Department of Transport and the Public Transport Corporation. Several contracts awarded by the Victorian Government in August 1993 transferred exclusive rights to operate services within franchise areas of Melbourne to the National Bus Company (a Sydney-based company). The Company will keep farebox revenue and be reimbursed for concession fares, but not child fares, it is required to offer. As the news release announcing the winning tenders stated:

These are performance-based contracts and there will be no operating rights or routes for life. The ultimate sanction of retendering at any stage of the contract, if contract requirements are breached, will ensure that customers get a consistent quality of service.

... Operators will be free to please their customers however they like so long as they do not venture below the minimum service levels or above the maximum fare levels. (Victorian Minister for Public Transport 1993, p. 2)

The desire for innovative improvements to bus services is reflected in the tender documents which state 'all tenders containing innovative improvements to current bus services will be given detailed consideration' (Victorian Department of Transport 1993b).

The franchise period

A key issue is the appropriate length of the contract. In its draft report the Commission suggested a period of, say, three to five years. A number of participants expressed the opinion that three years was too short. Some pointed out that an urban bus has a useful life of up to fifteen years and claimed that operators should be able to amortise the entire value over the length of the initial or remaining franchise period: so the shorter the franchise period, the higher the return required to be earned through higher fares or subsidy. Hornibrook Bus Lines stated that they:

... believe that the banking system will not provide funding on this basis, unless the price submitted enabled a full recovery of capital invested over that period, making the whole process financially unrealistic for Government (Sub. 206, p. 5).

Hornibrook Bus Lines Group considered that already developed areas have a greater chance of getting tenders for short periods depending on the investment requirements. However, bus service operators in newly developing areas would need longer terms in order to develop the market.

The Queensland Government has responded to such concerns by suggesting a franchise period of five years for its commercial contracts and offering the

contract holder one further contract 'if he/she has met or exceeded the minimum performance standards and conditions of the previous contract' (Queensland Department of Transport 1994). The Bus and Coach Association (SA) also supported this approach:

To commit capital to such a project the minimum duration should be 5 years — with the right of renewal of 5 years — with performance standards (Sub. 204, p. 1).

It is important to remember that under widespread competitive tendering of bus franchises, other aspects of the urban bus industry may also change. For example, truck leasing is a common and accepted practice in the competitively more mature road freight sector. The second hand bus and bus leasing markets may well improve. Additionally, previously dominant public transport agencies may offer their bus fleets for lease to successful tenderers, so that new entrants and smaller operators are encouraged to become significant competitors. The PTC in Victoria has leased 240 of its buses to the National Bus Company until the Company takes delivery of its own (smaller) buses.

The Commission acknowledges the arguments against too short a franchise period, but is concerned to ensure the benefits of contestability are maintained. Accordingly it recommends that franchises be for fixed periods of up to seven years.

Competitive tendering can be implemented quickly

Experience elsewhere suggests that competitive tendering of exclusive licences can be introduced quickly:

- in London, the tendering body allows seven to eight months for the entire process — two months for tenderers to prepare their bids, three months to evaluate them and three months for the chosen operator to begin the bus service;
- in New Zealand, operators could notify the service they wanted to operate from December 1990 to January 1991; during February and March the regional councils considered what additional services were required and issued Requests for Tender; in April and May operators could submit tenders and the successful tenderer began services on 1 July 1991; and
- the Victorian Government announced in January 1993 it was going to tender out the bus routes previously run by the PTC. Tenders were open until 28 May 1993, evaluation took place over a couple of months and the new services began operating on 28 December 1993.

B3.5 The Commission's reform options

Bus systems throughout Australia can and should be improved. Drawing on practical experience in Australia and other countries, it is possible to refine the broad approaches to reform outlined above. The Commission considers that the objectives of reform should be to:

- **provide a good quality service at the lowest possible cost;**
- **enable social objectives to be met in an efficient and transparent manner;**
- **encourage bus operators to respond to changes in market demands; and**
- **provide a measure of market stability.**

The Commission has developed three options for introducing competition into the supply of bus services in Australia. The first provides for open access with minimum guaranteed service levels. The second and third both provide for exclusive franchises awarded through competitive tender. The second specifies a (minimum) level of service and operators bid on the basis of subsidy, while the third specifies the subsidy and operators bid on level of service.

The Commission also examined the option of open access without minimum service levels. Such an option cannot ensure that social objectives could be met efficiently.

Option 1: Open access with minimum guaranteed service

Under this option governments choose to supplement commercially viable services provided under open access. Any competent operator is permitted to operate on any route at any fare, at any time, but is required to give adequate notice of intention to operate commercial services. State or local governments could provide subsidies through competitive tenders for additional (community) services.

Under this option, government may specify the additional services it requires in two ways:

- by designating individual routes, times of operation, and fares; and
- by designating an area to be served with certain broad requirements (frequency after hours, distance of route from residences, etc).

When individual routes are specified for community services, they should be meshed with the commercial services also provided in the neighbourhood. The government will need to monitor the nature and extent of commercial services in order not to purchase services that would otherwise be provided

commercially. It may be necessary for community services to be contracted for relatively short periods so that changes in the commercial market can be accommodated.

Under this option, government would be responsible for:

- licensing drivers and their buses;
- ensuring a minimum level of information is supplied to passengers by requiring notice of fares and posting of schedules by the operator;
- monitoring services provided and identifying the services not supplied but which the government wishes to see provided. (This may be a minimum service outside certain hours for all routes or areas, or specific routes which are not commercial); and
- tendering out services regularly to fill in the ‘gaps’.

Bus stops, interchanges, etc will continue to require approval by local government and other relevant traffic authorities.

The advent of open access may, however, bring requirements for governments to increase payments for community services, since these will have been provided to some extent by cross-subsidy under exclusive franchising. Such a transition is to be welcomed however, since cross-subsidisation can only be achieved by artificially raising prices on commercial routes and restraining demand that could readily be satisfied.

Option 2: Exclusive franchise for a minimum subsidy with a given minimum level of service

Under a second option the government allocates by periodic competitive tender an exclusive licence to operate an area for a given time. The tender is allocated to the operator which bids the lowest subsidy (or the highest price) for a guaranteed minimum level of service.

Under this option, the government is responsible for:

- licensing drivers and their buses;
- ensuring a minimum level of information is supplied to passengers by requiring notice of fares and posting of schedules by the operator;
- ensuring that system-wide service coordination and integration of ticketing take place where desired — see chapter A4;
- determining the minimum ‘community’ services it will require of prospective operators and the maximum fares allowed for these services. (They may be services which would not be supplied commercially at any time or outside certain hours);

- reimbursing operators for concession fares;
- specifying a range of maximum fares;
- identifying franchise areas;
- administering the tenders; and
- monitoring the franchise operators to ensure they are supplying the tendered services.

Option 3: Exclusive franchise for a maximum level of service for given subsidy

The third option is a variation on the second. Under this option the tender is allocated to the operator which bids the maximum level of service for the subsidy offered by government. In addition to the responsibilities under option 2, the government needs to determine the maximum subsidy available to prospective operators and the maximum fares allowed for these services.

Under the second and third options, the government allocates by periodic competitive tender an exclusive licence to operate an area for a given time. Essentially this involves competition for the market, rather than in the market.

The benefits of these options are maximised only if the franchises are subject to regular public tenders. There will be more prospective operators competing for franchises if the franchise periods are staggered to allow unsuccessful bidders for one franchise to bid for another soon after. Staggered franchise periods also recognise the costs to prospective operators in making bids.

The Commission has estimated the possible savings to be gained by competitively tendering franchise contracts for the bus services presently provided by government-owned bus operators. Drawing on the studies of franchising undertaken in other countries (see table B3.11) and supported by the Hensher and Daniels (1993) study for the Commission, savings of 30 per cent of operating costs are possible through the recommended changes. Using data for the year to 30 June 1992 from the Australian City Transit Association (1993), **the Commission estimates savings could initially be \$250 million a year. This is equivalent to savings of up to 40 cents for every passenger boarding.**

B3.6 Implementing reform

The Commission considers that the fundamental ingredient to improving the performance of the Australian urban bus industry is to open it up to competition or the threat of competition.

While the greatest amount of competition is introduced under open access, in framing its recommendations the Commission has taken account of the concerns about the potential instability and loss of service coordination and integrated ticketing such an option may cause. Many participants stressed the need to avoid sudden change in regulatory arrangements. For example, the Bus and Coach Association of New South Wales said:

... having gone through such a massive restructuring period in NSW, it is essential that the private bus industry have a lengthy period in which to consolidate and digest the heavy capital expenditure that has been undertaken. Any further dramatic change to the current co-regulatory approach in NSW would probably lead to the collapse of the private sector's involvement in the bus industry, due to the inability to raise the high levels of capital funding (that are required in the industry) during periods of instability. (Sub. 97, p. 46)

There are benefits in a phased approach to reform, having due regard to the urgency for early action. **The Commission recommends that State and Territory Governments (continue to) introduce progressively a system of exclusive franchises to operate bus services in urban areas.** The franchises should be awarded on one of two bases: either the lowest subsidy for a (specified) minimum level of service, or the highest level of service for a (specified) subsidy. The government should also specify any fare concessions or maximum fares for the services to be provided.

The Commission recommends that the franchises:

- **be for up to seven years;**
- **contain penalties for inadequate performance;**
- **be allocated via open, public tender; and**
- **be automatically retendered at the end of their term.**

In coordinating franchise tenders, the Commission recommends that the States and Territories ensure that:

- **all tenders are open to all prospective operators without restriction;**
- **service requirements are explicit and stated in such a way that does not limit the type of vehicle which could be used;**
- **there is no preference for any franchisee at renewal time;**
- **the tender evaluation process underlying any weighting of individual service variables is transparent;**
- **tenderers have the freedom to bid for any number and any combination of franchise areas;**
- **the franchise periods are staggered to maximise the number of tenderers;**

- **tender documents remain confidential; and**
- **all bids are published after the tender is awarded.**

The introduction of competition into the provision of urban public transport services is compatible with a coordinated network of bus services (both among bus operators and with other modes) and an integrated ticketing system — see chapter A4 for more details.

Corporatisation of government-owned bus operators

Contestability in bus markets needs to be accompanied by complementary changes to the way public operators are organised and run — corporatisation is discussed in chapter A5. Specifically, the Commission recommends that any functions of government currently exercised by the government-owned bus operator such as safety and related technical regulation, economic regulation and the tender administration, should be transferred to other agencies of government.

Some States (notably NSW, Victoria and Tasmania) have already begun corporatising their bus operators. Others have taken some steps to putting their government-owned operators on a more commercial footing (see chapter A5). Brisbane Transport called for a delay in introducing competition for its bus services until it had completed internal reforms to improve its competitiveness relative to private bus operators. Brisbane Transport ‘is not concerned at the prospect of entering a competitive market’. However, it would insist that:

Any legislative reform must be accompanied by sufficient lead time to enable Brisbane Transport to address any organisational deficiencies (including labour related ones) in order that it might compete on an equal footing (Sub. 239, p. 36).

Substantial gains in operational efficiency would be necessary for many existing government-owned bus operators to compete successfully for franchises. But rather than delay the introduction of regulatory reform, the operators should use the progressive introduction of the competitive tenders as breathing space to improve their efficiency.

The areas currently serviced by the government-owned operators should be divided into a number of franchises and tendered. To encourage early involvement by all bus operators, State and Territory Governments may choose to offer these franchises (including an option to lease government buses) for short periods, until the public operators are corporatised, and all the benefits from the Commission’s recommended reforms can be enjoyed.

To accelerate efficiency improvements, the Commission recommends that each government-owned bus operator should be separated into commercially autonomous units, say, on a depot by depot basis. Such a

breakup would also facilitate their ultimate privatisation, if that were considered appropriate.

Applying the reform program

The Commission favours a program of reform which will enable efficient and innovative bus operators to expand and diversify their operations. The Commission recommends that reform should be introduced progressively and on a number of fronts simultaneously.

After the initial experience with exclusive franchising has been evaluated, consideration should then be given to the introduction of open access (with or without minimum guaranteed services) to all bus services by any operator without restriction. By this time many of the operators in particular areas will have become highly conversant with their markets and should be relatively low cost suppliers. Evaluation of the costs and benefits of the final steps towards full contestability in urban transport services would be considerably enhanced were the States and Territories to conduct a series of demonstration projects with open access.

To maximise the possible competition, these projects would best be conducted after the transition to franchising had been substantially completed. Such an approach allows fuller evaluation of alternative options and lessons from experience prior to wide-scale implementation.

Those states whose bus services are dominated by commercial operators and already have a tendering process in place, should consider demonstration projects allowing buses 'open' access to particular urban areas. Likely areas include: areas dominated by commercial services (such as Melbourne and Sydney), cross-border services, trunk routes, and urban fringe areas not franchised. It may be sensible to follow the approach in the new Victorian contracts, and prevent the services from taking on passengers once they are outside the open access area in order to preserve the exclusivity of franchises in adjoining areas.

To this end, the Commission recommends that each State and Territory consider allowing any prospective operator to access a number of the specified service areas in Australian cities subject to:

- giving the government adequate (say four weeks) notice of the nature and timing of the services to be provided; and
- observing the maximum fares determined by the government for the area.

The broad order of reform the Commission envisages is outlined in box B3.6.

The Commission is conscious of the need to take into account the particular situations of individual cities and States and Territories in applying its recommended reform package for urban buses. The rate at which the Commission's reforms can be introduced will vary from state to state and city to city. This reflects, among other things, the different regulatory systems which exist today (see table B3.3).

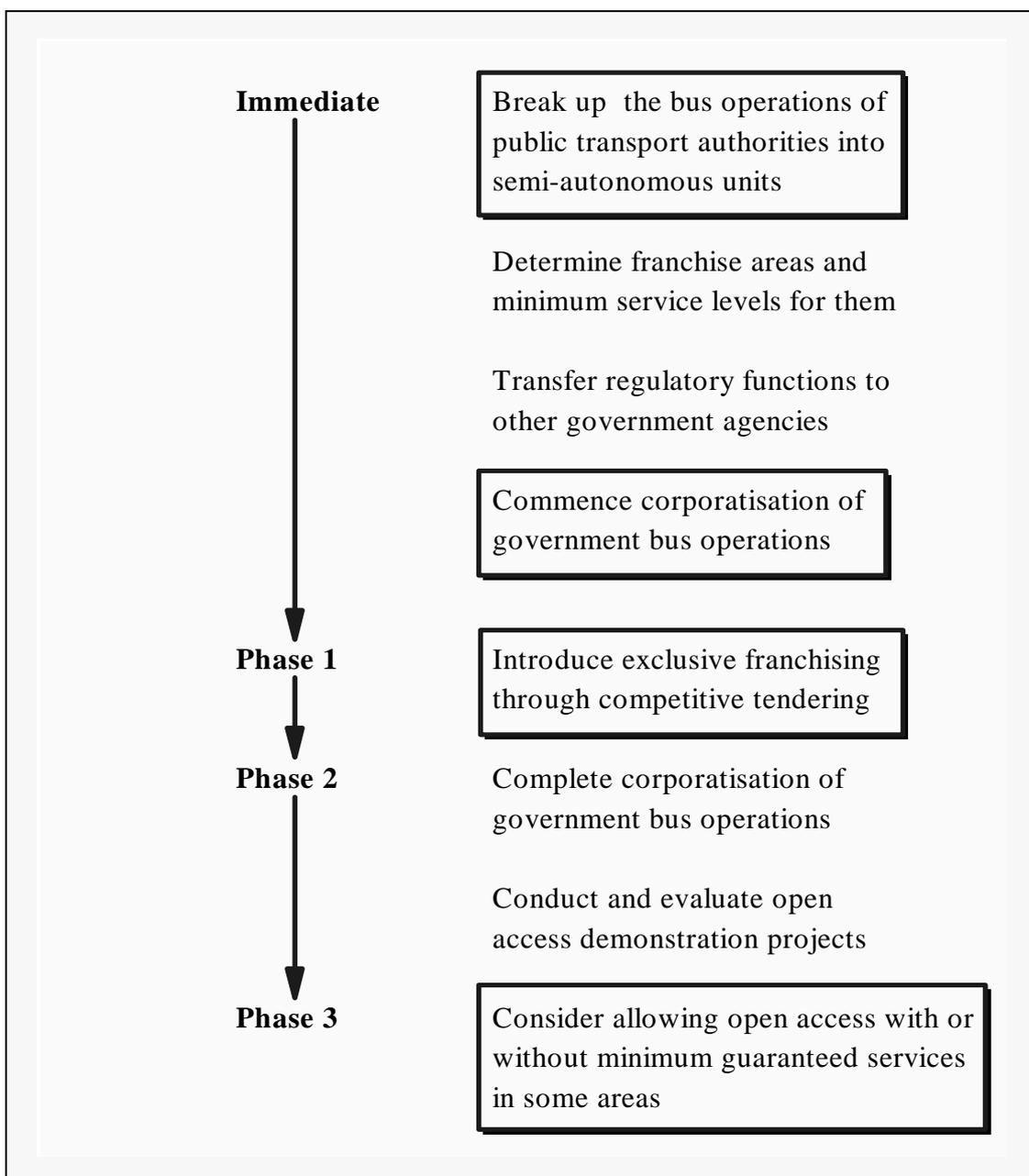
The *New South Wales* system applying to private bus operators has features in common with the Commission's recommended franchising system. It does, however, appear to differ in three major respects:

- a lack of transparency in the tender evaluation process, combined with a lack of confidence in its accountability;
- a lack of an independent evaluator of the tenders; and
- no automatic retendering of expired contracts.

Opening franchises to competition automatically at the end of their term would sharpen significantly the incentives of private operators to strive for better service delivery rather than merely do the minimum necessary to obtain renewal of the contract. At present, the lack of competition at contract renewal has the effect of propping up relatively inefficient operators, condemning users in some areas to lower quality services, and limiting the licensing opportunities available to the most efficient operators.

There have also been suggestions that the private bus operators in NSW are not confined to revenue from the farebox and direct reimbursement of concessions actually supplied. The sheer magnitude of school transport expenditure in NSW — the NSW Department of Community Services stated it was \$300 million a year (Sub. 316) — has caused questions to be raised.

Extension of competitive tendering of franchises would imply subjecting all contracts, including STA's bus services (divided into franchise areas), to competitive tender when their initial term expires and regularly thereafter.

Box B3.6: The urban bus reform timetable


Victoria has recently awarded bus contracts in a way which shares many of the features of the system of area franchises outlined above. The Victorian Government's approach to tendering out routes and areas within the constraints of existing cost-plus contracts, provides an instructive example for other States and Territories where there are contracts whose term will not expire for a number of years. The Victorian Government has in mind:

... possible reconsideration of existing cost-plus contracts in Victoria to achieve an outcome from which operators, customers and the community could all benefit. The Victorian Bus Proprietors' Association has told the Commission that the current contractual situation has destroyed the industry's ability to operate as a truly private enterprise system. To allow this situation to continue until existing contracts expire (mostly in 1997) would be to ignore major potential gains. (Sub. 319, p. 3)

A number of features of the new system, however, could be improved. For example, in the first round of contracts at least, tenders were not open to all prospective operators, as tenderers were required to provide evidence of satisfactory past performance in providing regular passenger transport services. Also, child concessions ought to be directly reimbursed.

Although the Victorian Government has begun to reform the PTC (Victoria) and to separate out regulatory functions to the Victorian Department of Transport, there is also a need to remove possible conflicts of interest arising from the new franchise agreements. The Public Transport Corporation should not be responsible for regulating and reimbursing private operators, while at the same time it is bidding for contracts in competition with those operators, as was recently the case with the National Bus Company.

The *Queensland* Government, after the recent completion of its *Queensland Passenger Transport Review*, has announced plans to tender out contracts for bus services in prescribed areas or routes of the urban route and school transport services. Queensland's approach to reform has a lot in common with that of New South Wales. The contracts will award exclusive rights for five years on the basis of proposed service standards for a given cost to government. The contract will set maximum fares but may allow a range of fares above the maximum if the service is innovative.

There will be no automatic retendering of expired contracts. This is the major point of difference with the Commission's recommendations for allocating bus franchises.

The contract holders will be responsible for planning routes and timetables and service coordination, but the Government can vary the area or routes or can instigate cross boundary services if it is in the public interest. Under the plans, the Government can also let 'Government-Funded Service Contracts' which will supply a public passenger transport service to those areas which cannot sustain such a service at commercial levels for equity, social justice or educational reasons.

The proposed changes may also assist in removing some of the restrictions on local government operations so that bus service areas crossing local council borders can be easily franchised out.

The Commission considers that the service area of Brisbane Transport should also be divided into commercially autonomous units. Brisbane Transport should be able to compete on an equal basis with private bus operators for the resulting franchises. Despite Brisbane Transport's objections (see chapter A5), the Commission considers that it too should be fully corporatised.

The Commission supports the *South Australian* Government's plans to corporatise the STA (SA), particularly relieving the STA of its policy and planning responsibilities. The South Australian Government stated that:

Based on overseas experience, the South Australian Government believes that the staged introduction of competitive tendering in the Adelaide area can lead to savings of 25% on STA's operating subsidy (at least \$34 m) (Sub. 317, p. 2).

Passenger surveys in Adelaide reveal that 'the STA patronage profile is overwhelmingly concession orientated with around 65% of passengers being either school students, tertiary students or concession holders' (Sub. 65, p. 5). So identifying and costing community services will be a major element of reform in South Australia.

The Commission recommends that Adelaide's bus services be separated into commercially autonomous units and exclusive franchises offered for them by open tender. The Bus and Coach Association of SA expressed interest in the new opportunities which would arise from such reform. Companies from interstate and other countries may also tender for such a franchise, as may South Australian firms presently supplying non-scheduled coach services or school services, as well as decentralised units of the STA (SA).

The *Western Australian* Government announced in September 1993 that it plans to corporatise MTT (Perth) and introduce tenders for passenger service contracts from mid-1994. The contracts will be for exclusive franchise areas (and for routes travelling from one area to another, including those through the Perth CBD) with the possibility of 'competition on trunk routes which form the boundary between contract areas' (Sub. 320, p. 8). The MTT will be allowed to tender for the contracts and will be placed on contract with the WA Department of Transport for non-tendered services as of 1 July 1994 (Sub. 320). The WA Department of Transport will coordinate and market public transport services. In a media statement, the WA Minister for Transport stated that:

It was estimated the changes would save Transperth up to \$41 million dollars annually by 1995-96.

"The changes will reduce the community cost of providing public transport while at the same time preserve the integrated multi-modal nature of the system..." (WA Minister for Transport, 1993)

The Commission welcomes this action as a significant first step to more efficient bus operations in Western Australia and encourages the Government to competitively tender out exclusive franchises as proposed by the Commission.

Applying the reform program to *Tasmania* implies a continuation of the corporatisation of Metro Tasmania. The high proportion of trips undertaken by concessional travellers suggests that identifying, costing and directly funding community services in Tasmania should have a high priority. Tenders to supply bus services in Burnie, Launceston and Hobart should be sought on a basis which does not preclude bids to run the entire operation.

In the *Northern Territory*, the Darwin Bus Service should also be corporatised and its bus services competitively tendered.

As soon as possible, the *Australian Capital Territory's* bus network should be divided into separate and commercially autonomous units, perhaps along the lines of the present ACTION depots, and exclusive franchises let. The government bus services should be corporatised, and permitted to tender for the franchises. The ACT Government, in response to the draft report, stated it does not believe corporatisation is an appropriate model for ACTION and would not introduce franchising because 'the results of benchmarking can achieve much of the aims of opening up services to competition' (Sub. 228).

The Commission agrees that benchmarking can be a valuable aid in exposing the problems faced by ACTION. However, on its own, benchmarking does not provide any financial incentives to increase cost-effectiveness and it cannot hope to bring the benefits to the community that are offered by franchising.

B3.7 Conclusion

In summary, the Commission supports an immediate start to, or continuation of, the public tendering of exclusive franchises for bus services in cities, while governments retain the option of integrating and coordinating their public transport services (see chapter A4). The Commission acknowledges that different states and territories are starting from different points and some will take longer to achieve a bus system competitively supplied under franchises.

The Commission's program of reforms in other modes (see other chapters in Part B, chapters A6 and A11) means that other passenger transport markets will be opening up as bus services are tendered out. Buses will have the opportunity to operate in direct competition with other modes. Additionally, new companies including some which have supplied taxi services or freight services in the past, will be free to compete with bus companies for route services.

B4 TAXIS AND HIRECARS

The taxi plays a valuable role in our transport system. It both substitutes for and complements the private car and conventional public transport. But it has the potential to play a much larger role. This chapter examines regulations that are inhibiting the growth of the taxi industry and adversely affecting users. It proposes a program of reform designed to enable the taxi industry to expand and diversify, while retaining all aspects of public safety regulation.

B4.1 The role of taxis in urban transport

The Australian Taxi Industry Association (ATIA) estimates there are about 160 million taxi hirings in Australia each year with about 15 000 taxi licences on issue. However, the taxi does not have a large share of the urban transport market — about half of one per cent of all travel. Most taxi work is short distance, usually for business, tourist or occasional travellers.

Taxis are flexible. They do not follow fixed routes and can be called to the area where demand is greatest. This makes them well-suited to catering for irregular cross-city trips. Such door-to-door service is a particular advantage for people with disabilities. As well as carrying passengers, taxis carry parcels and freight around the city thereby offering an alternative to couriers. More taxis may stay on duty if demand is high enabling capacity to be demand responsive, unlike other more ‘supply-driven’ forms of public transport.

The taxi may be more economical to run in off-peak periods than larger vehicles such as buses and trams. Taxis have recently tendered for off-peak bus routes in Melbourne and New Zealand. As Mr Michael Pearson observed:

Many people hesitate to use public transport after dark, especially if they have to walk home along dimly-lit streets. Taxis go right to one’s front door and if hired on a contract basis by transport authorities could provide a cheaper, more user-friendly alternative to running lightly-laden buses in evenings and at weekends. (Sub. 18, p. 6)

Taxis could play an enhanced role in complementing existing transport systems through initiatives such as the establishment of taxi ranks at rail and bus stations. The ATIA said:

The taxi industry ... cannot understand why Governments fail to make greater use of the non-subsidised taxi system as a replacement for the loss-making mainstream system.

Taxis are very competitively priced when they are shared by more than one occupant ... In other words, late at night and during other non-peak periods, non-subsidised taxis could be contracted in to operate in lieu of the trams (or subsidised trains or buses) at substantial savings to the Government. (Sub. 94, p. 23)

An example of this approach is the trial scheme in Hallett Cove, Adelaide, whereby taxis meet suburban trains at night and take passengers to their door. Passengers pay a nominal fee of 50 cents, with the State Transport Authority of South Australia providing the rest of the fare (on average \$7.50). The cost of the subsidy to the Authority is less than the cost of providing conventional bus services.

Taxis also provide some unfunded community services through schemes such as Taxiwatch in South Australia, where taxis wait for their next job next to schools to keep an eye out for vandals.

In view of these advantages and scope for further service provision, questions arise as to why the taxi does not play a greater role in urban transport and whether there are regulatory or other factors stopping it from doing so.

B4.2 Current institutional arrangements

Industry structure

The taxi industry comprises taxi organisations, holders of taxi licences and drivers.

Taxi organisations vary from cooperatives to companies. Typically, they provide access to a communications network and livery to taxi owners in return for a joining fee and annual payment. The number of taxi organisations in Australian cities ranges from about ten in Melbourne to just one in Canberra.

A feature of the industry is its domination by the owner-driver. The typical owner-driver owns his or her taxi licence outright, works six days a week for eight to twelve hours a shift and has one or two non-owner drivers working nights and weekends. However the leasing of taxi licences to non-owner drivers is becoming much more widespread.

Approximately 75 per cent of taxi driver certificates (licences to drive taxis) are issued to non-owner drivers. Contracts between owners and drivers vary.

Taxi regulation

Taxis have been regulated in most Australian cities since the 1930s. The decline in economic activity associated with the then depression saw not only a decrease in the demand for taxi services, but also an increase in the supply of unskilled labour willing to work as taxi drivers. The result was a decline in driver and vehicle quality with fierce, often violent, competition for fares with illegal activities used to gain the edge over competitors. As a result, regulations governing entry into the taxi industry and vehicle quality were introduced in most states. The post-World War Two era saw added government intervention with special provisions introduced to provide jobs for unemployed ex-servicemen.

The original regulation has been adapted over time until today where the stringency of regulation is the most common feature of the taxi industry throughout Australia. State and Territory Governments are currently responsible for:

- quantity and quality controls on taxi vehicles;
- quantity and quality controls over taxi driver certificates;
- governing the way in which taxis conduct their business; and
- setting taxi fares.

Taxi control boards or taxi advisory committees influence, if not determine, the number of licences issued, fare levels and other matters related to the functioning of the industry. These bodies usually consist of members of the taxi industry among other representative groups including government, consumers, and the tourist industry.

Recently, Victoria, Western Australia and South Australia have all moved to abolish existing taxi boards, and replace them with taxi advisory groups. These groups will still have representatives from the taxi industry, but will feature greater representation of taxi users. The intention is to make the taxi industry as responsive as possible to the needs of consumers.

Taxi vehicle numbers

Taxi regulators control the issue of taxi licences, thereby determining how many taxis operate. The method of determining taxi numbers varies between states and territories, but the following factors are generally taken into account:

- an (arbitrary) fixed taxi-population ratio or a taxi-persons employed ratio (for example, in the Australian Capital Territory a ratio of one taxi per 800 employed persons);
- surveys of customer waiting times; and

- consultation with the relevant state taxi organisations.

People wishing to buy a taxi licence, thus giving them a right to operate a taxi, may either purchase it from the government, if available, or buy one on the open market.

Taxi licences (or plates) vary in the way they may be traded or sold. For example, in New South Wales taxi licences issued since July 1990 are 'restricted plates' and cannot be traded. Some special issue taxi plates are given free of charge to applicants for the sole use of special purpose vehicles, such as Access Cabs in South Australia.

Taxi vehicle safety and appearance

Most states have regular, usually six monthly, vehicle inspection tests. The level of stringency varies from city to city. New South Wales and Victoria impose an age limit on taxi vehicles.

As well as mechanical inspections, taxi colour and advertising are regulated in some states. In Victoria the regulation of taxi appearance goes as far as to say 'taxis should be fitted with signs white in colour, with the word 'taxi' written in black letters 75 millimetres high and of proportionate breadth on both front and rear and the sign shall be 405 millimetres wide, 125 millimetres deep and 180 millimetres high'.

Taxi driver qualifications

Regulators also control the issue of taxi driver certificates. Certificates are usually subject to character references, police checks, a practical driving test and some form of driver training. Some states are stricter than others when it comes to issuing certificates. In New South Wales, Victoria and the ACT all new drivers are required to attend accredited training courses.

Business conduct

The way in which taxis are able to conduct their business is also regulated. Taxi drivers are not allowed to tout or approach possible customers for fares. Examples of more specific regulation include:

- in Melbourne a taxi must display its 'taxi' light illuminated, unless being specifically hired for a wedding or a funeral;
- in Sydney regulators define when and where a taxi may operate; and
- in Perth taxis are required to work at least five hours a day, 40 hours a week and 48 weeks a year.

In addition to rules set by government authorities, the taxi industry has its own conventions. The most important of these is the 'first in first out' (FIFO) rule. The convention means that the first taxi onto the taxi rank gets the first job. The convention has no basis in law, yet may be imposed on taxi users, thus depriving them of the legal right to take the taxi of their choice.

Taxi fares

Maximum fares are prescribed by regulatory authorities and required to be displayed inside the vehicle. In most states and territories taxi organisations must make submissions to the various taxi boards/advisory committees in order to increase fares. In the Australian Capital Territory fares are indexed to a 'basket' of taxi costs (fuel, tyres and insurance) and automatically increased when the index rises.

Regulation of hire cars

Taxis and hire cars operate in a very similar way. The basic difference is that hire cars are not allowed to ply for business at taxi ranks or be hailed in the street. The way in which hire car licences are distributed also varies from state to state (see box B4.1).

Although South Australia allows anyone wishing to establish a hire car business a reasonable opportunity to do so, and others (such as the ACT) are changing their regulations to allow more flexibility, most states and territories make it difficult for individuals to start hire car businesses.

Although hire car licences may be available for a 'reasonable' price, many licences are only temporary or issued subject to meeting 'unmet demand' criteria. This restricts the opportunity to establish new businesses.

An example of the difficulty faced was given in a submission by Mr Peter Boyce, who has been trying to establish a vintage hire car business in NSW for more than twenty years, but has been unable to do so apparently due to restrictive government policy (Sub. 234).

Box B4.1: How to get a hire car licence

Sydney: Anyone, providing he or she is a 'fit and proper' person and owns a certain type of vehicle, may buy a temporary licence for \$16 000, but these licences are only valid for twelve months. To buy an ongoing licence on the open market, the average price is around \$91 000. There are currently about 250 licences.

Melbourne: Licences are issued free of charge subject to the notification of the proposed application in the State Government Gazette. This notification attracts appeals against the application from existing hire car operators and the approval of the application is usually a long process. Some 500 licences are on issue and they range in value from \$1 000 – \$20 000 depending on the operating restrictions imposed on the licence.

South-east Queensland: Area controls over the operation of hire cars in south-east Queensland (including Brisbane, Toowoomba, the Gold Coast, the Sunshine Coast and Ipswich) were abolished in 1991. Hire cars are now free to operate wherever they wish in this region. Hire car numbers are restricted (to about 300) and the only way to buy a new licence is on the open market, currently for about \$46 000.

Adelaide: Licences are available for a \$50 fee subject to character and vehicle checks. This method of allocation (unrestricted entry for a nominal fee to cover administrative charges) ensures competition and eliminates excessive hire car licence values. There are about 240 licences.

Darwin: Licences are available for \$10 000 providing the applicant possesses a suitable 'upmarket' vehicle and passes 'fit and proper' person criteria. There are about 20 licences.

Perth: To buy a licence from the Government, it must be proved that there is 'unmet demand' for hire car services. If this cannot be done, it is possible to buy a hire car licence for about \$100 000 on the open market. There are currently around 25 licences.

Hobart: Licences are no longer issued in Hobart. They sell on the open market for \$60 000 – \$70 000. There are 47 licences.

Canberra: It is possible to apply to the government for a new licence and the application would be assessed. However no new applications have been received for several years. The 22 licences are currently worth about \$60 000 each on the open market.

Source: Commission inquiries of taxi authorities

B4.3 Rationale for regulation

Why is the government so heavily involved in taxi regulation in Australia? What are the objectives of taxi regulation and is regulation meeting its objectives in the most efficient way? Are there any unintended side-effects of regulation?

In answering these questions it is important to distinguish between safety regulation and economic regulation:

- safety regulation includes controls over the skill and integrity of the taxi driver, and over taxi vehicle quality, while
- economic regulation includes controls over taxi numbers and setting maximum taxi fares.

Safety regulation

As the taxi is a form of public carriage, it is often argued that government has a duty to ensure the safety of the taxi travelling public.

Getting into a taxi, a user may not be in a position to establish the roadworthiness of the vehicle or the ability and integrity of the driver. This provides an argument for government to ensure vehicle roadworthiness and driver standards in the public interest. At issue here is not the need for safety regulation, but rather the most efficient way to achieve it.

Vehicle safety

Taxi organisations argue that restricting the number of taxis on the road enables taxi owners to achieve a level of income sufficient to ensure that vehicles meet safety standards. Increasing taxi numbers, it is argued, would result in falling incomes and declines in maintenance and safety levels.

It is difficult to see how safety levels would fall if quantity controls were relaxed, provided that regular government safety inspections were maintained.

It is also difficult to ascertain why taxis should be subject to more stringent — rather than simply more frequent — safety measures than ‘normal’ passenger vehicles. Higher safety standards could add to costs and lead to higher fares, without materially improving levels of safety.

Taxi driver certificates

To ensure minimum levels of driver ability and integrity, government agencies issue taxi driver certificates. This regulation is intended to stop taxi users from being exposed to potentially dangerous drivers through true character references, police checks and driving tests. If the issue of driver certificates were unrestricted, taxi users would find it more difficult to determine whether their potential driver had the minimum ability and character to suit their needs.

In view of these safety concerns, the Commission considers that police checks on taxi driver certificate applicants should continue and there

should be on-going police checks on all taxi certificate holders in all states and territories.

In most states and territories taxi drivers are subject to normal driving regulations, including having to sit for a driving test. Given that drivers risk losing their licences — and their livelihood — if they incur too many driving infringements, additional driving tests for taxi drivers seem unnecessary.

The Commission acknowledges the efforts of the taxi industry in trying to improve the level of service provided to customers through programs such as the Taxi Care Training Program (which includes features such as locality and customer service training). Programs such as this are prerequisites for all new taxi drivers in NSW, Victoria and the ACT.

The Commission considers that taxi drivers should have to meet minimum standards in both English and local geography. In those States and Territories which currently do not have taxi driver training schemes, they should be introduced. **English and local geography tests should be a prerequisite for all new drivers.** The tests should not be administered by the taxi industry, but by an independent body such as the department of transport.

Consumer protection

Another reason for government regulation of the taxi industry is to protect consumers from the abuse of market power by setting and enforcing maximum fares.

Implicit in this argument is a view that the taxi industry is characterised by elements of monopoly power which lead to unequal bargaining power between drivers and passengers.

One possible source of market power is the existence of a natural monopoly (see chapter A4). In the case of the taxi industry, it might be argued that radio and computer networks exhibit some characteristics of natural monopoly. Yet other technological advances (for example, mobile phones) appear to be weakening any trend towards natural monopoly. In any event, the number of taxi companies/cooperatives in the largest Australian cities seem sufficiently high to suggest that natural monopoly is not the motivating factor behind fare regulation.

It could also be argued that the taxi industry possesses an element of market power or ‘unnatural monopoly’ through entry restrictions. In other words, so long as quantity restrictions on entry into the industry remain, the regulation of fares is justified. One regulation unfortunately leads to another.

A further argument sometimes advanced for regulation of fares is that it would be difficult for taxi users to compare prices if they were not regulated and uniform. Deregulated prices would mean customers would have to shop around to find the cheapest fare and may have to make several phone calls. The ATIA said:

.... under deregulation, there are no requirements in regard to the fares to be charged and there are no fare structures stipulated by Government. Each passenger would individually negotiate a fare with each driver. (Sub. 94, p. 37)

However, allowing taxi companies to set their own fares does not have to mean fares are negotiated for every journey. If maximum fares were required to be posted both inside and outside a taxi, that would help consumers overcome any information hurdle. Taxis would be required to make their fares easy to understand, with no ‘fine print’, although they would be free to charge less than the maximum fare. Taxi organisations would have an incentive to promote themselves through advertising.

In New Zealand, maximum fares have to be posted both outside and inside taxis. This provides competition without customers having to haggle over fares: they can decide which taxi or taxi company offers best value for money. Anecdotal evidence suggests that people have learned to shop around.

The airport problem

In response to the Commission’s draft report, a number of people cited problems associated with taxi reform in some other countries, particularly at airports. The problems arose because of the influx of new operators after reform, with far too many taxis at airport ranks, and taxis charging excessive fares. Participants cited taxis in San Diego and Seattle (United States) charging two hundred per cent more than the average fare on trips from the airport, and taxi drivers in Auckland (New Zealand) charging \$25 for a two kilometre trip between the international and domestic air terminals.

That such problems have occurred is regrettable. But it is clear they can be overcome — and, in the case of Auckland airport for example, have been overcome by the appropriate authority taking the necessary action. As the ATIA explained:

Auckland Airport has limited the number of taxis that are licensed to pick-up at the airport to about 800 out of the 2,000 that wander the streets of the city. There used to be 900 odd cabs before deregulation ... The officials do not know the extent of overcharging both deliberate and as a result of drivers getting lost. (Sub. 254, pp. 7-8)

Silvertop Taxis noted that ‘the New Zealand experience at airport terminals has led to re-regulation of the taxi industry at those taxi ranks — a process achieved

by tendering for the right to stand on those ranks at fixed prices.’ (Sub. 269, p. 10).

Steps can also be taken, and should be taken, to better inform travellers. For example, as the TPC suggested, ‘the airport authority or the local tourist promotion authority could give advice to travellers or could even offer the services of preferred taxi companies at prices which it negotiates on behalf of travellers’ (Sub. 292, pp. 40-41).

B4.4 The effects of taxi regulation

Licence values and their effect on fares

The most noticeable effect of government regulation on the taxi industry is the high values attaching to taxi licences resulting from the restriction on taxi numbers. The total value of taxi licences in Australia’s largest cities was about \$2.5 billion in December 1993 (see table B4.1).

High licence values are not restricted to our capital cities. The highest licence values in Australia are on the Gold Coast (\$320 000), followed by Tamworth (\$265 000), the Central Coast of New South Wales (\$247 000) and Canberra (\$240 000). The value of taxi licences in all New South Wales cities outside Sydney, Newcastle and Wollongong is in excess of \$90 million.

The high value attaching to taxi licences means it is in the interest of existing licence holders to oppose any increase in numbers. The Australian Capital Territory (ACT) Government said:

The cost of ACT taxi licences is largely a function of the policies relating to release of plates, which have been determined by the Government largely on the advice of the Taxi Industry Advisory Committee. Balancing of supply with demand has not always been successful, leading to significant increases in licence payments. The Government believes that there is a need to examine ways in which a better balance can best be achieved, with minimal disruption or hardship to operators or consumers. (Sub. 228, p. 6)

It is hardly surprising then that there are fewer taxis per head of population than in other countries. Shann noted:

Australian cities generally have around 1 taxi per 1 000 people, compared with 3.4 in Montreal, or 8 (including mini and unlicensed taxis) in London or New York (Access Economics 1993).

Table B4.1: **Taxi licence values in December 1993**

	<i>Plate values</i>	<i>Taxi numbers</i>	<i>Total value</i>
	(\$)		(\$ million)
Sydney	202 000	4 356	880
Melbourne	130 000	3 223	419
Brisbane	190 000	1503	286
Perth	130 000	942	122
Adelaide	130 000	890	116
Canberra	240 000	194	47
Hobart	150 000	209	31
Darwin	290 000	84	24
Newcastle	183 000	156	29
Wollongong	190 000	117	22
Gosford/Wyong/Woy Woy	247 500	66	16
Geelong/Bendigo/Ballarat	150 000	215	32
Gold Coast	320 000	179	57
Toowoomba	186 000	110	20
Townsville	220 000	112	25
Other country areas ^a	130 000	2 644	344
Total		15 000	2 470

a Other country areas comprise a range of smaller districts for which a licence value is estimated by setting it at the lowest value reported elsewhere in this table.

Source: Australian Taxi Industry Association

The high monetary value of licences has been put forward as evidence that taxi owners are able to charge higher prices than they could if the number of licences were not restricted. The ACT Government said:

While the regulations currently in place provide the existing taxi industry with a guaranteed market, the restrictions on entry also have the effect of pushing up the value of taxi licences. These values will reflect the guaranteed returns expected from operating within a protected market and may work to the detriment of consumers as the high cost of obtaining licences will inevitably be passed on. Furthermore, the restrictions on entry to the industry protect existing operators from competitive conditions which might otherwise further reduce costs. More open entry arrangements may also enhance the flexibility of the service. (Sub. 167, pp. 32-33)

In similar terms, the Western Australian Government stated:

The level of taxi fares devised by the Taxi Control Board takes into account the cost of servicing the artificially high capital cost of the licence. It has been argued that the taxi industry has to a large extent priced itself out of the transport market. (Sub. 170, p. 66)

The Trade Practices Commission (TPC) commented:

The strict control over entry, through a licensing mechanism, has meant that the price of the right to operate a taxi, known as a 'plate', has been bid to very high levels, as potential taxi operators seek to capture the gains offered by the restrictions on entry. The capitalisation of these monopoly rents in the form of high plate prices contributes to higher taxi fares to the extent that plate owners need to earn a commercial rate of return on their capital investment in the plates as well as in the car. Regulatory reforms which make taxi plates more freely available to applicants who meet minimum entry standards would reduce the capital value of the plates and result in lower fares in a more competitive taxi market. (Sub. 292, pp. 5-6)

In contrast, the ATIA (Sub. 94, p. 30) argued in its initial submission that theories linking licence values to higher fares are 'simplistic', and that the three main factors affecting the value of a taxi licence are:

- the demand for taxi services;
- the demand for taxi plates; and
- goodwill.

These factors are subject to such influences as the expectation of future licence values, the strength of the economy, the impact of unemployment on the costs of employing drivers, restrictions on taxi licence ownership (including the number of plates allowed per person), population size and, most importantly, the number of taxis that are allowed to operate.

The ATIA went on in its initial submission to say that 'the demand for taxi services is not a factor in determining the value of a taxi plate' (Sub. 94, p. 31, emphasis in original).

In its submission on the draft report, the ATIA strongly disagreed with the Commission's view that the need to obtain a commercial return on the investment in taxi licences means that fares are higher than they would otherwise have to be.

However, when this aspect was discussed at the public hearings, the ATIA took a somewhat different position:

I think economically it is quite clear, if it's a significant price drop ... that person has got to pay interest on it when he borrowed it and so he has got to pay less interest, so unless he wants to put the money in the kick he can bring his price down (DR transcript, p. 526).

The Commission appreciates that some (albeit relatively small) part of the value of a taxi licence will reflect goodwill, because of the time and money put into the industry by owners and drivers.

As to the 'demand for taxi plates' factor, the ATIA commented in its initial submission that capital city licences have been bought and sold in recent years

by investors, especially from Asia: ‘these overseas investors have tended to link the value of a taxi licence to the interest rate for investments ... [the] return on investment can be 12% to 14% per annum’ (Sub. 94, pp. 31-32).

The Commission observes that, on that basis, the \$2.5 billion now invested in licences returns about \$320 million a year. Since there are about 160 million taxi hirings a year, that return is equivalent to \$2 for each hiring. Assuming 10 per cent goodwill value, on average every ride costs almost \$2 more than it would do if the price of a taxi licence only reflected its goodwill.

The social impact of regulation

Given that restricting taxi numbers results in higher fares and lower levels of service than might otherwise occur, it is important to examine which socio-economic groups are most affected. The effect of higher fares on people with disabilities is discussed in chapter A8.

As a percentage of income, people with the lowest earnings spend the highest proportion of income on taxis (see figure B4.1). This means that people with lower incomes are currently being ‘priced-out’ of the taxi market and bear a disproportionate amount of the burden of high licence values. Restricting taxi numbers is regressive in terms of income distribution.

Travers Morgan found that in Adelaide in 1988 two-thirds of taxi users had personal incomes of less than \$18 000 a year (see figure B4.2). Therefore, any decreases in taxi fares would be relatively more beneficial to lower income groups.

The entry barriers which increase taxi fares fall particularly severely on people with disabilities and on other people who are not able to own and drive their own vehicles. These groups can benefit from the door-to-door service offered by taxis. Although some groups receive subsidies, taxis are still more expensive than other forms of public transport. As the Central Sydney Community Transport Group said:

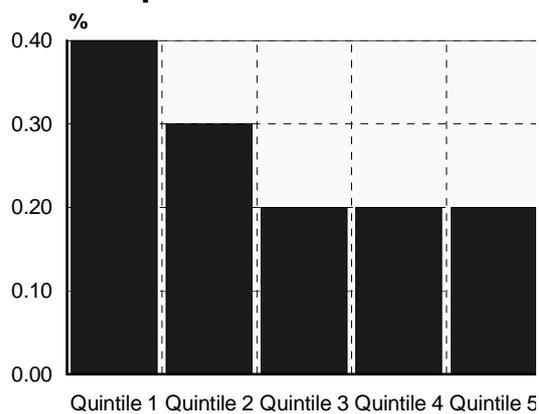
Take the case of a person who needs to use a wheelchair. In order to travel to work, they will at present need to take a modified taxi. Though the cost of this is subsidised in NSW by 50%, it remains prohibitively expensive. It can sometimes cost over \$100.00 per week just to commute, let alone travel to keep appointments or to socialise. This is a barrier to gaining employment on top of the reluctance of many employers to take on someone with a disability. (Sub. 82, p. 5)

Mr Graham Hoskin added:

[People attending church in Liverpool] have either minimal or non-existent public transport at nights and on weekends, and are heavily dependent on taxi services at these times. But the cost of a taxi trip from Liverpool or Cabramatta Railway Stations to their

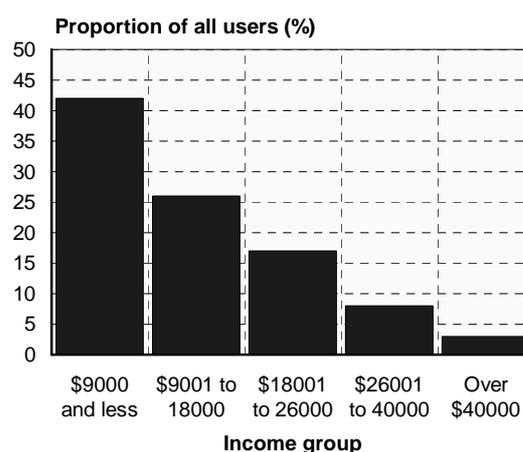
homes in these areas is prohibitive, and the further to the west they are in the urban sprawl, the worse it is. Most of these people are lower income people; many are single mothers, others are pensioners. Even one taxi fare under our present regulated system is a severe bite into the budget, and it can in fact make the difference between having enough to feed the children and not having enough. (Sub. 187, p. 2)

Figure B4.1: Proportion of income spent on taxi fares



Average weekly household income

Figure B4.2: Taxi user income profile — Adelaide 1988



Source: Travers Morgan 1988b

Figures represent average weekly expenditure by capital city households. Quintiles represent household income distribution within 5 groups, where quintile 1 represents the lowest average weekly household income and quintile 5 the highest.

Source: ABS 1990a

Innovation and market segmentation

It has been argued that innovation is stifled by the restrictions on entry into the industry. Currently, taxi users generally have only one type of service — the exclusive ride taxi — as an option. There is little incentive to choose one taxi over another, since prices are fixed and uniform. Shared ride taxi services, such as jitneys or mini-buses, would allow more flexibility and be more responsive to passenger needs. They are to be found in other countries including the United States (for example, at airports) and New Zealand (for example, Palmerston North). Multiple-hire taxi journeys are allowed in Australia but are rare, usually being confined to peak periods at places such as airports and race tracks.

Currently all taxi services are homogenous, the only variations being the (generally) slight differences in the type of vehicle driven and whether or not the vehicle belongs to a radio network or a computer dispatch system. Allowing prices to vary, and open access to the industry, would enable more market

segmentation to occur, thus offering greater choice and variation to taxi users — as has occurred in New Zealand since the reform of its taxi industry.

This is not to deny that some innovation has been occurring in the taxi industry. As the ATIA noted:

Australia has become one of the leaders in taxi innovation in the developed world, with radio bookings, computerised dispatch systems, disabled transport and relatively cheaper fares ... there is a system called 'Easycab' which allows for passengers to press a single button on the telephone and thus receive a despatched vehicle ahead of a normal telephone call. In the very near future, it is likely that a system called 'Helpline' will be introduced. This will allow for the aged, infirmed and disabled to have a direct one-button line to the communications centre of the taxi industry for assistance.

These projects, together with the Global Positioning Satellite System for driver and passenger safety, have been developed within the taxi industry, under the current flexible State-by-State regulatory framework, at the taxi industry's own expense for the community need. (Sub. 94, p. 3, 8)

Another encouraging development has been in Canberra, where Aerial Taxis recently sought to have 12 to 14 seater buses licensed. After initially being refused, negotiations between the company and the ACT Government has resulted in the introduction of new legislation enabling mini-buses to be licensed as multicabs (Sub. 228, p. 10).

Summing up

Barriers to entry and other forms of economic regulation have little, if anything, to do with ensuring public safety. Economic regulation results in artificially high values placed on taxi licences, which in turn leads to higher fares (on one estimate, about \$2 a ride) for all taxi users, including those on lower incomes and people with disabilities.

In addition, economic regulation restricts innovation, market segmentation and customer responsiveness. There are signs, however, that governments are recognising, as the Western Australian Government stated, that there is 'poor public policy justification for such a high level of [taxi] regulation' (Sub. 170, p. 68).

B4.5 The benefits of opening up the taxi industry

The Commission is convinced that relaxing entry controls into the taxi industry would bring major consumer benefits through greater price competition, market segmentation, innovation and more choice. The Commission considers that eventually the taxi industry should be a competitive market with open entry

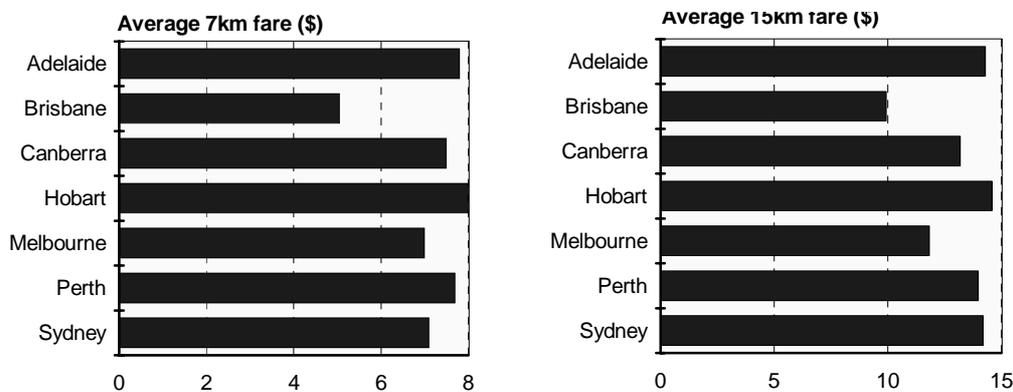
across Australia and few controls over taxi fares. Public safety and consumer protection would be assured through:

- taxi vehicle safety levels continuing to be regulated by regular government safety checks in the current manner;
- ‘fit and proper’ person requirements continuing to be imposed through police checks on current and potential taxi drivers;
- the posting of maximum fares both inside and outside taxis, with notification of these fares (and any changes to them) having to be submitted to the government body responsible; and
- minimum levels of English and local geographical knowledge tests for all drivers.

Since the relaxation of entry into the taxi industry in New Zealand, real fares have fallen, the availability of taxis has increased markedly, and substantial innovation and market segmentation has occurred (see box B4.2).

The New Zealand Ministry of Transport believes that reform has not only brought about better service; it has also led to increased consumer information and choice. Higher service levels are the result of organisations vying for greater market share and hence ensuring their drivers are more responsible for their actions.

Figure B4.3: Taxi fares around Australia



Actual fares would vary depending on the level of congestion.

Source: Australian Taxi Industry Association (ATIA)

Box B4.2: Reform of the New Zealand taxi industry

Following a review of the New Zealand taxi industry in 1987, major changes were made to it in 1989. The emphasis of regulation shifted from quantity-based controls (such as fixing taxi numbers and fares) to quality-based controls (such as ensuring vehicle and passenger safety). The taxi industry was given two years notification that the regulations governing the industry were going to change and no compensation was paid. A new licence may be obtained on demand for a (purely) administrative fee.

Prior to these changes, taxi licences sold for around \$30 000. The current rate is about \$16 000 (although taxis are required to belong to an approved taxi organisation that operates 24 hours a day).

Taxi operators now set their own fares but are required to notify the Ministry of Transport of their fares and charges, and any changes to them. Maximum fares have to be displayed prominently both inside and outside taxis.

Since 1989 many taxi organisations have either maintained their fares or actually decreased them. Taking inflation into account real fares have fallen dramatically:

- the real value of flagfall charges fell in two-thirds of cases;
- although the majority of organisations increased their standard tariffs, in real terms the standard tariff fell in two-thirds of cases;
- one-fifth of all organisations abolished their penalty rates and, for more than half of New Zealand's taxi organisations, penalty rates fell in real terms;
- the real cost of telephone charges fell in ninety per cent of cases, with some organisations now offering free phone services; and
- overall, real taxi fares fell in eighty per cent of cases.

Users now have a choice which taxi to take, at what price. Better quality taxis are able to charge higher fares than those serving people interested solely in getting from A to B.

Innovation has occurred to varying degrees as taxi operators, faced with the need to compete to survive, have started to look at ways of maintaining their customer base or gaining further patronage. In some cities, taxi organisations cater for specific 'niche' markets, for example Talofa Taxis in Auckland. In other places, such as Palmerston North, taxi organisations have taken over the entire public transport system.

However change to the taxi industry has not been without its teething problems. Fares in areas with little or no competition went up by 30 per cent in some cases and there was overcrowding and overcharging at airports. Blue Star Taxis in New Zealand acknowledged concerns about overcrowding at airport taxi ranks, fights between taxi drivers from rival companies and the need to re-regulate to ensure minimum levels of English and geographical knowledge, but added: 'It is fair to say in many cases taxi fares to customers have reduced and where they have not actually reduced they have been held ... The additional competition certainly has encouraged taxi organisations to look for other work opportunities.' (Sub. 269, Attachment 1, p. 2).

Source: NZ Ministry of Transport and Silvertop Taxis (Sub. 269)

Real fares have remained constant in the United States since reform was introduced. However the taxi industry has pointed out what it feels are negative aspects of reform in the United States, such as overcrowding and overcharging at airports and having to work much longer hours for the same or less money (see box B4.3).

Lower fares

In a competitive environment with no restrictions on fares or the number of taxis, if the second taxi on the rank were charging cheaper fares than the first, assuming both taxis were of the same standard, it would be natural to take the second taxi. The various taxi organisations in each city would have an incentive to discount prices to attract a larger market share. With advertising users could be made aware of the cheapest taxi company, particularly in the telephone order market, which is growing and already accounts for over half of the market in Australia.

In the longer run, less efficient operators would be forced out of the market. It is difficult to comprehend how an increase in the supply of taxis could be bad for the public. Consumers are not worse off because taxi ranks are full, as waiting times fall. Stability in the taxi industry through regulation transfers the 'costs' of instability to consumers. It is not in the community's interest for the regulatory bodies responsible for the taxi industry to ensure that all operators make a profit.

Greater competition will also lead to price discrimination. This would give people more choice whether to take a taxi or some other form of transport and, if a taxi, which one to take. Best value for money would become a practical concern for customers. Holding fares constant under regulation means service is underpriced in peak periods and overpriced in off-peak periods. Taxis should be able to develop a greater range of peak and off-peak fare 'packages' as well as differentiating prices depending on the quality of service.

Service innovation

Open — or at least less restricted — entry into the taxi industry (subject to safety requirements) would lead to greater service innovation as incumbent operators and new entrants competed for greater shares of the transport market.

Box B4.3: Changes to the United States taxi industry

During the late 1970s the following United States cities relaxed entry controls on their taxi industries:

- Atlanta
- Charlotte
- Fresno
- Kansas City
- Oakland
- Phoenix
- Portland
- San Diego
- Sacramento
- Seattle
- Tucson

Reform varied from city to city. After the changes were introduced, the majority of new entrants were single operators working mainly from airports and cabstands, except in cities where new entrants were required to join a company with more than 25 taxis operating 24 hours a day. Taxi numbers increased by between a quarter and one third.

The impact of open entry on taxi fares has been the subject of considerable debate. Frankena and Paulter (1986) claimed that taxi fares had fallen since deregulation (for example, fares rose by 23 per cent in Seattle but the CPI rose by 30 per cent — a real decrease of 7 per cent). It seems that overall real fares decreased or remained about constant as the result of deregulation, with fare increases only occurring in areas where there was little or no competition or at airports and hotels where single operators charged excessive fares. Consumers were left with greater choice. As Doxsey said in relation to San Diego, 'with open fare setting people had access to even lower fares even though the average was already low. The industry median fare was below average which means half of the cabs operating had fares below average' (Doxsey 1986).

Most submissions to this inquiry claimed the US experience was a failure, citing the need for reregulation (such as the resetting of maximum fares at Seattle airport) and overcrowding at airports and taxi ranks. Most critics cited Teal's studies of taxi deregulation in the US in support of their arguments. He concluded that complete deregulation of the taxi industry 'will result in little or no benefit to consumers (and possibly some disbenefits), and will create some definite financial problems for taxi operators and drivers' (Teal 1989b). Complete deregulation in this case meant immediate open access, with new entrants not being required to affiliate with established taxi organisations.

However, Teal also argued that a solution to the problems encountered in changes to the US taxi industry could be to require all operators to belong to an organisation which provided 24 hour radio dispatched services. These organisations could be required to be of a certain size if deemed necessary and maximum fares could be established if price gouging became a problem. 'These proposals will allow the market to work and provide opportunities for entrepreneurs to enter the taxi industry, without setting off the unfavourable economic dynamics observed in several US cities' (Teal 1989b). Teal and Berglund (1987) suggested eliminating all entry controls (except for quality controls, such as safety regulations), but retaining price controls, at least in the form of rate ceilings. This would allow new competitors to enter the industry, and at the same time protect uniformed consumers from excessively high fares when rates vary substantially.

Sources: Frankena & Paulter 1986, Doxsey 1986, Teal 1989b and Teal & Berglund 1987

With changes to regulation that relax controls over seat numbers, some taxis could become more of a quasi-bus service, although the traditional type of taxi may remain the most common. This would allow taxis to operate in areas where conventional public transport does not provide adequate service, and permit taxi operators to gain a larger share of the transport market. As the South Australian Office of Regulation Review stated:

Currently taxis are used predominantly by convenience users (non-car owners, people in a hurry, or as an alternative to drinking and driving and those people who don't foot the bill). But potentially a much wider market for taxis exists. The taxi could be an effective alternative to households owning a second car. Taxis could also provide efficient services to areas where orthodox public transport does not extend, where demand does not justify such a service or where the frequency is too low. Taxis could also be an effective alternative to the company car ... It is difficult to foresee exactly what form taxi services might take under such a scenario, but that is one of the main advantages. Competition forces the taxi operators to find out what people want, and provide it if there is sufficient financial incentive. (South Australian Office of Regulation Review 1991)

This has occurred to a degree in New Zealand as taxi operators, faced with the need to compete to survive, have started to look at ways to maintain their customer base or gaining further patronage. There are cases in some towns where taxi organisations are tendering for low patronage bus routes, using mini-buses and offering discount multiple fares. While there are some examples of taxis expanding their role (for example, the Hallett Cove experiment mentioned earlier), such initiatives would become the rule rather than the exception.

The ATIA has suggested that private bus operators and the taxi companies which are capable of meeting the needs of the local community should be allowed to tender for the service. Taxis and private buses have long periods when they are under-utilised. This spare capacity could be used to provide general local transport (Sub. 94, p. 28). Community transport operators are willing to work with both the private bus and the taxi industry, and are presently doing so, in some areas.

Opportunities for taxi drivers

Today, anyone wishing to buy a taxi licence must purchase it in the open market for its full price, or wait for governments to release more plates and bid for these at auction (see table B4.1).

A further option is to lease plates from a licence holder — and that is an expensive option: presently about \$300 a week in Melbourne, for example, an amount which has to be recouped by the lessee driver before he/she starts to earn a living.

Ending the restrictions on taxi numbers will enable people to enter the industry without the above constraints, bringing along new ideas and greater competition. A relaxation of entry conditions would also mean the creation of more jobs for drivers — all the more so if (as the Commission recommends elsewhere in this report) the urban transport market as a whole is opened up, allowing taxis to operate in markets traditionally dominated by conventional public transport.

The taxi industry association in New Zealand has argued that reform has allowed too many new operators into the industry and meant a downturn for all operators. Leaving aside the benefits to taxi users (see box B4.2) it is striking that — according to the New Zealand Ministry of Transport — taxi driver earnings in both New Zealand and Australia have fallen by about thirty per cent in recent times, although the Australian industry still functions under conditions similar to those applying in New Zealand before its reforms were implemented. This suggests that the downturn in activity was due to the current economic climate rather than the taxi reforms.

Safety and quality of service

The ATIA suggested that reform of the taxi industry would lead to falling safety levels and the entry of incompetent drivers. Quality of service is a related issue. The ATIA believed the economic regulation controlling taxi numbers is also used to control the quality of service within the taxi industry:

... economic regulation also is used to control quality of service. While the Industry Commission shows a clear bias towards customers choosing between the various qualities of service that would allegedly be on offer under deregulation, this is not what the community wants ... At times of high demand, when taxis may not be plentiful, the opportunity for choice is limited and therefore the consumer has insisted that government regulate as to the quality of service on offer by any taxi. (Sub. 254, p. 2)

The Commission's response is that safety and quality of service concerns can and should be handled by requiring vehicle standards to be met, having minimum levels of driver training including English and local geography tests, and ensuring all drivers are 'fit and proper' persons.

B4.6 Issues in reform

While the Commission considers there would be significant benefits from a system of open access (subject to safety and price notification requirements), the difficult question is how and how quickly we can get there. When considering

open access, the difficulties in overcoming the associated — notably equity — concerns must be considered.

What would happen if open access to the taxi industry were allowed overnight with no compensation to taxi licence holders?

It would certainly raise major equity concerns. People who have recently bought their taxi licence would see the value of this asset collapse. For example, people who have been made redundant and then invested severance payments in a taxi licence would be seriously disadvantaged. Taxi owners may have bought their licence(s) in the expectation that regulatory conditions would not change. Many owner-drivers see their taxi plates as their superannuation or retirement policy. In the words of the ATIA:

Owner-drivers in the taxi industry do not receive any long-service leave, holiday pay, superannuation or other similar entitlements. Consequently, they have looked at the capital appreciation in their taxi licence (on which they will have to pay capital gains tax) as their inflation-resistant security for retirement. (Sub. 94, p. 35)

The taxi industry argues that taxi owners have obtained their licences in good faith and that the government would therefore have an obligation to compensate them. The ATIA stated:

Considering the sale value of their licence is subject to the vagaries of market forces ... and has been dependent on the licence holder making substantial capital investments; ... and considering many of the existing licence holders have had to make substantial capital payments to purchase the licence in the first place; then it would seem inequitable in the extreme to abolish this combined licence value and superannuation scheme; especially since any abolition will have no effect on the availability of taxi services...

... current licence values represent to a substantial extent the capital investment placed by individual licence holders in the industry's infrastructure. Consequently, any forced abandonment of this capital value by Government would require compensation. (Sub. 94, pp. 35, 54)

The question of compensation for existing taxi licence holders raises some difficult issues. It can be argued that many have earned 'above-normal' profits for some years and have already amortised their investment. While this is not the case for those who have recently bought a licence, they may have factored in the risk of the industry being opened up when deciding how much to pay for the licence.

State and Territory Governments themselves recognise the dilemma. For example, the ACT Government said:

A potentially difficult issue arising from deregulation of the industry relates to the adverse financial effects on existing licence holders. While it could be argued that long-established licence holders have enjoyed the benefits of economic rent for a number of years and as such may not be adversely affected, those who have obtained licences

recently have paid a high premium in expectation of guaranteed returns in the future and could face substantial capital losses in a deregulated market. If some degree of regulation were to be pursued, one option to ameliorate this effect would be to utilise an agreed phasing out period. (Sub. 167, p. 33)

But as Shann has stated:

In areas like tariff protection and quotas we have generally not paid compensation to existing beneficiaries, but have phased in change. The bulk of taxi licence plates were purchased before the big take-off in the values of plates in the late eighties. Owners would lose a possible capital gain rather than be forced to realise a capital loss. (Access Economics 1993)

And the Commission noted in its *Annual Report 1990-91*, referring to deregulation of the New South Wales egg industry:

Rausser and Irwin (1987) argue that regulatory arrangements can be viewed as a contractual arrangement between the government and certain parts of society, and that compensation may therefore be due to those adversely affected by deregulation - that is for 'breach of contract'. However, in circumstances where the benefits of regulation are received by a minority group at greater expense to the rest of society, with whom the government also has a moral and a political contract, the obligation of the contract is weakened. (IC 1991a, p. 169)

A further question that arises is whether some plate holders are more deserving of compensation than others. The Commission was criticised for not distinguishing in the draft report between different categories of licence holder. Silvertop Taxis said 'compensation to various plate owners (based on their time and cost of entry into the industry and whether they have 'amortised their investment') is simply ignored' (Sub. 269, p. 9). In Adelaide for example (see figure B4.4), the largest increase in taxi licence values has been over the last ten years; therefore those who have bought their plates most recently have the most to lose.

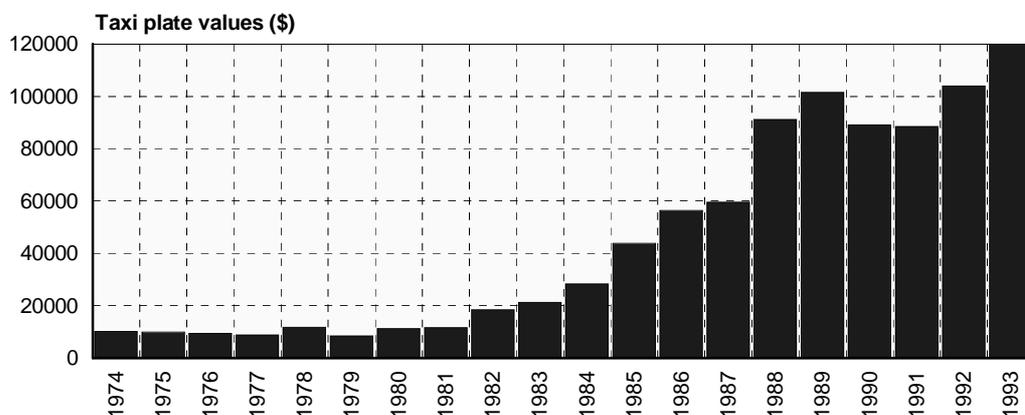
The Northern Territory Government considered that any compensation should be limited to those who had bought their licences recently:

Whilst agreeing that governments may have an obligation to pay compensation (the entry restrictions by governments have enabled taxi plates to be traded at high prices), compensation should be restricted to those licensees who have recently entered the industry and have not had time to amortise the cost of a licence. This will avoid a windfall gain to those plate holders who have been in the industry for some time and have covered the cost of their plate many times over. (Sub. 310, p. 3)

It is certainly possible to think of options which would differentiate between licence holders in a way which might be seen by some as 'fairer' and which would involve substantially reduced compensation payments by government. However, notions of equity here are not straightforward. At the time regulatory changes are introduced, the market value of a licence is the same for all holders — regardless of when they obtained it — and all suffer the same loss. Moreover,

it is desirable to keep any scheme simple and administratively manageable. The Commission is not recommending this approach.

Figure B4.4: Taxi licence values in Adelaide, 1974 to 1993



Source: Trade Practices Commission

B4.7 The Commission's reform proposals

In light of its analysis and the reaction to its draft report proposals, the Commission favours a program of reform which will enable the taxi industry to expand and diversify while retaining all aspects of public safety regulation. It presents four options.

Option 1: Periodic sale of licences

This option is intended to achieve open entry over a number of years and the lower prices to taxi users that would follow. The government sells new licences by public tender every twelve months. The sale program is announced in advance.

The option has two variations. The first involves new licences being released each year with the proceeds to be distributed in equal shares to existing licence holders. This financial compensation would be in addition to the non-financial compensation inherent in any phasing out of the restrictions on entry. The second variation involves releasing fewer new licences each year, but no financial compensation.

Under the first variation, each year on 1 December (for example) a number of new licences are sold by public tender equivalent to 10-15 per cent of the licences on issue on 15 November that year. The proceeds of each tender (net of its administrative costs) are distributed in equal shares to all licence holders (as

at 15 November) within two weeks. The program continues for a number of years until no bids are received; from that time the government issues any new licences on demand, at no more than their administrative cost.

Under the second variation, each year on 1 December (for example) a number of new licences are sold by public tender equivalent to 5 per cent of the licences on issue on 15 November that year. The proceeds of each tender are retained by the government, not distributed to existing licence holders. The program continues for a number of years until no bids are received; from that time the government issues any new licences on demand, at no more than their administrative cost.

The Commission also recommends that, under this option, taxi fares be deregulated immediately. However, to protect taxi users, licence holders should be required to notify maximum fares (and any changes to them) to the government and to post these fares both inside and outside their vehicles. Customers could then choose which taxi to take, rather than be expected to take the first on the rank, as happens now.

Option 2: Separate the taxi rank and phone booking segments of the market

As suggested by Dr Radbone, another option would be to divide the taxi industry into two parts: taxis standing at ranks and hailed in the street, and taxis booked by phone. He noted that 'practically all the problems of deregulation relate to the former, even though it is a relatively small part of the total taxi industry. Perhaps licences to occupy stands and ply for hire in the streets should remain restricted, while open entry [would] apply to the rest' (Sub. 218, p. 4).

This option could be implemented by allowing open entry into the hire car industry and relaxing the conditions under which hire cars operate, so as to blur the distinction between hire cars and taxis booked by phone. Hire cars would still not be allowed to ply for hire in the street nor stand on taxi ranks. But they could establish radio networks and develop new fare packages.

If this option were adopted by State and Territory Governments, they could follow the South Australian Government's policy of issuing new hire car licences for \$50 on demand.

Option 3: Tie taxi licence numbers to performance requirements

A further option comes from Queensland, where a new scheme is being introduced by the Government. Taxi organisations will have to meet certain performance standards under service contracts within defined areas. The performance standards may specify the types of service to be provided,

minimum levels of customer service, service reliability and safety levels of accessibility for people with disabilities.

A taxi organisation is required to provide twenty-four hour service and is not allowed to refuse entry to taxis wishing to join it provided the new-comer is willing to pay a reasonable commercial fee.

If the performance standards are not met, the Director-General of Transport may issue additional taxi licences 'so that the standards are achieved' (Queensland Department of Transport 1994b).

It remains to be seen how the scheme works out in practice. However, setting taxi licence numbers to performance-based measures (such as response time - that is, the time taken for a taxi to arrive when called by phone) is bound to be arbitrary. It is difficult to determine the optimal level of performance and administration of the scheme could prove costly.

Option 4: Cap the present value of taxi licences

This option attempts to minimise the loss in licence values which would be suffered by current licence holders under option 1, while allowing at least some more competition within the taxi industry. New taxi licences would be available on demand from the government at the present market price. This would put a cap on the present value of licences, which would fall in real terms over time.

Capping would put a stop to speculative investment in taxi licences, but would do almost nothing to achieve the open entry to the industry and lower prices to taxi users which the Commission seeks.

B4.8 Conclusion

Option 1 was proposed in the draft report but has since been amended. (The other three options were not presented in the draft report.) It was heavily criticised by the taxi industry, and not well received by State and Territory Governments (except the Northern Territory Government). But it was strongly supported by the transport disadvantaged (see box B4.4).

The amendment to option 1 lies in the speed at which new licences would be issued if financial compensation were paid to existing licence holders. The Commission is now proposing a rate of increase of 10 to 15 per cent each year, rather than 15 per cent. The precise rate of release needs to be determined by governments — but should be fast enough to allow the taxi industry to expand and diversify, and to bring the consequent benefits to the community as soon as possible.

Box B4.4: The benefits of reform for the transport disadvantaged

Without exception all groups representing the transport disadvantaged saw the Commission's reform proposals in the draft report (that is, option 1 in this report) as a step in the right direction. Some responses were as follows

The *Council on the Ageing* said it 'sees more competition in the industry will lead to greater price competition (leading to lower fares), market segmentation, innovation and higher standards of cleanliness and punctuality. Other advantages hopefully would include more consumer information and more choice.' (Sub. 301, p. 1)

The *(NSW) Community Transport Organisation* agreed with the reform package, stating that change 'may also have the effect of allowing fare levels to drop which would in turn may take the strain off community transport groups by providing many of their customers with an alternative mode of travel.' (Sub. 249, p. 4)

The *National Accessible Transport Committee* said, that although reform should be approached with caution and adequate provisions must be retained for multi-purpose taxis, 'anything which improves the supply of taxi services will enhance the access of people with disabilities, particularly those with the most severe disabilities who, as the draft report establishes, rely most heavily on taxis for mobility.' (Sub. 231, p. 6)

ACROD concluded 'we have no doubt that deregulation would benefit people with disabilities ... ACROD supports the Commission's recommendations concerning deregulation of the taxi industry, as decreased fares and the opportunity to innovate will benefit people with disabilities as well as other users.' (Sub. 217, p. 5)

The Commission strongly prefers option 1 and recommends its adoption by all State and Territory Governments. It would bring the greatest possible benefits to taxi users and result in the most efficient structure for the taxi industry. Coupled with the reforms suggested elsewhere in this report, it would allow the taxi to play a much greater role in transporting the Australian public, including in community transport and off-peak public transport.

But if State and Territory Governments are unwilling to adopt option 1 at this time, the Commission recommends they consider the reform proposals outlined in options 2, 3 and 4. Option 3 (the Queensland Government approach) has the potential to provide better taxi services to the community, while option 2 is similar to the South Australian Government's policy of allowing open entry into the hire car industry. Option 4 would put an end to the wasteful upward spiral of taxi licence values, but do little else to achieve a better deal for the community, particularly those on lower incomes and people with disabilities.

Irrespective of the options adopted, the Commission considers that taxi boards and advisory committees should be structured to give users a substantial say in their operation. This will require representatives from a broad cross-section of the community, including people with disabilities.

B5 COMMUNITY TRANSPORT

Community transport comprises a diverse range of specialised transport operators that play an important but often overlooked role in providing services of a localised and/or specialised nature. Typically community transport is run by not-for-profit organisations providing services to people with disabilities, older people, and other groups with a limited range of transport options. The extent and cost of community transport services is not well documented, a reflection of its localised nature, the diversity of service types and the variety of funding sources used. Community transport has the potential to play a much larger role in the transport task but is currently impeded by inflexible regulatory and funding arrangements.

B5.1 The role of community transport

Community transport services are provided throughout Australia by a large number of not-for-profit organisations to meet specialised local transport needs. They may be scheduled or demand responsive, in vehicles chartered from licensed private bus and taxi operators, leased from local councils, or simply volunteers using their own cars. Services are provided by a combination of paid and volunteer staff, and are available for shopping and library trips, before and after school care, day care, rent payment, social security visits, medical trips and so on.

In the words of the Victorian Community Transport Organisation, community transport:

... ignores geography, ranging and roving over wide areas to provide mobility to those who cannot access conventional services. The other part of community transport pays strict attention to geography, seeking to service general populations whose transport disadvantage arises solely from the failure of conventional services to conquer distance ... (Sub. 275, p. 1)

Community transport services have three distinctive characteristics. They are:

- provided at a local level;
- primarily for the transport disadvantaged; and

- operated by local councils, voluntary groups and not-for-profit organisations.

A combination of a gradually ageing population and greater social mobility are leading to changes in travel demand patterns (see chapter A2). Fixed route bus and rail services do not reach out to serve adequately all residential locations, and the basic radial configuration of networks forces some travellers to ride into the central business district and then transfer to another route back out in the same general direction.

In the words of the South Sydney Council:

Public transport services are not planned with the needs of minority or disadvantaged groups in mind. Day services need to be improved to meet the needs of people with disabilities, the unemployed, single parents and others who depend on public transport. (Sub. 8, p. 25)

Since community transport services are organised at a local level, they are capable of responding to local transport needs. Too often they are prevented from satisfying such needs due to outdated rules and regulations governing transport services. Changes in travel patterns will require a more flexible urban transport system, capable of responding, at a reasonable cost, to the needs of the community (see chapter A2).

The NSW Community Transport Organisation describes these needs:

There is a major latent demand for public transport services that is not being satisfied by the traditional operators.

Traditional public transport is designed to cater almost exclusively for the able-bodied who wish to travel during the day to a narrow range of destinations. (Sub. 28, pp. 2, 10)

People with disabilities and older people constitute the main target group for whom the majority of councils and other community organisations provide services (see table B5.1). Some people with severe disabilities are dependent on specialised transport. For example, the Noarlunga Volunteer Transport Service in South Australia provides transport services for appointments to doctors, hospitals, therapy, rehabilitation, shopping and socialising, for older people and those with disabilities (Sub. 155).

ACROD commented that people with disabilities:

... do not consider buses and trains an option — even with wheelchair lifts, the time taken and the difficulties of getting to and from bus stops or stations close off public transport as a real option ... (Sub. 52, p. 10).

Multi-purpose taxis are not always an economically viable transport option, because the cost of using the service is often high compared with public transport fares. However, the Commission's proposals to reform the taxi industry would reduce taxi fares (see chapter B4).

Most states and territories have community transport programs, and in 1992 the Commonwealth Government established the National Accessible Transport Committee to examine ways of improving accessibility to, and availability of, transport for people with disabilities, including the less mobile elderly, particularly through achieving reciprocal rights between various state and local programs.

Box B5.1: Meeting local transport needs: Happy Valley Council

Happy Valley is situated south of Adelaide, on the metropolitan fringe. Like many adjoining councils, Happy Valley has experienced rapid growth over the last decade, partly due to lower housing costs. The Council covers a large area with pockets of development separated by steep, hilly terrain. Consequently, it is costly for the transport authorities to provide a conventional transport system within the council area. The existing transport service is commuter-oriented to Adelaide central business district, though there are some cross suburban services to shopping centres at Marion and Noarlunga.

Due to local demand for transport within the Happy Valley area, the Council established a community transport service. The service carries approximately 40 passengers a day, to local shopping centres and medical clinics. The users include single mothers, older people, people with disabilities, and the unemployed. The service is provided in cooperation with many groups within the Council such as after school care groups, associations for older people, and youth organisations. It is operated by a paid coordinator and volunteer staff, and the Council funds the operating costs of the project through rates.

State transport regulations prevent the Council charging fares to passengers who hail the bus, since this is considered to be direct competition with the State Transport Authority. However the community transport service can charge a fee, when passengers phone the service and request transport.

Source: Information received by the Commission from the Happy Valley Council, South Australia

Providers of community transport

An array of community transport organisations operates within Australia, each providing specialised or general services to suit the demands of their target group (see table B5.1). In New South Wales there are 32 registered urban community transport projects. In Victoria and Queensland most metropolitan local councils are involved in the provision of community transport. Similarly, in Western Australia there are approximately 120 community transport operators, and 33 in South Australia. Together, these services provide a major contribution to the mobility needs of the urban population.

Table B5.1: Examples of community transport providers

<i>Operator</i>	<i>Users</i>	<i>Typical trips</i>	<i>Vehicles</i>	<i>Funding</i>
New South Wales				
<i>Baulkham Hills Shire Council</i>	People with disabilities and older people	Trips to shopping centres, day care, and social outings	One modified bus and one station wagon	Home and Community Care (HACC)
<i>Holroyd Community Transport Group Incorporated</i>	People with disabilities and older people	Trips to medical clinics and paediatric treatment	Hire vehicles from the local council	HACC and funds from the State operated community transport program
<i>Inner West Community Shopping and Transport Service Incorporated</i>	People with disabilities and older people	Trips to shopping centres, and medical appointments	Two mini buses. They also have access to local council mini buses	HACC
<i>Macarthur Community Transport Service Incorporated</i>	People with disabilities and older people	Trips to medical centres and social facilities, including travel to Sydney, Cobram, Wollongong and Bondi	Five mini buses (one with a wheel chair hoist), and a station wagon. They also have access to local council mini buses	HACC and funds from the State operated community transport program
Western Australia				
<i>City of Bayswater</i>	People with disabilities and older people	Trips to shopping centres, day care visits and medical clinics		HACC
<i>Hills Community Support Group</i>	Residents with no access to transport, people with disabilities, older people, and those without family assistance	Trips to doctors, specialists rooms, hospitals, banking, library and shopping	Three mini buses, one with a wheel chair hoist	HACC and local council funding
<i>City of Stirling</i>	People with disabilities and older people	Trips to day care, shopping centres, library, and medical appointments	Three buses and one five seater van	HACC and local council funding

Table B5.1 cont/d:

<i>Operator</i>	<i>Users</i>	<i>Typical trips</i>	<i>Vehicles</i>	<i>Funding</i>
<i>Goodwill Industries of Western Australia</i>	Employees at Goodwill Industries unable to use public transport	Employees are transported to and from work and other work-related activities		
South Australia <i>Adelaide City Council</i>	Primarily for city-based non-profit organisations, senior citizens, community groups, etc.	Weekly trips to shopping centres, and social facilities	Buses with drivers are leased from Transit Coaches. The size of the vehicle depends upon passenger demand	Local Council funding
<i>Australian Red Cross Society - South Australian Division</i>	Patients attending the Cranio-Facial Unit, and the airport	Trips to medical and dental appointments, including Blind Welfare Day program activities	One eight seat bus with wheelchair hoist and Red Cross Society station sedans	HACC and the Australian Red Cross Society
<i>City of Brighton</i>	For residents who are transport disadvantaged	Trips to shopping centres, the library, and various banks	One nineteen seat bus with wheel chair hoist and volunteers with own vehicles	Local council funding
<i>Ethnic Communities Council of South Australia</i>	People with disabilities, and older people from non-English speaking backgrounds	Health assistance, day-care visits, shopping and social visits. People outside the HACC target group can use the bus subject to its availability	One eight seat bus with wheel chair hoist	HACC

Source: Information obtained by the Commission from the respective community transport providers

Community organisations have a mix of vehicles which they own, and others are hired as required, or chartered from licensed bus and taxi operators. Some projects rely solely on volunteers using their own cars to provide transport.

A typical community transport network is managed by a project coordinator. Experience has shown the level of services provided is a reflection of the skills of the coordinator in matching the local transport needs with available resources, organising volunteers and seeking out suitable vehicles.

The suppliers of community transport include local government bodies and various non-government organisations within the community. Non-government bodies include voluntary agencies, nursing homes, old age homes, associations for people with disabilities, local community groups, and service clubs such as Lions, Rotary and the Returned Services League (RSL). Some local councils run community buses, while others operate volunteer driver schemes using private vehicles. Arrangements vary widely between councils.

B5.2 Impediments to community transport

Participants in this inquiry identified three key factors restricting the potential role of community transport: existing government regulations, lack of coordination, and funding arrangements. While there is no specific Commonwealth or State legislation governing the operation of community transport, it is limited by the existing bus and taxi regulation within each state, and by the funding arrangements of the three levels of government. Recent studies conducted into the community transport sector cite instances where community transport vehicles lie idle during certain periods of the day, while other operators are unable to secure a vehicle, due to the lack of coordination/brokerage between organisations.

Government regulations

As detailed in Part A, most urban transport services in Australia are provided in a highly regulated environment. Both public and private bus operators, for example, are provided with legislative, or de facto, monopolies over the provision of scheduled bus services in defined urban areas or on particular routes. Similarly, taxis are regulated under licensing arrangements which restrict entry into the industry.

Community transport operators in all states are prevented from running transport services that could compete with existing route services. In some cases, licences are not granted even if the service proposed by the community transport operator would not encroach on the existing route service, or where the existing route operator does not provide an adequate response to the area's transport needs (see box B5.2).

In addition, legislation in most states prevents community transport organisations from charging their clients a fee, and in extreme cases prevents full information about the service being widely advertised. So community transport has tended to focus on providing service to certain defined groups in

the community or providing feeder services to existing transport authorities, despite its potential to provide a wider transport service.

Box B5.2: The side effects of regulation: The case of Pakenham

The Shire of Pakenham is located in Victoria, on the south-eastern fringe of Melbourne. Pakenham residents are experiencing transport problems faced by many fringe areas in our cities. Conventional urban transport is both difficult and expensive for the government to provide in a low density, sparsely populated area such as Pakenham. The Public Transport Corporation (PTC) operates two bus routes, travelling from east to west across the shire. There are no transport services linking the northern and southern areas of Pakenham.

According to some residents in Pakenham, the large PTC buses progressively damage local streets and do not provide an acceptable level of service. The Pakenham Council argues that mini-buses are more suitable to the area and are capable of providing a more frequent and faster connection to the rail station and local amenities.

The Hills Transport Action Group (HTAG) operates a community mini-bus service within the shires of Pakenham and Sherbrooke. The service is designed to provide transport to the residents not currently served by the PTC. The HTAG receives some funding from the two shires to provide the local service.

State regulations restrict HTAG from charging their users a fare, since they are not licensed under the Victorian Transport Act. Registration is prohibitively expensive for a small community transport operator and it will only be offered to route services which do not infringe on the existing operators service. Thus the HTAG is unable to run a route service because the PTC operates in the area.

The HTAG relies mainly on donations to fund its operations, together with grants from the shires of Pakenham and Sherbrooke. The Group is even restricted from advertising the times of its buses, and resorts to surreptitious advertisement of the service. It does not qualify for funding under the HACC scheme because it provides transport for all local residents.

There is an extensive school bus service operating in the Pakenham region. Regulations stipulate that the buses can only be used to transport school children. These resources remain idle during the day and on weekends while many in the community lack transport to local amenities.

Source: Information obtained by the Commission from the Pakenham Council

The NSW Government is willing to grant accreditation to community transport operators who focus on certain groups stipulated by the Department of Transport. While accreditation allows the operators to run a commercial service, it prevents them from providing a general transport service for the benefit of all transport disadvantaged groups. Such legislation, in effect, constrains community transport to a specialist transport role.

According to the NSW Community Transport Organisation, inconsistency in the availability of pensioner concessions forms another impediment to the growth of community transport. Where pensioner concessions have been made available, in areas like the NSW north coast, a network of community services has developed to serve small isolated communities and groups of passengers who previously had difficulty in accessing conventional public transport (Sub. 28).

The effect of each State and Territory's transport legislation is to bestow area monopolies on the conventional public transport operators and impede the growth of community transport, even in areas where existing public transport is non-existent, or unsuited to people's needs.

Lack of coordination/brokerage

Funding of community transport is not conditional on the operators sharing resources, so often the community transport fleet is not utilised efficiently. In Adelaide, Dr Radbone identified:

... at least 50 community buses that spend much of their time parked behind fences and this does not include the buses of the spastic centres and the Crippled Children's Association, or School buses (Radbone, I. 1992, p. 2).

The Western Australian Authority for the Intellectually Handicapped and Bureau for Disability Services stated that community transport resources are not efficiently utilised due to the lack of a coordinating body:

... some community transport providers, who acknowledge that vehicles lay dormant in their garage for a large part of the day, have expressed a wish to better capitalise on the resources they have ... In the absence of a coordinating body which is both knowledgeable about the need for services for people with disabilities and has the authority to facilitate and coordinate the shared use of resources, the task has been difficult. (Sub. 209, p. 8)

A broker matches the demand for transport with the community transport resources available. The broker ensures that the existing local stock of community transport vehicles is utilised efficiently.

The Adelaide Mini Bus Company saw the brokerage system as:

... the same way a Taxi company operates with a fleet of suitable vehicles on an owner/driver basis. The broker being the administrator, the coordinator, the dispatcher

and the marketing arm. Weekly fees paid by owner drivers would be required to fund the administration. (Sub. 79, p. 7)

The (Melbourne) Western Region Commission is currently preparing a feasibility study for the Public Transport Corporation (PTC), regarding a brokerage scheme between local councils in that region.

School buses could be used more widely to provide public transport at minimum cost. The 1991 South East Queensland Passenger Transport Study (SEPTS) recommended that in areas of low population density, school buses should be utilised for general passengers and mid-day round trips. (SEPTS 1991, Volume 1, p. 40)

Similarly, if car and van pooling arrangements and multiple hire of taxis were encouraged, then vehicles capable of providing local transport, such as mini-buses, could be used to provide services in lieu of under-utilised route bus or rail services. The Western Australian Municipal Association suggested:

Thought should be given to integrating taxis into the public transport service, on bus routes outside peak hours, or on routes where a bus service has been denied on viability grounds. Passengers in multiple-ride taxis, where these are used as an alternative to a bus or rail passenger transport system, should have the same public liability protection as passengers travelling on other forms of public transport. (Sub. 73, p. 4)

The Australian Taxi Industry Association suggested that private bus operators and the taxi companies which are capable of meeting the needs of the local community should be allowed to tender for the service. Taxis and private buses have long periods when they are under-utilised. This spare capacity could be used to provide general local transport (Sub. 94, p. 28). Community transport operators are generally willing to work with both the private bus and the taxi industry, and are presently doing so in some areas.

Funding

Despite community transport's demonstrated ability to improve accessibility, it has been relatively unsuccessful in developing a mainstream transport service due to the lack of secure funding. Three tiers of government, welfare agencies, and local clubs all contribute to community transport to some extent.

A number of participants commented that it is difficult to identify accurately the true costs of the community transport sector. For example, the Noarlunga Community Transport Service in South Australia receives funds from the Home And Community Care (HACC) Program for the provision of transport for people with disabilities and older people, and from the local council to provide transport service for all local residents. The Noarlunga City Council, in turn,

receives funds from the State Government under the Community Transport Program.

Most funding for community transport comes from the Federal Government's HACC program, which is administered by the State and Territory Governments. The HACC program is focused on transport services for particular groups such as older people and people with disabilities. This focus undervalues the potential of community transport, which could provide services to all transport disadvantaged groups, including school children, the unemployed and single parents.

HACC funds are generally directed at paying the community transport coordinator's salary and for the purchase of one or more modified vehicles. HACC funds are only provided to community transport operators who service the HACC target groups, which includes older people and people with disabilities (see box B5.3). By implication the community transport operators are precluded from serving the whole populace. The Hills Transport Action Group in Victoria, for example, does not qualify for HACC funding because it operates a transport service for all Pakenham residents (see box B5.3). In some urban areas however, HACC has made a valuable contribution to local transport by serving a broader customer base than its traditional target group.

The House of Representatives Standing Committee on Community Affairs is conducting an inquiry into the HACC Program. The following issues are being examined:

- the cost and relative efficiency of services funded under HACC;
- access by the target population to HACC services, such as the appropriateness, availability, and effectiveness in meeting the Program's objectives;
- gaps in existing services; and
- the quality of care provided.

State government funding is offered to community transport operators in all states, except Queensland, through their respective transport departments and through support from health and welfare agencies. The purpose of the funding varies between states. In general terms the funds are directed to subsidising vehicles hired, or loaned from other bodies, or from volunteers, or to paying a community transport coordinator and driver(s).

Box B5.3: Home and Community Care (HACC) funding arrangements

Many people in the HACC target population lack access to essential transport due to physical disability and lack of suitably modified transport services. Emphasis in HACC is placed on service provision through coordination of HACC transport options in an area and the provision of mini buses to take people to and from services, where transport is not accessible.

HACC Program development priorities are identified in a published strategic plan for each State/Territory. It is developed by Commonwealth, State and Territory officials in consultation with HACC Advisory Committees, service providers and consumer groups, and agreed by Ministers. The strategic plan provides a three-year forward focus for the determination of funding and Program development priorities, with specific funding identified for the following year.

Each State and Territory has developed a needs-based funding formula to allocate funds in accordance with the priorities identified in the strategic plan. The funding formula takes into account factors such as the existing level of service provision, the number of people with a severe or moderate disability, and access by special needs groups such as Aborigines, people from a non-English speaking background and people living in rural or remote communities. A weighting may be applied to address particular factors such as remoteness.

For an eligible organisation to receive funding towards the provision of a specifically approved service contracted from a commercial organisation, the organisation must demonstrate that this is the most appropriate way of providing the service.

Organisations approved for funding are required to enter into an agreement with the State/Territory Government detailing the conditions under which funds are provided, including whether capital funding or recurrent funding.

Approved HACC transport projects are defined as ‘... an agreed organisation, to receive an approved allocation, to provide specified service types, to cover an agreed geographical area, to provide care for an estimated number of users over or during a specified period.’

To obtain approval for funding an organisation or joint body should be a non-profit organisation which is incorporated. Funding may also be provided for new services or for the expansion of existing services.

Source: Information obtained by the Commission from the Commonwealth Department of Human Services and Health

Many participants drew attention to the difficulty in obtaining secure funding from state governments. Transport authorities stated that there are many projects competing for funding, hence they are unable to fund many community transport services. In Victoria, only one urban project received funding from the Department of Transport for the 1992-93 financial year, namely the Western

Region Commission's community transport project; no funds were allocated to the program for the 1993-94 period. The community transport group in Pakenham is unable to obtain funding from the Victorian Government, because the PTC runs two bus route services through Pakenham (see box B5.2).

User-specific funding is an important mechanism available to State and Territory Governments, to allocate subsidies to community transport in an efficient and effective manner. State and Territory Governments could target certain groups in the community for fare concessions, and reimburse the provider for that part of the fare foregone, based on the number of journeys made, putting the onus on the operator to encourage patronage so as to generate revenue.

Since community transport is capable of performing a general transport function, there is a case for the operators sharing in the funding from each State or Territory's transport budget. The National Accessible Transport Committee recommended that funding should be through a coordinating body, such as the relevant state department of transport (DR transcript, pp. 421-422).

Community transport receives one-off payments or recurrent funding from several Federal and State departments, local councils, social and ethnic clubs, private organisations and welfare agencies. The Commonwealth Government allocated \$4.5 million of the \$89 million available under the most recent Urban Public Transport Program, to certain community transport providers in NSW, Queensland, South Australia and Tasmania. Funding was targeted to outer urban areas where public transport services were poor, mainly as one-off payments for the purchase of a community bus.

One option for obtaining greater value for funds allocated to community transport would be to make the funding conditional on the transport operators sharing the vehicles to utilise their fleet of vehicles more efficiently. The Australian Bus and Coach Association highlighted the benefit to community transport organisations in hiring vehicles from local bus and taxi operators rather than purchasing vehicles. It commented that the total cost per kilometre of operating a minibus travelling 2 000 kilometres a year is \$3.09, whereas a charter bus costs \$2.17 (as quoted in NSW Bus and Coach Sub. 251, attachment, p. 1, 13). Thus in some areas it may be cheaper for the community transport operator to hire a vehicle, especially where volunteer drivers are not available.

Some participants suggested that commercial organisations such as shopping centres, could be encouraged to fund or subsidise community transport services in return for advertising space on community transport vehicles. The Adelaide Mini Bus Service, for instance, welcomes non-user funding in return for services to commercial and community centres (Sub. 79, p. 3).

A number of participants suggested that funding at the local level would enable growth of locally-based community transport organisations, even if the local council were not running the service. Some local councils already provide facilities such as bus shelters, terminals and transport interchanges.

B5.3 Recommendations

The drop in public transport patronage throughout Australia is partly a reflection of the declining relevance of existing radial transport services in meeting many people's needs. At the same time, the growing number of community transport projects suggests that there are local transport needs which are not met by conventional transport services. Community transport has demonstrated its ability to provide sporadic or irregular trips within local areas at a lower total cost than the existing public transport operators, to serve all user groups and provide a broader flexible and demand responsive service.

Current regulations and funding arrangements, however, merely allow community transport to operate limited or feeder services to service people with special needs such as older people and those with disabilities.

Fulfilment of the potential role of community transport will require the relaxation of restrictive regulations and funding arrangements, and a willingness to transfer from conventional state-owned and regulated public transport to locally operated, controlled and funded transport services.

The Commission does not envisage community transport operators being allowed to establish new services and to charge fares where existing bus or rail services are adequate to meet the community's needs. However, in situations such as Pakenham (see box B5.2) or where there is an exclusive franchise but inadequate services, for example at night, community transport operators should be free to provide services and to charge fares for them. Moreover, community transport operators should be free to provide specialised services for those unable to use conventional services. In the words of the NSW Community Transport Organisation:

We are not saying that Community Transport wants to take over the responsibility of transport from private operators but in some cases it's more appropriate that we do it because I think we are better at doing that not only in the development sense but I think we are more responsive to special needs of passengers ... and there will be services where I think we are better equipped to provide that rather than the taxi and the bus industry. (DR transcript, p. 615)

Accordingly, the Commission recommends:

- **State and Territory transport licensing arrangements not be used to restrict the provision and development of community transport;**
- **community transport services not be restricted to people with special needs or to feeder services;**
- **where there are no existing bus or rail services, community transport operators be allowed to establish new services and to charge fares; and**
- **greater cooperation between local councils, welfare groups and bus and taxi operators be encouraged, for example, through the appointment of a community transport officer or broker.**

B6 CYCLING

Cycling is one of the most energy efficient, inexpensive and environmentally friendly modes of urban transport. While Australia has relatively high levels of bicycle ownership, the role of bicycle trips in the overall transport task is minor. Cycling has the capacity to increase its contribution to accessibility and mobility, particularly for shorter journeys and potentially dual mode trips. This chapter examines the current role of cycling in urban transport, the factors impeding its wider use and possible measures to improve its attractiveness.

B6.1 The role of cycling

Cycling, like walking, is a relatively low profile mode of urban transport in Australia, although it has been estimated that household bicycle ownership may be as high as 50 per cent in some Australian cities (ATAC 1993). In some countries bicycle use is much more prevalent, particularly for short journeys typically undertaken by car in Australian cities.

Approximately two per cent of trips to work, five per cent of all recreational trips and ten per cent of all educational trips in Australia are made on bicycles. Looked at another way, journeys undertaken for recreational and educational purposes account for most cycling trips (FORS 1988). However, levels of bicycle riding vary across Australia. For example, the Bicycle Federation of Australia estimated that approximately seven per cent of all trips in Perth and up to 10 per cent of all trips in Melbourne are made on bicycles (Sub. 235, Attachment 1, p. 2).

Funding for cycling facilities and promotion is provided by a variety of public agencies. In 1992-93 the Commonwealth Government provided nearly \$4 million for bicycle demonstration projects in state capitals and regional centres. This was in addition to nearly \$30 million of federal funds allocated to bicycle related projects under the Local Capital Works Program. Funds are also provided by local governments and state road authorities, although a comprehensive estimate of expenditure from these sources was not available to the Commission. Public transport authorities and schools also contribute through the provision of facilities such as seating, bike paths, lockers, footpaths and ramps.

A variety of groups and interests are affiliated with cycling and its promotion. They include bicycle organisations, such as the state and national bicycle committees, community cycling groups, road authorities (road infrastructure provision and maintenance), police (safety), local councils (bikeways and footpaths), manufacturers and retailers of bicycles, and users. Submissions received by this inquiry represented the breadth of these interests.

Several states have developed and implemented bicycle strategies which aim to expand the role of bicycles in the transport task. In response to recommendations arising from the Ecologically Sustainable Development Working Group's *Final Report – Transport*, the National Bicycle Strategy was initiated by the Australian Transport Advisory Council (Transport Ministers of the Commonwealth, State and Territory governments). The strategy was endorsed by Ministers in late 1992 and released in 1993. The Industry Commission encourages governments to pursue the implementation of this strategy.

The objectives of the strategy are threefold:

- to integrate cycling into the transport system as a legitimate mode of personal mobility, particularly for commuter trips;
- to encourage safe cycling in the community; and
- to reduce significantly the rate of bicycle-related crashes and the severity of injury to cyclists.

Importantly, the strategy requires that specific criteria, such as cost-effectiveness, technical feasibility and safety, be used to evaluate proposals designed to achieve these outcomes.

The strategy targeted five areas for particular focus:

- greater local and state government involvement in integrating cycling into the transport system;
- evaluation of urban planning options to facilitate safe cycling;
- greater cooperation between governments and community groups to reduce the social and economic cost of bicycle accidents;
- public education relating to the environmental, health and economic benefits of cycling and desirable road user behaviour; and
- improvement of information relating to cycling through the development of a cycling database.

B6.2 The benefits and costs of cycling

A number of submissions argued that cycling should be encouraged to increase its role in the transport task. One common argument was the environmental friendliness of this mode. Several submissions responding to the draft report highlighted the health advantages of cycling. Other arguments related to benefits for the transport disadvantaged, the potential to reduce car dependency, and encouragement of modal integration, especially between cycling and public transport. Disadvantages associated with cycling include a comparatively high level of accidents, the risk of bicycle theft and a lack of comfort and convenience compared with other modes.

Environmental and health advantages

Several participants highlighted the environmental advantages of cycling. The City of Fremantle described both cycling and walking as the ‘only truly sustainable transport modes’ (Sub. 9, p. 4). The Greenhouse Association pointed out the positive environmental effects in its submission:

Bicycle use can help to reduce greenhouse gas emissions, contribute to the health of the population, reduce localised air and noise pollution and solve the growing problem of road congestion (Sub. 26, p. 2).

According to the Victorian Bicycle Strategy, cycling is the most energy efficient mode of personal passenger transport (see table B6.1).

Table B6.1: Energy consumption by mode of transport

<i>Mode</i>	<i>Energy consumed per person per km (kilojoules)</i>
Car - driver only	4 800 - 5 800
Car and one passenger	2 500 - 3 000
Pedestrian	200 - 260
Bicycle	90 - 210

Source: VicRoads and State Bicycle Committee of Victoria 1991, p. 11

Cycling has a positive impact on health and fitness. A 1992 study conducted by the British Medical Association (BMA), *Cycling towards health and safety*, identified that, as a form of exercise, regular cycling encourages muscle, respiratory and cardiovascular improvement. It may also contribute to weight loss, stress reduction and mental health. Dr. Owen (Sub. 280, p. 1) noted that insufficient time is a common explanation for lack of exercise and suggested that cycling for work, school and shopping trips could solve the time problem, as well as have several other beneficial consequences.

Cost competitiveness

In terms of financial outlays, cycling is a relatively inexpensive mode of transport to the user. Establishment costs include purchase of the bike, a helmet, lights and a pump. Operating costs are low. According to the Bicycle Institute of New South Wales:

A standard utility bicycle with a life of ten years, used to cover, say, [1 500 km a year] ... could cost as little as 1 cent per kilometre (Sub. 93, p. 3).

Cyclists are not typically charged directly for the use of infrastructure such as roads, parking, bikepaths, or signs, although they may be charged for use of lockers.

Cycling may also be competitive in terms of travel time. For example, bicycle couriers are active in all major cities, their flexibility giving them time advantages over motorised couriers. The Bicycle Institute of New South Wales commented:

While bikes may not reach the same speeds as do other modes of transport, their average speeds, especially in inner urban areas, is more than competitive with other transport (Sub. 278, p. 10).

However, when factors such as longer distances, comfort and convenience are considered, the mode is less competitive.

Transport disadvantaged

The low cost of cycling is seen as particularly important in improving the mobility of the transport disadvantaged. The Bicycle Institute of New South Wales argued that:

The bicycle meets social equity needs well. The pricing of new and second-hand bicycles puts them within the reach of lower-income groups, making independent, accelerated mobility available to children, and to those without access to a car who live in areas not served by public transport. (Sub. 93, p. 3)

The State Bicycle Committee of Victoria said that more should be done to improve the suitability of cycling for these groups:

Anomalies exist in subsidies paid to the 'transport disadvantaged'. For example, heavy subsidies are paid for the School Bus program through the Transport Budget but secure bicycle parking at schools must compete with other capital bids within each school budget. A comprehensive plan for all transport within the State, agreed between the providers, would assist in redressing this anomaly. (Sub. 133, p. 4)

Safety and accidents

The high incidence of serious bicycle accidents, relative to other modes, is a principal disadvantage. The causes of accidents vary, but include motorists taking insufficient precaution, cyclists ignoring road rules or safety requirements, and a lack of facilities such as segregated bicycle paths.

A study by FORS (1991) found that in 1990 approximately three per cent of road user fatalities, and six per cent of road user hospitalisations, were cyclists. The Bicycle Federation argued that this figure underestimated the actual incidence of road user hospitalisations as a large proportion of accidents sustaining injury are not officially reported (Sub. 306, p. 9-10). These figures compare with approximately 18 per cent of road user fatalities and 13 per cent of road user hospitalisations accounted for by pedestrians and more than 67 per cent of fatalities and hospitalisations accounted for by car drivers and their passengers.

Several participants noted that cyclist behaviour increases the potential for accidents. For example, some studies suggest that:

... only 45 per cent of bicyclists observe basic road rules during the day (traffic signals and signs, no dinking, etc) and only 2 per cent observe these at night (requirements for lights, reflectors etc). Some of these factors may contribute significantly to bicycle trauma. (VicRoads and State Bicycle Committee of Victoria 1991, p. 9)

A number of submissions on the draft report argued that there is a lack of police enforcement of road rules as they apply to cyclists. This is perceived as a serious safety problem as it permits dangerous behaviour such as riding at night without lights and crossing intersections against traffic signals.

The most common injuries associated with cycling accidents are head-related. This problem has been targeted in recent years with the introduction in all States of legislation which requires the wearing of protective headgear when cycling. Participants' reactions to this legislation were mixed. For example, the Department of Transport and Communications (DOTAC) argued:

There is a clear relationship between the helmet requirements and a fall in deaths among cyclists ... In 1989, for example, 98 cyclists died in bicycle-related accidents, compared with 41 in 1992. As no State or Territory had introduced mandatory helmet wearing in 1989 and all jurisdictions had regulations in place in 1992, the correlation is obvious. Early indications are that there has been a corresponding reduction in the number of motor accident injuries incurred by cyclists. (DOTAC 1993, p. 11)

On the other hand, participants such as the Bicycle Institute of South Australia noted that since the introduction of compulsory wearing of helmets, there has been a downturn in cycling. According to a study prepared by AGB Spectrum for VicRoads:

Some organisations feel there is an over emphasis on safety when government money is spent. Whilst helmets are a vital accessory, 'why' people fall off bikes is not considered. For example; bad driver education, poor roads, not enough road maintenance can all contribute to accidents. Helmets themselves do not prevent accidents, they only provide protection if they occur. (Newton and Borghesi 1989, p. 6)

The British Medical Association report, *Cycling towards health and safety* (1992) conducted a cost-benefit analysis of cycling. This study found that the benefits derived from regular cycling exercise outweighed the costs in terms of lost life resulting from cycling accidents.

Risk of theft

The risk of bicycle theft was identified by several participants as a significant deterrent against higher levels of bicycle use. This risk is increased if the rider has to leave his or her bicycle unattended at a railway station, transport interchange, school or shopping centre.

Several participants argued that bicycle use in Australia could be encouraged through greater provision of bicycle facilities and security. The State Bicycle Committee of Victoria argued that the cost of providing a single car park at a railway station was approximately \$20 000 compared with approximately \$2 000 for a secure bicycle storage facility, including the nominal cost of land each facility occupies. Furthermore due to their relative size advantage, approximately 20 bicycles could be accommodated in the area required to park and provide access to one car.

Comfort and convenience

Relative to other modes of transport, cycling is impractical in a number of respects. One obvious example is exposure to the weather. Bicycles offer few comforts such as heating, air conditioning, or comfortable seats. They have limited carrying capacity and are impractical for many trips such as large shopping expeditions or picking up people. As noted by the Bicycle Transportation Alliance, however, 'In several respects, the practicality of cycling depends on having the right equipment such as pannier bags [side-mounted carry bags] or wet-weather gear' (Sub. 305, p. 2).

B6.3 Expanding the role of cycling

Submissions discussing the issue of non-motorised transport highlighted two principal areas where cycling could play a much greater role:

- greater integration between public transport use and cycling; and
- as preferred modes for trips under three kilometres, subject to conditions such as weather and carrying capacity needs.

Dual mode transportation

Several participants argued that the role of public transport and cycling could be enhanced if facilities encouraging modal integration were improved. Dr Laurence Knight commented:

... improving conditions for cyclists and pedestrians improves the viability (and extends the range) of public transport services. (People have to either walk or cycle at each end of a trip via public transport) (Sub. 211, p. 6).

Advocates of the dual mode strategy claim that greater bicycle use could be encouraged through better provision of facilities, such as a more convenient and safe road system, showering and storage facilities at the trip destination, and the provision of secure locking facilities for bicycles at public transport facilities, such as railway stations or bus interchanges.

Some participants also argued that the carriage of bicycles on public transport should be encouraged, particularly during off-peak times. ATAC (1992) recommended that priority be given:

... by local government and transit authorities to the provision of dual mode facilities for cyclists, through safe storage lockers, improved access to transit stations, and carriage of bicycles on trains at off-peak times and where feasible in peak times (ATAC Communique 1992).

The ACT Government described initiatives promoting dual mode transportation in its response to the draft report:

Dual mode commuting by bicycle and bus is being encouraged through the provision of secure bicycle lockers at all bus interchanges. Secure trip end parking is provided at employment nodes through extensive provision of bicycle racks and by encouraging employers to provide under cover parking and shower facilities. (Sub. 228, p. 9)

Modal substitution

Several participants pointed out the potential for cycling to replace many short car journeys of three kilometres or less. Such journeys are estimated to account for approximately one third of all trips (ATAC 1993, p. 3). This opportunity

would depend on things such as the nature of the trip (for example, such modes may be unsuitable for a large shopping trip), traffic conditions, topography and weather conditions. According to the Bicycle Federation of Australia:

Evidence that provision for bicycles can increase bicycle usage comes from Fremantle where implementation of the bike plan helped produce growth in cycling of 24 per cent over two years, with an estimated fifty per cent of this growth in new bicycle travel replacing car travel (Sub. 111, p. 5).

Other participants, including the Bicycle Institute of South Australia, noted a latent demand for greater levels of bicycle use in Australia:

... Bicycle Victoria surveyed employees at several large workplaces in central Melbourne. Although only 10 per cent of them ever rode bicycles go work, 33 per cent of these employees would 'seriously consider' commuting by bicycle if there were better bicycle routes and end-of-trip facilities — secure parking, showers and clothes lockers. (Sub. 88, Attachment 4, p. 2)

Government policies for cycling

The involvement of Commonwealth, State and Local Governments in cycling projects extends to funding, education, construction and maintenance, regulation and promotion. Interest in expanding the role of cycling in the transport task has been reflected in a number of bicycle strategies produced in recent years. In most States, strategies have been developed and endorsed by a variety of interests including state environment, planning and transport agencies, local councils, schools and bicycle user associations. The National Bicycle Strategy outlines a variety of options for increasing the role of cycling and was prepared by the Federal Government, in conjunction with the states.

In general, submissions to this inquiry supported the directions of the National Bicycle Strategy recommendations. Some participants endorsed a series of recommendations which build on the objectives of the Strategy (see box B6.1). Additional options were also canvassed. Several participants, including the Bicycle Institute of New South Wales and Bicycle Tasmania highlighted a '4 Es' approach to expanding the role of cycling.

Cycling may be *encouraged* through better provision of secure bicycle parking and showering and changing facilities. Provision for the carriage of bicycles on public transport, better signs along bicycle routes and the provision of information such as maps were also highlighted as measures which would encourage these activities. The Bicycle Institute of Victoria described several active ride to work programs in Melbourne workplaces during the hearings (DR transcript, p. 744-5).

Box B6.1: Participants views

Following discussions at the draft report hearings for the inquiry, Mr Parker of the Town and Country Planning Association submitted a set of recommendations designed to encourage bicycle use in Australia (Sub. 295, pp. 2-4). These recommendations were endorsed by several participants in the inquiry, including the Bicycle Federation of Australia (Sub. 309), Bicycle Tasmania (Sub. 334), the Bicycle Industries and Traders' Association and the Retail Cycle Traders of Australia (Sub. 244). The recommendations are as follows:

1. Establish a Federal Office of Bicycle Planning and Provision with a budget of say \$2 million a year to trial demonstration projects of national significance and conduct research of national significance and coordinate the implementation of the following recommendations all of which are either implicit or explicit in the National Bicycle Strategy.
2. Build into all planning regulations and building codes the existing voluntary requirements for bicycle parking set out in Austroads Manual and the Australian standard for bicycle parking and make them mandatory in all states.
3. Build bicycle parking and bicycle facilities into the road pricing and car parking decongestion programs.
4. That one percent of total road funding be tied to be spent on on-road facilities on existing roads or off-road facilities to contribute towards creating continuous urban bikeway networks.
5. That funding for demonstration projects of national significance be provided. In particular for ride to work projects and bike/rail projects with supporting behavioural science based research studies of the potential to substitute bike and bike/rail trips for car trips.
6. Whenever the option exists to lower speed limits it should be done to make cycling safer. On residential streets there should be a universal speed limit of 40 Kph. When a busy strip shopping street is a designated bicycle route the 40 kph limit should also be applied as the technology now exists for electronically changing the limit signs at different times of the day.

Many of these ideas represent an elaboration of the National Bicycle Strategy. Comments on some of the others (for example, number 4) are expressed in this chapter.

Several submissions to the inquiry highlighted cycling encouragement programs and high levels of bicycle ridership in other countries, particularly the Netherlands, Denmark, Germany, Japan and China.

Better *education* of all road users would improve their understanding of safety, road rules and desirable behaviour. This could include safe cycling media campaigns, cyclist and motorists' training to increase their awareness of each others road needs, and school based programs promoting bicycle skills and

desirable behaviour. Education of planners, engineers and urban transport professionals to the needs of cyclists was also mentioned.

The *enforcement* of safer riding could be strengthened. This could include incorporating cycling rules in L permit tests for drivers, registration of bicycles and greater police enforcement of existing rules applying to both cyclists and motorists.

Engineering improvements suggested include the sealing of shoulders along arterial roads, partitioning of bicycle lanes, segregation of bicycle paths and general road maintenance such as resurfacing. Traffic calming measures such as narrower streets, traffic impediments and controlled intersections to slow down and reduce the volume of motor traffic along streets were also targeted.

Levels of funding and investment

A number of submissions recommended an allocation of government funding to bicycle related expenditure of not less than one per cent of total road funding. The Sydney Bikeplan estimated that:

The principal monetary benefits [of expenditure on bicycle transport] derive from modal transfer, accident reductions, reductions in bicycle thefts and improved health ... The non-monetary benefits are those that are increasingly being demanded by society, such as improved environment, clean air and reduced background noise. These benefits have not been costed but are still very real and should be taken into account in the value for money assessment For every dollar spent, the return to the community is more than \$5; the benefit cost ratio is in excess of 5:1. (As quoted in Bicycle Institute of New South Wales, Sub. 93, p. 9)

There are trade-offs associated with transport infrastructure decisions. The level and type of investment is constrained by budget limitations as well as other environmental, social and political considerations. It is unclear whether current levels of bicycle related expenditure reflect an over- or under-estimation of the benefits and costs of these modes.

A study conducted by the Cyclists' Touring Club, *Costing the Benefits: The value of cycling* (1993), outlined a cost-benefit approach to evaluating bicycle funding. It considered the costs of car-based transport on society and the environment, including direct costs such as construction and maintenance, as well as indirect costs such as congestion, noise and air pollution and energy costs. These were evaluated against the costs and benefits of cycling. The study found that existing policies which fail to consider the full social and economic costs and benefits of different transport options, are biased in favour of the status quo (CTC 1993, p. 5).

Determining the appropriate level of funding and investment for bicycle facilities may be difficult in the absence of price signals. This is because of the public good aspect of many cyclist facilities, such as bicycle paths, lane markings, signs along routes and roads. These measurement difficulties do not, however, imply that an allocation of a particular proportion of the national road budget should automatically be provided for cycling purposes. Rather, an attempt should be made to identify and quantify the full benefits and costs of proposals, in order to facilitate efficient investment decisions. Such analyses should include full social costs and benefits attributable to cycling. This process could lead to a better use of existing funding, or justify an increase in the level of expenditure for such facilities.

B6.4 Conclusion

The Commission recognises that cycling is a valuable mode of personal transport. There appear to be significant environmental, health and cost advantages, and potential enhanced modal integration opportunities for cycling. The directions contained in the National Bicycle Strategy and the ATAC recommendation that future proposals relating to this mode be assessed against specific criteria including cost-effectiveness, feasibility and safety, with consideration of social, environmental and economic factors seem to represent moves in the right direction.

The Commission recommends the application of cost benefit analysis to all transport investment decision making, incorporating the full range of alternatives. This will ensure that decisions attempt to maximise anticipated community benefits such as improved accessibility, mobility and safety for cyclists in the most cost-effective and environmentally friendly way.

The Commission also recommends that the potential role of cycling be given full consideration in transport and urban planning. This should involve inclusion of cyclists' needs in such developments as roads, transport interchanges, residential developments, educational institutions, city shopping precincts, and suburban retail centres.

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