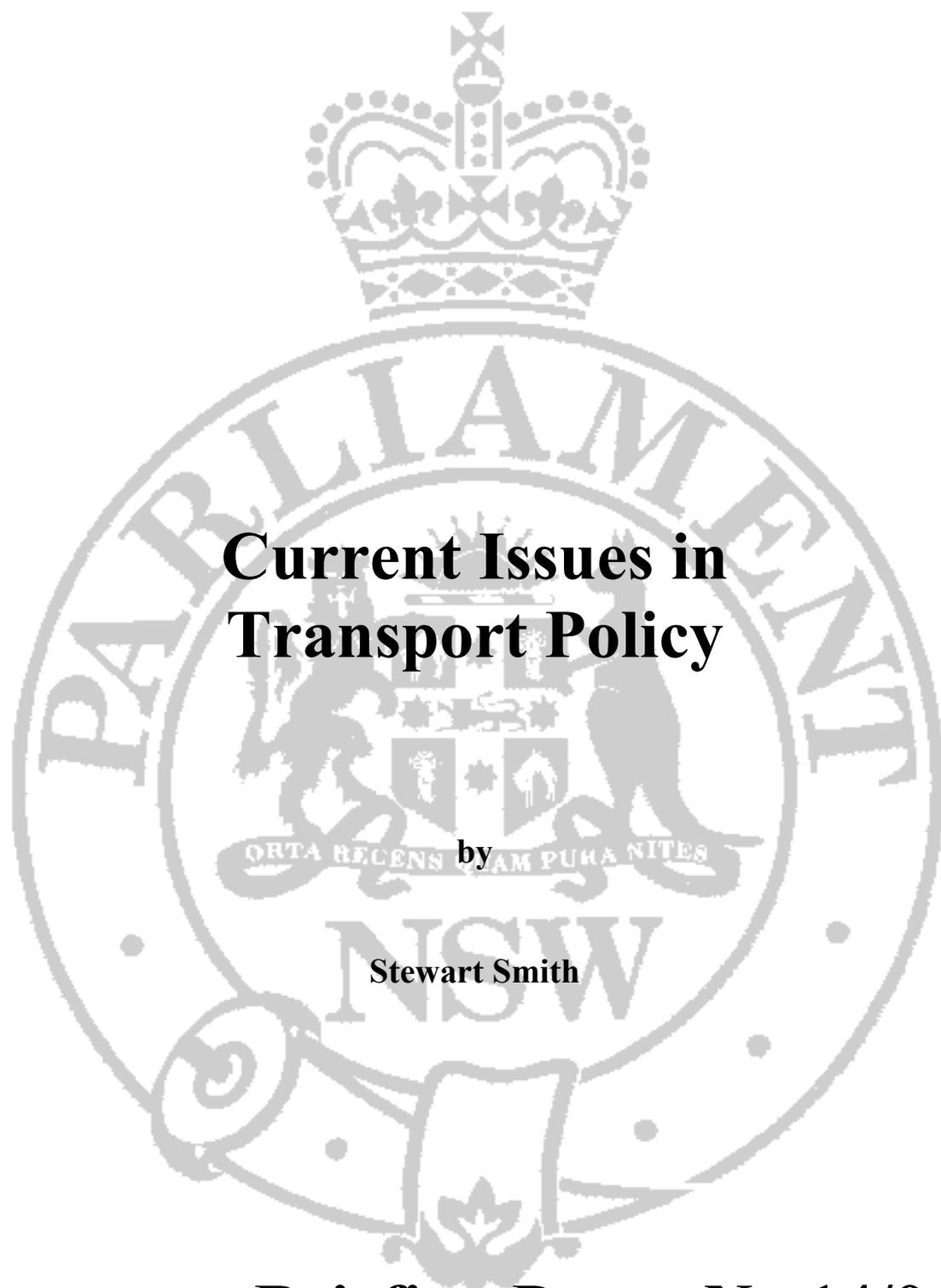# NSW PARLIAMENTARY LIBRARY
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Current Issues in Transport Policy

by

Stewart Smith

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EXECUTIVE SUMMARY

Recent developments in transport policy in NSW include:

- The Commonwealth AusLink White Paper;
- The NSW Ministerial inquiry into sustainable transport in NSW;
- The NSW Ministerial review of bus services in NSW; and
- The development of the Long Term Strategic Plan for Rail.

This paper reviews each of these, and places them into the perspective of the development of the Sydney Metropolitan Strategy. Transport is a complex issue world wide, and in the United Kingdom various strategies have been implemented to increase the sustainability of their transport networks. The paper reviews these, and notes the success of a congestion charge in London, which, together with an upgraded public transit system, has resulted in a 32 per cent reduction in congestion in central London.

The release of the Commonwealth AusLink White Paper in June 2004 identified a national network of important road and rail infrastructure links. The AusLink strategy proposes that the Commonwealth will initiate long-term investment strategies for each transport corridor in the national network. Corridor strategies will be developed by the Commonwealth and relevant State governments responsible for the transport links in each corridor. This approach will be tailored to meet the specific characteristics and needs of each transport corridor in the most effective and sustainable way, irrespective of mode. Significant new funding for railways was proposed.

In Sydney, vehicle kilometres travelled per capita has increased substantially in the period 1991 – 2002. In 2002, 70 per cent of trips were made in the car, either as driver or passenger. For public transport, the share of trips made by train has remained relatively constant since 1991, whilst bus and walking have significantly declined.

Transport or Travel Demand Management refers to various strategies that change travel behavior (how, when and where people travel) in order to increase transport system efficiency and achieve specific objectives. In the past, transportation problems were usually evaluated in terms of supply – for instance building more road and parking capacity. Increasingly, management solutions are being used that result in the more efficient use of existing capacity, and one of these solutions - the demand management program TravelSmart is reviewed.

Current CityRail reliability is poor, and a review of the reasons behind this is presented. Solutions proposed by the Government include: training more drivers; implementation of the ClearWays project; and introducing a new timetable in September 2005. However, it is noted that a new route through the central business district from Redfern to St Leonards is required in the medium term. Currently Sydney is faced with: escalating car use; significant traffic congestion; and a train service not operating at a satisfactory level. The State Government has committed a significant amount of money to help address these factors. More recently, the work developing the Sydney Metropolitan Strategy has focused on rejuvenating town centres along strategic corridors of Sydney. The intent is that people will need to travel less to employment and social / recreational opportunities.

1.0   INTRODUCTION

Highlighting the importance and complexity of transport issues facing Sydney and New South Wales, this is the sixth Briefing Paper on transport published by the NSW Parliamentary Library Research Service since 1992. Since the publication of the last transport Briefing Paper in 1999, there have been numerous developments, including:

- The Commonwealth AusLink White Paper, which describes the Australian Government's approach to the planning, funding and investment decision making of national land transport;
- The NSW Ministerial inquiry into sustainable transport in NSW;
- The NSW Ministerial review of bus services in NSW;
- The development of the Long Term Strategic Plan for Rail.

This paper reviews each of the above, and places them into the perspective of the development of the Sydney Metropolitan Strategy. However, acknowledging that transport is a complex issue world-wide, this paper begins with an international focus, and in particular the United Kingdom. The recurring themes of road pricing and 'soft' transport options (ie, non-infrastructure building) are apparent in the United Kingdom, and as will be demonstrated in this paper, increasingly in Australia

2.0   INTERNATIONAL

It can be constructive to see what other countries around the world are doing in terms of transport policy generally, as well as comparing their metropolitan transit schemes to that operating in Sydney. For instance, the United Kingdom Government released *The Future of Transport White Paper* in July 2004. The White Paper identifies several features similar to those in Australia and NSW: an historic under-investment in transport infrastructure; relying on a rail network established over a hundred years ago; increasing economic growth leading to greater travel; and road congestion. The solutions proposed in the White Paper are far reaching, especially in relation to road pricing. The White Paper observes that London is the only major city in the world to have achieved a shift away from car use. Over the last four years public transport usage has increased in London by more than 16 per cent, whereas car travel has decreased by 4 per cent. How this has been achieved and the future of transport in the United Kingdom is discussed below.

2.1   United Kingdom
The Future of Transport. A Network for 2030. White Paper[1]

The UK White Paper strategy is built around three central themes.

- **Sustained investment** over the long term;
- **Improvements in transport management: -** re-organising the rail industry to improve performance, drive down costs and get better value from public spending. Better traffic management will ease congestion on our road network;

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[1]   United Kingdom Department for Transport, *The Future of Transport, a network for 2030*. July 2004.

- **Planning ahead**: the long term trends in travel are evident to all. We cannot build our way out of the problems we face on our road networks. And doing nothing is not an option. So Government will lead the debate on road pricing. We will work with stakeholders to establish how and when pricing might provide the reliability and standards road users want. And we will work to ensure that the choices we face, together with their full costs and benefits, are well understood.

The strategy charts a course over the next 30 years, founded on the following:

- **Road networks:** enhanced by new capacity where it is needed, assuming that any environmental and social costs are justified; locking in the benefits of new capacity through various measures including some tolling and carpool lanes where appropriate; the Government leading the debate on road pricing and its capacity to lead to better choices for motorists; better management, exploiting the potential of new technology to avoid problems and deal with them rapidly if they occur; and using new technology to keep people informed both before and during their journey.
- **Railways:** where Government sets the strategy, working with the industry to get the costs under control and with the Office of Rail Regulation ensuring that it pays the proper price for what it is buying; the structure of the industry is improved, with clear lines of responsibility that focus the industry on delivering for its customers; there is a single point of accountability for performance to improve standards across the industry; and local and regional stakeholders are involved in decisions on the balance between rail and other forms of transport.
- **Local travel:** enhanced through freer flowing local roads delivered though measures such as congestion charging; more, and more reliable buses enjoying more road space; demand responsive bus services that provide accessibility in areas that cannot support conventional services; looking at ways to make services more accessible so that people have a real choice about when and how they travel; promoting the use of school travel plans, workplace travel plans and personalised journey planning to encourage people to consider alternatives to using their cars; and creating a culture and improved quality of local environment so that cycling and walking are seen as an attractive alternative to car travel for short journeys, particularly for children.

Smarter Choices

'Soft' transport policy seeks to provide information and opportunities aimed at helping people choose to reduce their car use while enhancing the attractiveness of alternatives. Options investigated and trialed include those listed in Table 1.

Table 1: 'Soft' Transport Options

Public transport information and marketing	Raising the profile of buses and other public transport in local communities. Budgets for such works of 60,000 to 300,000 pounds a year have helped deliver city wide increases in bus use of between 1.5 and 5 percent, when combined with other improvements.
Individualised marketing	Applies private sector marketing techniques to encourage people to use alternatives to cars. Pilots delivered reductions in car use of between 7 and 15 per cent in urban areas and 2 to 6 per cent in rural and smaller urban areas. Costs for large-scale implementation likely to be less than £20 per head.
School travel plans	A series of practical steps to improve the safety of children and therefore make walking, cycling or public transport a more attractive option. Reduced school run traffic by between 8 to 15 per cent, with some high-performing schools achieving reductions over 20 per cent.
Workplace travel plans	Produced by employers and aimed at reducing car use for travel to work and travel for business. Workplace travel plans can reduce commuter car driving by between 10 per cent and 30 per cent at a cost to the local authority of £2 to £4 per head.

Compared to the cost of investing in new infrastructure, such schemes also offer significant value for money for the taxpayer. As a result, the White Paper announced that the Government will continue to promote this approach by:

- Ensuring that every school in England has a travel plan by 2010;
- Providing free consultancy advice for organisations creating workplace travel plans until at least 2006. The focus for this advice will be on workplace, tourism and leisure sites where research indicates it is most effective;
- Making sure that the public sector leads by example. All Government departments have been set a target of reducing car commuting to their workplaces by 5 per cent by 2006; and supporting local authorities in building schemes like these into their Local Transport Plans.

Road Pricing

The key strategic choice for road users is between: service levels which continually deteriorate (since we cannot build our way out of congestion); or new ways of paying for road use, which incentivise smarter individual choices about when and how we travel. Research has shown that there are acceptable alternatives for some people, and just a relatively few people changing behaviour in response to pricing makes a substantial difference to congestion.

The Government view is that the costs of inaction or unrestricted road-building are too high for society. The time has come to consider seriously the role that could be played by some form of road pricing policy. But adding new capacity will not address the long term risk of

higher congestion, even if it is tolled. And it will not resolve the problems on our current road network. There is a need to consider seriously the case for a different way of paying for our current road network.

On this basis, a Government commissioned study looked at the practicalities involved in implementing a scheme in which central government designed and operated a national distance charge, based on systems fitted in all cars, with a consequential reduction in other current motoring taxes. Such a system would have a facility for local variation in the distance charge – up and down – to reflect congested and uncongested conditions and other external costs.

Having defined a national scheme in this way, the report assessed its feasibility. The report concluded that such a national pricing scheme is becoming technically feasible, and certainly will be in the medium term (10 to 15 years). This is based on the development of in-vehicle satellite navigation equipment and the development of standards at the EU level. Whilst the system would cost a lot to run, the net revenue stream could be used in a number of ways. For example: to reduce existing motoring taxes; to reduce other taxes; to fund additional spending on road capacity, public transport and other public spending; or for a combination of these. The study noted that trust and confidence in the viability and delivery of any national road pricing scheme, including the use made of the revenue, is paramount.

Currently the City of London has a £5 per day congestion charge. Vehicles entering a defined central London zone between the hours of 7.00am and 6.30pm Monday to Friday must pay the charge. Residents within the zone receive a 90 per cent discount, and a range of vehicles such as those used by the emergency services and hospitals are exempt. There are a variety of ways to pay the charge, including SMS and shops / service stations within the zone. Payment must be made by 10:00pm on the day of entering the zone, or by midnight with an extra £5 surcharge. To enforce the charge, a network of cameras has been established on the boundary and throughout the defined zone. These cameras use automatic number plate recognition technology to match against a database of those who have registered to pay. Those who have not paid are sent an £80 penalty notice, reduced to £40 if paid within 14 days. Results to date include:

- Congestion inside the charging zone reduced by 30%;
- Traffic levels reduced by 18%;
- 30% reduction in number of cars and 65,000 fewer car movements;
- 20% increase in movements by buses, coaches and taxis;
- Increase of 29,000 bus passengers entering zone during morning peak;
- Bus reliability and journey times improved - additional time passengers wait at bus stops caused by service delays or missing buses improved by 20% across all of London and by 30% in and around charging zone;
- Bus routes serving charging zone experience 60% less disruption due to traffic delay.[2]

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[2]   United Kingdom Commission for Integrated Transport, *Congestion Charging, The Central London Congestion Charging Scheme*.   See   internet   site: http://www.cfit.gov.uk/congestioncharging/factsheets/london/index.htm,   Accessed November 2004.

Rail

The privatisation of the rail industry in the early 1990s assumed that private sector innovation and discipline would drive down the railway's subsidy requirement and drive up the quality of service. In part this has been borne out – demand for both passenger and freight services has risen since privatisation. But it proved entirely incorrect in relation to the operation of the infrastructure. Railtrack's engineering work was outsourced to maintenance companies that were given responsibility not only for maintenance and renewals, but also for the specification and inspection of their own work. This led to Railtrack's knowledge of the state of its assets diminishing and to a maintenance strategy that saw the condition of the track deteriorate rapidly. A fatal accident at Hatfield in October 2000 exposed the extent of this deterioration. And the widespread speed restrictions that followed caused a steep decline in reliability. The reaction to Hatfield also undermined public perceptions of safety on the network. In response, Railtrack increased the level of maintenance and renewal work, but this generated a steep increase in costs. This, combined with other factors, contributed to a worsening financial situation which led, eventually, to the company's entry into administration.

The complex and over-bureaucratic structure introduced at the time of privatisation, with too many overlapping responsibilities, no clear control of strategy and no single point of accountability for performance, must be reformed. This structure has allowed money to be wasted, and new initiatives to fail. A new structure must be put in place which ends the confusion of responsibilities and enables the industry to work together to deliver clearly defined goals.

Transport for London (TfL) has also introduced the Oyster Card smart ticketing system across London. This allows people to travel on the Underground, buses and the Docklands Light Railway as well as some parts of the rail network. Nearly 1.4 million cards have been issued since its launch in 2003.

Buses

Nearly two thirds of all public transport journeys in England are by bus. In many areas, and for many journeys, they are the only public transport alternative to using a car. Buses are a powerful tool in tackling the problems caused by congestion, allowing more people to make the same journey while generating less traffic. Buses are flexible too – they can be deployed quickly in response to changing demand. And unlike rail or metro systems, buses do not require substantial infrastructure so they can rapidly boost the supply of public transport. In London, the public sector has control over the level of bus services provided. Transport for London, reporting to the Mayor, purchases services from commercial operators, having specified the fares and service levels it wishes to provide. TfL takes the revenue risk, plans the routes, and specifies and monitors service quality. It is also responsible for ticketing and information. Every year 20 per cent of the whole bus network is re-tendered, with around half of the network subject to some level of review each year. The Mayor has chosen to subsidise bus fares and to provide higher frequencies and 24 hour services, delivering a 30 per cent increase in patronage since 2000.

However, enhanced services and real-term fare reductions have come at a cost. The net operating costs of London's buses have risen from £88 million in 2000-01 to £562 million in 2003-04, and the public subsidy per bus journey in London is higher than elsewhere.

The Mayor has extensive responsibility for transport in London, including both strategic policy and day to day management. Under the *Greater London Authority Act 1999*, the Mayor is required to develop and implement a transport strategy for London, in consultation with the Greater London Assembly and the 33 London boroughs. Through Transport for London the Mayor has direct responsibility for London Underground, buses, taxis, the strategic road network, light rail and river services. Boroughs remain responsible for local roads. Rail services are currently outside the Mayor's direct control but the Government wants to see greater responsibility for commuter rail delegated to the Mayor. Transport for London came together from 15 separate predecessor organisations and has allowed the creation of an integrated transport strategy for London. Transport for London has an annual budget of nearly £5 billion derived from fare revenue, central government grants, congestion charge income and council taxes. The Government's grant to Transport for London doubled between 2000–01 and 2004–05 to over £2 billion a year. Improvements delivered as a result of the extra resources and better planning include:

- a 31 per cent increase in bus patronage since 1999 – the highest number since the 1960s;
- bus mileage higher than at any time since 1959 and over 2,600 new buses in service;
- a world leading congestion charge scheme (as discussed above);
- smart ticketing (Oyster Card) which allows travellers a choice of payment options for journeys by public transport; and
- the London Traffic Control Centre – which is manned by the police and Transport for London personnel, monitoring traffic and co-ordinating responses to congestion.

The Upgrade of the London Underground

In March 1998 the Government announced proposals for a Public Private Partnership to modernise the London Underground. The PPP proposals were divided into three contracts for a period of thirty years, with the public sector having the ability to reset its requirements every seven and a half years. Over the first 15 years of the contract, £13 billion of investment and maintenance is expected.

Upon commencement, private companies became responsible for financing, maintaining and modernising the trains, track, signals and stations, while the operation of the Underground remains with a single public sector body. Under the contracts:

- New or refurbished trains will be running on all lines by 2020;
- 80 per cent of the track will have been replaced;
- 249 stations will be improved and modernised;
- Delays on lines should be reduced, with estimated improvements on the Metropolitan, Circle and Bakerloo Lines of 30 per cent;
- Capacity of the system will be increased by 12 per cent by 2012.

A 'value for money' evaluation concluded that over the first 15 years of the PPP contracts,

London Underground would save £2 billion compared to the cost of carrying out the same work under traditional public funding arrangements.[3]

The United Kingdom's Strategic Rail Authority
The Strategic Rail Authority publishes a public performance measure (PPM) to provide an indication of performance of the railways. The PPM combines figures for punctuality and reliability into a single performance measure. It measures the performance of individual trains against their planned timetable, and the PPM is therefore the percentage of trains 'on time' compared to the number of trains planned. A train is defined as 'on time' if it arrives within five minutes of the planned destination for London and South East regional operators, or 10 minutes on long distance operations. A train's performance is generally recorded by the automated monitoring systems, which log performance using the signalling equipment.

For London and South East operators, during the peak hours only, in 2003-2004, 77.9 percent of trains arrived on time. In contrast, during 1997-98, 86.9 percent of trains arrived on time.[4] Across the London Underground network, in the month of 25 July to 21 August 2004, there were 274 delays, defined as an incident that causes a delay of 15 minutes or more. This compares to 265 to the corresponding period in the year before, and 219 in the immediate previous period.[5]

3.0   TRANSPORT IN AUSTRALIA - THE NATIONAL PICTURE
3.1   The National Transport Task

Freight
The domestic freight transport task covers a wide range of different types of freight operations ranging from long distance movements of bulk commodities to short distance deliveries of non-bulk goods. Road transport is the dominant mode for moving freight over relatively short distances and where alternatives are not readily available. Most non-bulk goods carried by other modes also use road transport for part of their journey. Approximately 80 per cent of road freight is transported over distances of less than 100 kilometres. Road transport, together with air, has captures a major part of the market for priority delivery of long distance non-bulk freight from rail and coastal shipping. However, rail is well placed to compete in the long distance non-bulk freight market and already does so on the east – west corridor – from Sydney to Perth – with an 80 per cent share of that land transport market on a two mode basis. Air freight is typically characterised by low volume / high value products, such as express parcels, medical supplies and seafood.

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[3]   United Kingdom Department for Transport, *London Underground Modernisation Fact Sheet, Value for Money Evaluation*, May 2002. See http://www.dft.gov.uk, accessed October 2004.

[4]   Strategic Rail Authority, *National Rail Trends, Yearbook 2003-2004*. June 2004, at 15.

[5]   Transport for London, *London Underground Performance Update*, http://tube.tfl.gov.uk/content/stats/default.asp, Accessed October 2004.

The total freight task is forecast to double in the next 20 years. Different growth rates of bulk and non-bulk freight have significant implications for transport infrastructure planning. Domestic non-urban bulk freight is expected to grow at 2.2 per cent per annum between 2000 and 2020. Much of this freight is carried on private or purpose built intrastate rail lines. Despite this, road's share of the bulk market is expected to grow with road traffic doubling to approximately 84 billion tonne-kilometres by 2020.

Domestic non-bulk freight is expected to grow at 3.4 per cent per annum between 2000 and 2020 to 255 billion tonne-kilometres. It can be expected to double between 2000 and 2022, whilst total (ie, domestic and international) non-bulk freight is expected to more than double in the same period. Non-bulk freight (in tonne-kilometres) is expected to increase at a significantly higher rate than overall traffic. Non-bulk freight trends are characterised by a continuing increase in the dominance of road, both in total and interstate traffic. This reflects road transport's advantage in catering for door to door movements and just in time delivery arrangements.

Urban freight movements have more than doubled over the last 20 years, and growth of 2.9 per cent per annum is expected through to 2020. It is estimated that, based on existing trends, urban road freight tonnages will increase by over 70 per cent between 2000 and 2020. Growth in container traffic through the major capital city ports is a specific example of pressures on infrastructure capacity. The total number of containers handled through Australia's ports is expected to increase 66 per cent by 2013 – from 2.9 million containers in 2002-03 to 4.8 million in 2012-13, with most of this growth in the Sydney and Melbourne regions.[6]

Passenger Transport
Cars are the dominant transport mode for domestic passenger travel, and account for over 80 per cent of the total kilometres travelled. Private vehicles are the strongly preferred mode of travel for domestic trips up to 400 kilometres. Air travel becomes significant for journeys of more than 400 kilometres and is the dominant mode for those exceeding 1200 kilometres.

In terms of the future passenger task, there are significant challenges in responding to emerging demographic trends and changes in population distribution. These changes are occurring in urban, rural and regional areas. In urban areas, the car is expected to retain its dominance over the next 20 years, with urban passenger kilometres forecast to increase by 1.3 per cent per annum over this period – approximately half the growth of the last 20 years. However, this modest growth has significant infrastructure costs. For instance, the 39 kilometre Westlink (M7) – formerly the Western Sydney Orbital – is estimated to cost $1.6 billion over six years.

Handling growth in airport activity is also a critical infrastructure concern in capital cities, with most of these cities having forecast passenger numbers in 2020 at least double that of 2000 levels. Growth in airport passenger numbers is also to be expected to be accompanied

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[6]   Australian Government, *AusLink White Paper*, Department of Transport and Regional
         Services, June 2004, at 6.

by broadly comparable increases in non-traveller visitors to airports, and the level of airport based commercial activity and support services is expected to increase. The combined effect of this growth will be to place significant additional pressures on land transport access to increasingly congested airport precincts. However, despite continuing growth in air travel, the private motor vehicle will continue to be of critical importance for access to and connectivity between rural and regional areas.[7]

3.2   AusLink

In June 2004 the Hon John Anderson MP, Deputy Prime Minister and Minister for Transport and Regional Services released the AusLink White Paper. AusLink describes the Australian Government's approach to the planning, funding and investment decision making of national land transport.

Historically, the Commonwealth Government has contributed to the funding of: the National Highway System; Roads of National Importance; and the interstate rail network. Roads and rail have been separately planned and funded, with ad hoc road / rail intermodal developments. The new AusLink approach provides for an integrated approach to corridor planning, focussing on meeting future passenger and freight needs in the best way, irrespective of transport mode. The strategy has the following core components:

- a defined National Network of important road and rail infrastructure links and their intermodal connections;
- the National Land Transport Plan which outlines the Government's approach to improving and integrating the National Network, and the investments it will make;
- a single funding regime, under a new AusLink program, for the National Network;
- separate earmarked funding for local and regional transport improvements;
- new legislative, intergovernmental and institutional mechanisms.

The National Network is based on: national and interregional transport corridors – including connections through urban areas; links to ports and airports; and other rail / road intermodal connections that together are of critical importance to national and regional economic growth, development and connectivity. The network provides the passenger and freight backbone of Australia's land transport system. However, this does not mean that a proposed project will be funded by the Commonwealth Government because it is located on the National Network. It states that only projects of high national priority will be considered.

The AusLink strategy proposes that the Government will initiate long-term investment strategies for each corridor in the National Network. Corridor strategies will be developed by the Commonwealth and relevant State governments responsible for the transport links in each corridor. This approach will be tailored to meet the specific characteristics and needs of each transport corridor in the most effective and sustainable way, irrespective of mode. A comparison of corridors, links and projects will then enable the Commonwealth to select the highest yielding projects for funding based on the maximum national benefit.

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[7]   Australian Government, *AusLink White Paper*, Department of Transport and Regional Services, June 2004, at 8.

The AusLink strategy promotes the concept of shared responsibility, in that funding of the Network should be shared as many investments will contribute to the interests of stakeholders other than the Commonwealth government. Commonwealth government funding for a project will require that the Commonwealth remain in control of the development and operation of intersections with the National Network. In addition, funding will be conditional on arrangements which prevent high volumes of local traffic being channelled onto the Network. These conditions will be required to be embodied in bilateral agreements with the States. The Commonwealth has a clear expectation that the States will invest in those projects on the National Network which provide benefits at the State level. The strategy notes that in many cases, this means that project costs will be shared with State and Territory governments. The strategy also noted that it expects State government proposals seeking AusLink funding to examine potential private sector involvement in the ownership, financing and operation of the project and any other commercial opportunities associated with the project. Examples of these opportunities included revenue earning commercial development within the scope of major transport projects, such as parking facilities, and retail, industrial and residential opportunities, packaged with the project. The strategy noted that these private roads release government funding for other worthwhile public infrastructure.

AusLink commenced on 1 July 2004, with implementation to include:

- new legislative arrangements;
- bilateral agreements governing project development and funding; and
- development of institutional and intergovernmental arrangements to provide a more structured approach to long-term strategic planning of the National Network.

The AusLink National Land Transport Plan
The Land Transport Plan provides the strategic directions and funding priorities of the Commonwealth Government. The Government has allocated a total of $11.8 billion for road and rail transport, including $9.2 billion to AusLink, over the five years of the plan. The Government has identified eight strategies under the Plan:

- Negotiate long-term strategies with States and Territories to develop the National Network on a corridor basis;
- Improve the capacity and performance of the eastern seaboard north-south interstate corridors by upgrading critical road and rail links, increasing rail's competitiveness, and improving intermodal integration;
- Enhance the capacity and reliability of other critical interstate and interregional corridors, including in remote areas, to ensure national connectivity;
- Work with the States to address congestion on urban and outer metropolitan sections of the National Network;
- Improve infrastructure performance by facilitating the development and application of appropriate and cost-effective new technologies;
- Improve safety and security on the National Network;
- Work with the States to protect the community's substantial past investment in national road and rail network improvements;

- Improve local government's capacity to address local transport infrastructure backlogs and to fund projects of strategic regional importance.

The Commonwealth national investment priorities for 2004/05 to 2008/09 for NSW are as follows:

Sydney – Brisbane Corridor

Key links in this corridor include the: Sydney to Newcastle Freeway – F3, Pacific Highway; New England and Cunningham Highways; Sydney to Newcastle railway; and the North Coast Rail Line. Commonwealth government priorities for this corridor include:

The F3
- Invest $253 million toward a new alignment between the F3 and the New England Highway at Branxton;
- $50 million for additional widening of the F3;
- further funding for the F3 to Branxton project will be sought in future budgets subject to a cost sharing agreement with the NSW government.

The Pacific Highway
- The Commonwealth in partnership with the NSW government to commence new duplication and upgrading projects by investing an additional $480 million in the five year period. The NSW government is expected to as least match this level of funding.

The New England Highway
- $97 million to complete various projects, including: widening at several locations; interchange improvements at Weakleys Drive; road safety improvements north of Armidale; and realignments at Devils Pinch and Halcombe Hill.
- $5 million will also be invested to commence a bypass of Muswellbrook.

The North Coast Rail Link
- The Australian Rail Track Corporation will invest $119 million to increase passing opportunities and improve signalling systems on the rail track between Newcastle and Brisbane;
- The ARTC will also use the $450 million provided by the Australian Government in the Sydney – Brisbane railway to reduce transit times and improve average train speed. Projects include:
  - Improve access problems faced by freight trains between Newcastle and Sydney by providing facilities such as refuges and overpasses for freight trains at seven locations on the CityRail network;
  - Ease congestion of freight services and coal train movements by duplicating 63 kilometres of track between Wallarobba and Stratford on the northern approach into Maitland;
  - Improve transit times and train speeds by building deviations at 14 locations, totalling 121 kilometres, to ease curves on the North Coast railway between Newcastle and Brisbane;
  - Improve transit times for all trains in the Newcastle to Brisbane section by

more than 60 minutes by installing a Centralised Train Control system between the Queensland border and Acacia Ridge;

o Improve operational efficiencies and reliability by replacing worn out sleepers with concrete sleepers over 196 kilometres between Newcastle and Brisbane.

Sydney to Melbourne Corridor
This corridor is the busiest intercapital corridor in Australia for both freight and passengers. The key links are the Hume Highway and the interstate mainline rail link via Albury and Cootamundra. Most freight in this corridor is moved by road which provides overnight delivery between capital cities and to and from regional centres.

The Hume Highway
Projects for NSW include $341 million for an upgraded route through Albury and a second Murray River crossing. A variety of other projects include:

- $6 million for an interchange at north Gundagai;
- $3 million for a truck facility at Tarcutta;
- $5.5 million for Towrang and Carrick intersection upgrades;
- $7 million for additional ramps at Campbelltown.

In addition, $205 million will be invested for further duplication and other safety works, including on the F5 – the South Western Freeway approaching Sydney. Priority projects will be determined in consultation with the NSW Government, and a condition of any Commonwealth funding will be that the NSW Government commits to upgrading the adjacent arterial network.

These initiatives take the total investment in the Hume Highway over five years to $714 million.

Sydney – Melbourne Railway
The Australian Rail Track Corporation has undertaken to invest almost $432 million on the mainline rail track between Sydney and Melbourne over the next five years. This includes constructing a dedicated freight line from Macarthur to Chullora in Sydney and replacing the bridge over the Murrumbidgee River in Wagga Wagga. The Government has also committed $20 million to a rail bypass of Wodonga.

Melbourne – Brisbane Inland Corridor
Road and rail follow different routes on this corridor. The road link comprises the Hume, Goulburn Valley, Newell, Gore and Warrego Highways. It is direct and on flat terrain to the west of the Great Dividing Range. There is no direct rail link between Melbourne and Brisbane – rail freight travels via Sydney. Investment priorities include:

Newell Highway
$106 million over five years on a variety of upgrading works, including $28 million for a heavy vehicle bypass of Moree. The Government will also provide $1 million to commence work on a Coonabarrabran bypass and $1 million to commence the Trewilga realignment.

Melbourne – Brisbane Rail
Rail freight will benefit from the investment on the Melbourne – Sydney and Sydney – Brisbane track. In addition, the Australian Rail Track Corporation proposes to invest $57 million on the track between Cootamundra and Werris Creek.

Sydney – Adelaide Corridor
The key links are the Hume and Sturt Highways to Adelaide, and the interstate railway between Sydney and Adelaide via Cootamundra, Parkes and Broken Hill. Investment priorities include:

Sturt Highway
The Government will provide the balance of $29 million to upgrade the Sturt Highway in the Riverland, realign the section around Truro Hills and widen sections in NSW. In addition, another $44 million will be allocated over five years for further upgrading.

Sydney – Adelaide Rail
The Australian Rail Track Corporation proposes to invest $21 million on the track between Parkes and Broken Hill.

Inter-Regional Corridor Investments
Only nationally important inter-regional links are included in the AusLink National Network. The Strategy states that whilst the Princes Highway in NSW requires urgent action it is not included in the AusLink corridors – this is because it is of significant state and regional importance, and hence the responsibility of state government. The exception to this is parts of the Princes Highway, such as between Sydney and Wollongong, which is included in the National Network. Inter-regional corridor investments in NSW include:
- Sydney - Dubbo Corridor;
- Canberra connectors;
- Sydney – Wollongong Link.

Capital City Urban Corridor Investments
The road links in the Sydney urban corridors are the:

- Cumberland Highway, to be replaced by the Westlink (M7) when construction is completed, and Pennant Hills Road connecting with the: F3; Hume Highway; and Greater Western Highway (M4);
- South Western Motorway (M5) connecting to: General Holmes Drive to Sydney Airport; Foreshore Road to Port Botany; and Roberts and King Georges Roads linking to Chullora intermodal terminal and to the Princes Highway / Southern Freeway.

The rail links are the:
- Interstate railway from Hornsby to Campbelltown via Chullora intermodal terminal;
- Railway from Chullora to St Mary's; and
- Railway from Chullora to Port Botany.

The Commonwealth Government's priorities on these corridors focus on the need to improve freight flows and reduce congestion for passengers and freight. Priorities for the first five years are to complete the construction of Westlink, and to improve access to Port Botany and other intermodal facilities. The Government has already committed $356 million towards construction of the Westlink, and will provide the balance of $93 million over the next five years. The Government will also fund commencement of a new link from the F3 to the Westlink with a contribution of $22 million. The NSW Government is expected to contribute to this project and pursue private sector involvement. The Commonwealth will also invest $110 million to improve rail access between Port Botany, intermodal facilities at Chullora/Enfield and interstate connections.

Maintenance
Currently the Commonwealth Government contributes $300 million per annum nationally towards road asset maintenance. This level of funding will continue for the period 2004/05 to 2008/09. However, the basis on which the Commonwealth contributes to maintenance funding will change. Previously, the Commonwealth was responsible for all maintenance on the National Highway. It will now contribute to maintenance on the AusLink Network, meaning it will share maintenance costs with the States and Territories. As before, the Commonwealth will generally not contribute funding to the ongoing maintenance of infrastructure where a fee for service is charged – such as the rail network and toll roads. Each State and Territory will be able to apply the Commonwealth maintenance funding to the National Network as they judge most appropriate.

Local and Regional Transport Infrastructure
The current Commonwealth Roads to Recovery program provides funding directly to councils for road related infrastructure projects. The $1.2 billion program began on 1 January 2001 and is due to cease on 30 June 2005. The program allows councils to identify their own infrastructure priorities and direct their allocated funds to projects of their choosing.

The total AusLink investment for NSW, and other states, is listed in Table 1 below.

Table 1: Total AusLink Investment for NSW and Other States 2004/04 to 2008/09

State	Investment $M
NSW	2505
Victoria	1429
Queensland	1463
Western Australia	462
South Australia	239
Tasmania	141

Northern Territory	92
ACT	2
Total AusLink National Network Investment	7719
AusLink Regional Investment	1453
Total AusLink Investment	9172
Untied local roads grants	2550
National Black Spot Program	90
Total Land Transport Investment	11813

Source: Australian Government, *AusLink White Paper*, Department of Transport and Regional Services, June 2004, at 75.

The reaction to the AusLink proposals was generally positive, especially towards the more balanced approach to funding between rail track and highways. However, concern about the lack of Commonwealth involvement in urban transport was highlighted as a serious problem.[8] NRMA chairman Ross Turnbull said of the plan: "It's incomprehensible that there is not a divided highway between Brisbane, Sydney, Canberra and Melbourne. There is a plan now in place to do that and we think that's fantastic for our members – great news."[9] The head of the Australian Trucking Association welcomed the announcement but added: "We have a couple of concerns. We would like the Australian Government to retain full control of the national highway rather than getting into a partnership with the states. We recognise the need for reform in the rail sector. The reality is freight volumes are going to double between now and 2020. It's not realistic to expect a huge shift from road to rail. Road will continue to be the dominant mode of transport for freight."[10] The NSW Minister for Roads Hon Carl Scully MP welcomed the boost in funding for the Pacific Highway, but noted that the proposals are big on targets but scant on detail, and described the $20 million allocated for the Princess Highway south of Wollongong as a 'disgrace'.[11]

NSW Roads
A Bureau of Transport and Regional Economics report, based on data from 2002, noted that in NSW the State manages 21,000 km of roads, and local councils 161,000 km. Of a total of 182,000 km of state and local roads, the State manages 11 percent. State spending on roads for all the States in the year 2000 – 2001 is shown in Table 2. In the year 2000-01 it is evident that NSW had the highest spending on roads, exceeding that of the next highest, Queensland, by some $500 million. The State-managed roads include the National Highways and major arterial roads, which are the heavy duty part of the road system that carry a significant proportion of traffic. For instance, National Highways account for two per cent of road length but carry 14 per cent of vehicle kilometres travelled. State managed

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[8] "Finally, money to smooth the railway curves." In *The Sydney Morning Herald*, 11 June 2004.

[9] "What the experts think of the plan…" in *The Daily Telegraph*, 8 June 2004.

[10] "What the experts think of the plan…" in *The Daily Telegraph*, 8 June 2004.

[11] "AusLink funding details still unclear." *Media Release*, Hon Carl Scully MP, Minister for Roads, 7 June 2004.

roads consequently incur higher than average costs per kilometre for construction, maintenance and operations.[12]

Table 2: State Spending on Roads by Purpose and Jurisdiction 2000-01 ($ million).

Jurisdiction	Spending on State Roads	Direct spending on council roads	Grants to councils	Total
NSW	1 454	19	187	1 660
Victoria	552	130	22	703
Queensland	1064	0	63	1 126
South Australia	217	8	1	226
Western Australia	578	78	62	718
Tasmania	66	0	1	66
Northern Territory	78	0	Neg	79
ACT	19	0	0	19
Total	4 028	234	336	4 598

Source: Bureau of Transport and Regional Economics, *State Spending on Roads, Working Paper 56*, 2003, at 13.

4.0   TRANSPORT IN SYDNEY
Key Statistics
The NSW State of the Environment Report, published by the Department of Environment and Conservation, has four indicators in regard to transport. These are:

- Vehicle kilometers travelled (VKT): this is a measure of the total distance travelled by cars and other vehicles. It is one of the main factors influencing vehicle based air pollution and energy consumption;
- Mode of transport to work;
- Public transport use; and
- Fuel consumption per transport output.[13]

The State of the Environment Report uses two main sources of statistics – the Australian Bureau of Statistics and the Transport and Population Data Centre. The Transport and Population Data Centre is the official data agency of the NSW Government. The Centre conducts the Household Travel Survey of the residents of the Greater Sydney Metropolitan Area. The survey has been run continuously since 1996/97. The 2003 State of the Environment Report notes the following, in regard to the above transport indicators:

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[12]   Bureau of Transport and Regional Economics, *State Spending on Roads, Working Paper 56*, 2003, at ix.

[13]   NSW Department of Environment and Conservation, *NSW State of the Environment Report 2003*, 2003 at 30.

Vehicle Kilometres Travelled
- Total vehicle kilometers travelled, as well as individual trip lengths and times have steadily increased over the last decade, with vehicle kilometers travelled growing by over 25 per cent, more than twice as fast as the population;
- Weekday commuting and business related trips account for only 28 per cent of total trips, yet account for 50 per cent of vehicle kilometers travelled, and hence are large contributors to road based congestion, vehicle generated pollution and greenhouse gas emissions.

Transport Modes
- The private vehicle remains the most popular mode, with vehicle driver accounting for 48.9 per cent of modal share, and vehicle passenger another 21.3 per cent in 2002. Walking is the next largest modal share at 17.3 per cent.

Public Transport Use
- Public transport continues to primarily serve the commuting and education markets, accounting for a quarter of all trips for these purposes, while making up less than 10 per cent of trips for all other purposes.

Fuel Consumption per unit of Output
- In private vehicles, reductions in fuel consumption from improved technology have been offset by increases in new vehicle weight and power. Trains and buses are more energy efficient than private vehicles.[14]

Table 3 compares a summary of the transport task on an average weekday in 1991 to that in 2000. It clearly shows that vehicle kilometres travelled per capita has increased substantially in the period 1991 – 2002, from 17.7 to 20.4. Other interesting features include the increasing importance of social/recreation as reasons for travelling. In terms of mode of transport, and reflecting the rise in vehicle kilometres travelled, also notable is the increase in vehicle driver and vehicle passenger as transport mode. In 2002, 70 per cent of trips were made in the car, either as driver or passenger. For public transport, the share of trips made by train has remained relatively constant since 1991, whilst bus and walking have significantly declined.

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[14]   NSW Department of Environment and Conservation, *NSW State of the Environment Report 2003*, 2003 at 30.

Table 3: Summary of the Transport Task in Sydney on an Average Weekday

	Transport Indicator	1991	2002
	Population (millions)	3.6	4.108
Total Travel	No of trips (millions)	13.1	15.55
	Trips per capita	3.68	3.78
Purpose/ Share	Social / recreation	20.6 %	23.3 %
	Commuting	17.9 %	15.2 %
	Serve passenger	15.8 %	16.9 %
	Shopping	17.7 %	16.1 %
	Other work related travel	10.6 %	9.8 %
	Education / childcare	8.6 %	8.3 %
	Personal business	8.2 %	7.7 %
	Other	0.6 %	2.9%
Mode Share			
	Vehicle driver	46.2 %	48.9 %
	Vehicle passenger	20.7 %	21.3 %
	Train	5.0 %	4.8 %
	Bus	6.7 %	5.5 %
	Walk only	19.6 %	17.3 %
	Other modes	1.8 %	2.3 %
Kilometres Travelled	Total kms travelled (millions)	119.9 km	146.7 km
	Total vehicle km (VKT) travelled (millions)	64.0 km	83.8 km
	VKT per capita	17.7	20.4

Source: Transport and Population Data Centre, *2002 Household Travel Survey, Executive Summary*, 2004 Release. and Transport Data Centre, *Sydney Travels, Travel Characteristics of Sydney's Residents*. March 2002.

Table 4 looks at the various regions of Sydney and compares them against transport indicators for an average weekday task in 2001.

Of note is the large growth in population in western Sydney and the Central Coast compared to the rest of Sydney. For instance, over the period 1991 – 2001 the population of the Central Coast grew by 24.4 per cent, whilst the north east and south east regions of Sydney each grew by slightly less than eight per cent. However, it is the inner core of Sydney that has the highest population density, and these areas show the lowest level of vehicle use. In the inner/east region of Sydney, less than half of all trips are made by car. In contrast, in the north west Sydney region, 80 per cent of all trips are made by car. In terms of vehicle kilometres travelled per person, over the decade to 2001, the inner/east region of Sydney had a reduction of 9.9 per cent, whilst the south west of Sydney experienced growth of 23.6 per cent.

**Table 4: Key Transport Indicators for Regions of Sydney on an Average Weekday 2001**

	Inner/East Sydney	North East Sydney	South East Sydney	Inner / Central West Sydney	North West Sydney	South West Sydney	Outer West Sydney	Central Coast
% of Sydney Statistical Division Population	12.8%	18.9%	11.1%	9.9%	9.9%	14.1%	7.7	7.2%
Growth in population 1991-2001	11.5%	7.8%	7.9%	9.2%	19.7%	20.5%	12.8%	24.4%
Population density (persons per square km)	3,853	841	1,437	2,448	622	164	67	172
Mode Share: Trips for all purposes								
Private Vehicle (driver and passenger)	48.7%	67.9%	72.3%	64.6%	80.1%	78.7%	79.7%	77.3%
Train	5.1%	4.8%	6.6%	7.3%	4.1%	3.5%	3.9%	2.1%
Bus	10.9%	6.5%	3.8%	6.1%	4.4%	4.4%	3.6%	3.7%
Other (mostly walk only)	35.2%	20.7%	17.3%	22.9%	11.5%	13.3%	12.8%	16.9%
Mode share: All journey to work trips								
Private vehicle (driver and passenger)	49.2%	65.2%	69.0%	64.4%	76.8%	75.6%	77.5%	77.3%
Train	15.3%	13.0%	20.6%	21.1%	13.1%	13.9%	11.7%	11.8%
Bus	17.1%	10.8%	1.8%	4.7%	2.7%	1.4%	0.9%	1.6%
Other (mostly walk)	18.3%	11.0%	8.6%	9.8%	7.4%	9.0%	9.8%	9.2%

Growth in total km travelled (in km via road network) per person 1991-2001	-4.1%	-0.7%	8.1%	9.3%	2.0%	8.2%	10.7%	2.3%
Growth in vehicle km travelled per person 1991-2001	-9.9%	0.3%	9.1%	6.0%	4.7%	23.6%	22.8%	19.0%
Comprises Statistical Local Areas	Botany, Leichardt, Marrickville, Sth Sydney, Sydney Inner, Sydney Remainder, Randwick, Waverley, woollahara.	Manly, Pittwater, Warringah, Hunters Hill, Lane Cove, Mosman, North Sydney, Ryde, Willoughby, Hornsby, Kuringai	Bankstown, Canterbury, Hurstville, Kogarah, Rockdale, Sutherland.	Ashfield, Burwood, Concord, Drummoyne, Strathfield, Auburn, Holroyd, Parramatta.	Baulkham Hills, Blacktown.	Camden, Campbelltown, Wollondilly, Fairfield, Liverpool.	Blue Mountains, Hawkesbury, Penrith.	Gosford, Wyong.

Source: Transport and Population Data Centre, *Regional Transport Indicators for Sydney*, November 2003.

Increases in both motor vehicle volumes on the road and total distance travelled affect the quality of life in towns and cities in different ways. The widespread availability of cars, the number of licensed drivers, and improvements in road networks provide communities with increased mobility. For those with access to cars, personal mobility (as measured by vehicle kilometres travelled) is increasing at a faster rate than other transport indicators, such as number of cars, would suggest.[15] Figure 1 below graphically shows the increase in car use (in terms of vehicle kilometres travelled) compared to the number of cars and increase in population in Sydney from 1981 to 1997.

Figure 1: Mobility Expansion in Sydney 1981 – 1997.
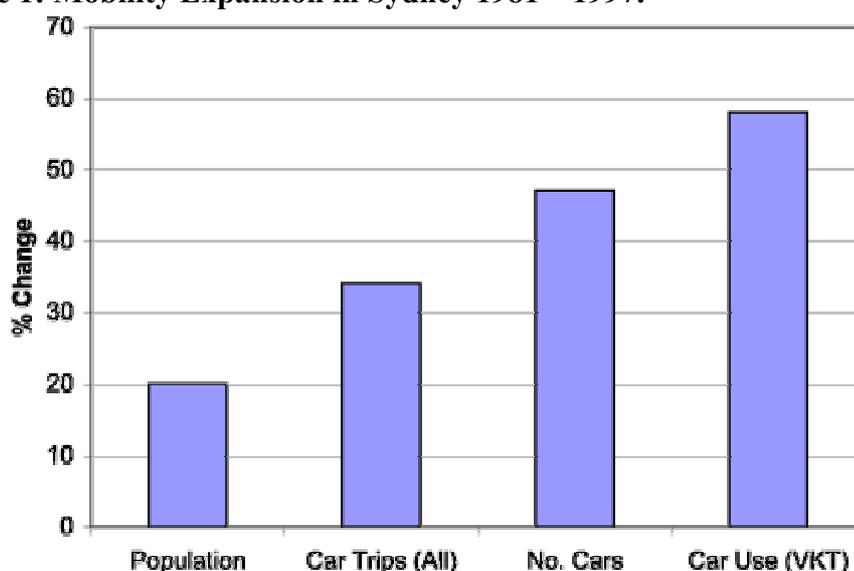
Source: Commonwealth of Australia, *Australia State of the Environment 2001. Human Settlements, Liveability: Human Well-Being*, 2003, at 81, using data from the NSW Transport Data Centre (1999).

Increased mobility in turn results in access to much wider sets of activities for a larger proportion of the community. Unfortunately there are also negative impacts from increased motor travel. Increased travel is leading to increased congestion. Moreover, on congested roads there is considerable variability in travel time, as an incident can bring traffic close to gridlock. This annoys commuters, imposes costs on business, and affects fuel costs and pollution levels. The Bureau of Transport Economics forecast that congestion and its costs will increase across Australian cities. Figure 2 shows the Bureau's estimated costs, in 1996 dollars, for Australian cities in 2015 compared to 1995, with associated estimates of dollar costs per passenger car equivalent units (pcu) kilometres. Of Australia's principal cities, only Canberra can expect to be free of congestion problems. In 1996, costs due to traffic congestion in Australia's major cities were of the order of $12.8 billion. If nothing is done, the total cost of urban congestion could rise to about $29.7 billion per year by 2015. From an environmental perspective, congestion is a major contributor to vehicle emissions. Fuel

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[15]   Commonwealth of Australia, *Australia State of the Environment 2001. Human Settlements, Liveability: Human Well-Being*, 2003, at 81.

consumption per vehicle under congested traffic conditions is approximately twice that under free-flow conditions. Therefore, congestion has the potential to double the output of greenhouse gas emissions from a stream of vehicle traffic.[16]

Figure 2: Estimates of congestion costs in Australian cities in 2015 and 1995
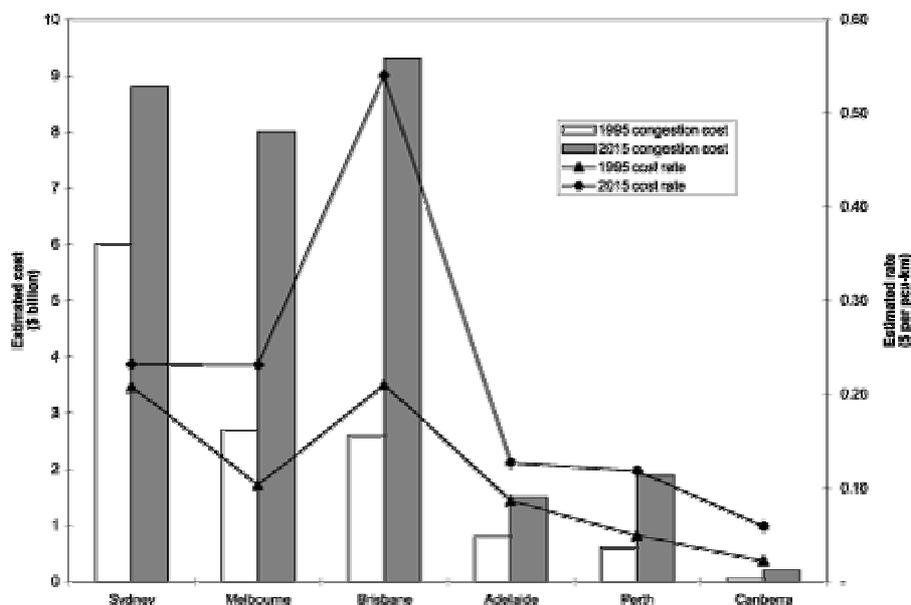
Source: Commonwealth of Australia, *Australia State of the Environment 2001. Human Settlements, Liveability: Human Well-Being*, 2003, at 82.

Train Users in Sydney
In 2001, 4.9 per cent of all weekday trips by Sydney residents were by train. 61 per cent of all train trips by Sydney residents are made during the peak period – defined as train trips arriving at their destination between 6.00am and 9.30am or departing between 3.00pm and 6.30pm. Nearly half of all trips to the Sydney CBD in the morning peak are made by train. Train is an important mode for commuters in Sydney, with 49 per cent of all Sydney train users during the peak traveling to or from work. The next most important reason for travelling by train during the peak is for education (16 per cent). Most people walk from home to the train station for travel in both the morning peak and the off-peak, while 27 per cent of morning peak users starting their trip from home drive to the station.[17]

Bus Users in Sydney
Bus services in Sydney are provided by government services (State Transit) and a number of private operators. In 2000, State Transit bus services covered approximately 1,300 route kilometers, while private services covered approximately 4,000 route kilometers. Buses account for 6 per cent of all trips by residents on an average weekday, with 921,000 trips

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[16]   Commonwealth of Australia, *Australia State of the Environment 2001. Human Settlements, Liveability: Human Well-Being*, 2003, at 82.

[17]   NSW Transport and Population Data Centre, *Train Users in Sydney*, November 2003.

made on a bus per weekday. Sixty per cent of all bus trips on an average weekday are by State Transit, with private buses accounting for 40 per cent. Education and childcare make up 52 per cent of all weekday private bus trips but only 21 per cent of State Transit weekday bus trips. In contrast, commuting comprises 34 per cent of all State Transit weekday bus trips and 15 per cent of all private weekday bus trips.[18]

5.0   TRANSPORT AND LAND USE

It is impossible to consider transport in a city without a discussion of settlement patterns. The early permanent settlements in Australia were linked to agricultural production, with primary production occurring in the hinterland regions of the colonial capitals. Movement was powered by human or animal energy, and the spatial scale of human settlement development was determined by the distance and time taken to walk within the town or to travel the fields. What manufacturing and service activities there were, were conducted within the settlements, often as cottage industries.

The Industrial Revolution caused a major change in urban scale, form, activities, lifestyle and consequent settlement patterns. The substitution of mechanical force and fossil energies for human labour and craftsmanship led to mass production of goods, a centralised concentration of production activities, and the need for mass transport of the increased labour concentrations that developed.

Rail transport enabled the growth of larger cities and their suburbs. In cities with railways, employment was concentrated in the city core, and residential areas were more dispersed. The city was essentially single-centred, with radial, fixed rail transport reinforcing the concentration of employment in the core. Automation and associated labour productivity have continued to occur since World War II, with a shift to a service-based economy initially centred around personal and community services, but increasingly around information and transactional services. At its height, the services era saw major suburbanisation of retail and other personal and social services in association with the increased personal mobility offered by the motor vehicle.

However, work by Marchetti in 1992 demonstrated that the time people are prepared to spend travelling to and from work has remained remarkably unvaried throughout settlement history. Now known as the Marchetti constant, it is an essentially constant travel time budget of, on average, 30 minutes commuting either way between residence and workplace. Hence the size of the city has been influenced by the distance which can be travelled within that time budget. An increase in travel speed has been provided by new technology, and this has facilitated an increase in urban scale, with transition from walking city to transit city to automobile city to (in the future) telematic city.[19]

Transport expert Professor Peter Newman, recently appointed a Sustainability

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[18]   NSW Transport and Population Data Centre, *Bus Users in Sydney*, December 2002.

[19]   The above section has been adapted from: Commonwealth of Australia, *Australia State of the Environment 2001. Human Settlements Theme Report*, 2001.

Commissioner for NSW by the State Government, told the Sydney Futures Forum in May this year:

> The Marchetti constant means that when a city grows beyond its one-hour wide functionality it becomes dysfunctional. That depends on the average speed and density. The lower the density, the closer you will get to that limit, the sooner you will get to that limit. I see around the world that dependent cities are hitting those limits. Road rage, anti-sprawl movements, market based re-urbanisation, [is the result]. Outside the one-hour city - and certainly Sydney is beyond that - you either say that we must build a new city centre or that growth needs to be redirected. You don't have any other choice. You have got to be serious about a new centre or you say that that growth can go anywhere - Adelaide, Perth, wherever.
>
> Transport planners still seem to think that people will adapt and just increase their travel times. They do not. They will adapt and move, but the city as a whole on average will stick to this one hour per person per day.
>
> This Marchetti constant helps us to understand a lot of things about cities, but it does explain why the inner ring has very high public transport, because within that one-hour travel time budget you can use public transport very effectively. It is in fact quicker within that ring than by car for many journeys - but not in the outer suburbs. So this is a very different city to the outer suburbs.
>
> Automobile dependence can be explained in these terms. It is where a city can only remain functional within that Marchetti constant travel time budget, if it uses automobiles as its major means of transport. If to keep within that one-hour budget the only way you can do it is by car you will do it. You will not somehow switch to using public transport because it is more comfortable or something. It will only compete if it can get you there quicker and as a way of keeping within that budget. So we need alternative options in infrastructure and land use that keep within the one-hour travel budget.[20]

According to Newman, the Marchetti constant leads to two critical policies. The first is to ensure that public transport is faster than cars in all main corridors. Cities that have effectively overcome automobile dependence have faster transit than traffic systems. In Europe, 39 km/h is the average speed of the public transport system, 34 km/h for traffic. In Sydney 37 km/h is the average speed of the traffic and 32 km/h for the transit system. Buses average around 19 km/h, trains 42 km/h. Newman noted that it is important to have train systems that can in every corridor enable a faster speed than bus travel. The second critical policy is to create local centres and town centres that are viable, in an effort to minimise travel and enable priority for walk/bike/bus in those local areas. 'Viable' is defined in terms of both residential and jobs / people density. Newman's work suggests that a density of 35 people per hectare is required to make non-car forms of transport viable. Which means for a centre about one kilometre in diameter, 10,000 people (ie, including both residents and employees) within walking distance of the centre are required

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20   Newman, P. Professor Peter Newman, Key Note Address, Sydney Futures Forum, 19 May 2004.   See   Sydney   Metropolitan   Strategy   website: http://www.metrostrategy.nsw.gov.au/dev/ViewPage.action?siteNodeId=59&languageId=1& contentId=248, Accessed 25 August 2004.

to make non-car transport viable. Larger town centres like Parramatta, which are an alternative to the central business district, require around 100,000 people (residents and jobs) within that catchment area, which Newman defines as approximately a ten kilometre diameter. If these densities are not met, Newman states that the car will remain the dominant form of transport.[21]

6.0   TRAVEL DEMAND MANAGEMENT

Transport or Travel Demand Management (TDM) refers to various strategies that change travel behavior (how, when and where people travel) in order to increase transport system efficiency and achieve specific objectives such as reduced traffic congestion, road and parking cost savings, increased safety, improved mobility for non-drivers, energy conservation and pollution emission reductions. There are many different demand management strategies with a variety of impacts. Some improve the transportation options available to consumers, while others provide an incentive to change travel mode, time or destination. Some reduce the need for physical travel through mobility substitutes or more efficient land use. Transport Demand Management is an increasingly common response to transport problems.

In the past, transportation problems were usually evaluated in terms of supply – for instance building more road and parking capacity. Increasingly, management solutions are being used that result in the more efficient use of existing capacity. There are many reasons to consider using these solutions including:

- **Multiple Benefits**: Transport Demand Management can provide multiple benefits including: congestion reduction; road and parking cost savings; consumer savings; improved transportation choice; road safety; environmental quality; community livability; efficient land use; and equity. As a result, total benefits are often much greater than other solutions that only address one or two problems.
- **Cost Effective**: When all benefits and costs are considered, Transport Demand Management is often the most cost effective solution to transportation problems. Demand management can provide significant savings by reducing and deferring the need to increase road and parking capacity, reducing vehicle operating costs, and reducing crashes and pollution emissions.
- **Flexibility**: Transport Demand Management provides a flexible response to many types of transportation problems, including those that are urgent, temporary, variable or unpredictable. TDM programs can often be implemented quickly, and can be tailored to a particular situation and user group. Demand management avoids the risk that a major capital investment will prove wasteful due to unforeseen changes in transportation needs.[22]

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[21]   Newman, P. Professor Peter Newman, Key Note Address, Sydney Futures Forum, 19 May 2004. See Sydney Metropolitan Strategy website: http://www.metrostrategy.nsw.gov.au/dev/ViewPage.action?siteNodeId=59&languageId=1& contentId=248, Accessed 25 August 2004.

[22]   Victoria Transport Policy Institute (Canada), *Online TDM Encylopedia*, see web site: http://www.vtpi.org/tdm/tdm12.htm, Accessed November 2004.

An example of a travel demand management program is TravelSmart, an initiative of the West Australian Department of Transport. Traditionally travel demand management programs have been hindered by the perception that there is no evidence of outcomes and that the initiatives are not sustainable. The TravelSmart program has helped to disprove these perceptions.

6.1   Perth – TravelSmart

TravelSmart (a registered trade mark of the Western Australian Department of Transport) is the name used for voluntary travel behaviour change programs. TravelSmart is applied using a number of key principles:

- TravelSmart informs, motivates, facilitates and empowers - it doesn't tell or advise. This is crucial to achieving sustained behaviour change;
- TravelSmart looks at the transport system from a user's perspective - rather than a transport systems/planning/logistics view;
- Community learning about travel behaviour underpins local community empowerment programs.

TravelSmart is therefore designed to inform and motivate people to use alternative transport modes to the motor car, including car pooling and alternatives to transport (eg. teleaccess). TravelSmart is a component of the Metropolitan Transport Strategy (MTS) for the Perth Metropolitan Region. The Strategy contains a set of targets for the year 2029. One set of targets is for desired changes to mode share, or the ways people choose to travel. The Strategy strives to shift a proportion of new car as driver trips to the alternative modes of car passenger, public transport, cycling and walking, as well as trip substitution or alternatives to travel (teleaccess). The Strategy targets are shown below.

Table 4: Perth Metropolitan Transport Strategy 2029 Targets

Transport Option	1991 Use Current Pattern, % of total trips	2029 Use Current Pattern (projected), % of total trips	2029 Use Metropolitan Transport Strategy Target, % of total trips
Personal journeys			
Walk only	10.0	5.8	12.5
Cycle	5.7	8.0	11.5
Public transport	6.4	4.8	12.5
Car passenger	13.0	9.0	11.5
Car driver	63.0	70.5	46.0
Efficiency Measures			
Vehicle km travelled	25,800,000	59,300,000	28,152,000

Source: West Australian Government, *Perth Metropolitan Transport Strategy 1995 – 2029*, 1995, at 21.

The TravelSmart approach notes that addressing people's travel decisions - the behavioural side - is the emerging approach in transport planning. Travel decisions can be influenced using a voluntary approach, such as the TravelSmart initiative, and "involuntary" transport policies, such as parking fees. The transport planning profession traditionally tends to focus on transport services, infrastructure, land use transport integration and involuntary transport policies. However, it is noted that programs like TravelSmart can not work in isolation from these other aspects of transport planning - for example, if there is no bus service, it is pointless promoting public transport.

TravelSmart household research showed that:

- For 40% of trips people had no option but to use the car as either a driver or passenger;
- For 15% of trips people had no option but to walk, cycle or catch public transport;
- The market share that has a choice of travel mode is therefore 45% of all trips. Currently people choose the car for 35% and walking, cycling and public transport for the other 10%.

From this research it was noted that the potential for change is enormous without the need to change transport infrastructure or services.

TravelSmart is applied in two ways:
1. Centralised or marketing - these approaches reach people in their own homes or their workplaces. The main program capable of delivering large-scale behaviour change is dialogue marketing. The empowerment principle is applied with the aim to skill and motivate the general public to use alternative modes to the car.
2. Empowerment - work with definable groups with the objective to have others implement their own TravelSmart type programs. Groups include local government authorities, schools, work places and major destinations (such as Universities). A key component is the use of travel behaviour information to inform decisions and identify opportunities for behaviour change. Examples of these types of programs include:

TravelSmart to School
- Primary school children 10 - 12 years old targeted;
- Safe-routes-to-school a pre-requisite;
- Includes students, teachers, parents and local government;
- Uses curriculum and direct teacher assistance;
- High school program being developed.

Local Government
- Community learning about travel behaviour;
- Cultural change - Council and Community;
- Local government action plans;
- Local government TravelSmart officers;
- Transport WA has provided grants to local authorities to employ TravelSmart officers for periods up to and beyond two years.

The Centralised or Marketing Approach - Individualised Marketing
Individualised Marketing is a particular type of dialogue marketing that has been developed and tested to facilitate travel behaviour change. The technique is built on a platform of informing people of their travel choices and encouraging self help. It is not about telling people which trips to change or what modes to use. The design of the technique allows the information and dialogue to be related to each individual's or household's unique situation. The information provided tailors the information, especially public transport, to each person's unique situation. This approach to travel behaviour change cannot be done through simple mass advertising or marketing. The principles of empowerment and the needs of the user are crucial to achieving sustained behaviour change.

In the indivualised marketing program people are encouraged to consider changing just 2 or 3 of their 19 car trips per week - an achievable objective that empowers people. It is not about giving up the car or changing lifestyles. A pilot project was undertaken in Perth in 1997 to ascertain the effectiveness of Individualised Marketing. The first evaluation showed that behaviour change in line with the Metropolitan Transport Strategy targets was achieved. A second evaluation survey with the participants showed that the behaviour change achieved was sustained. The success of the pilot test provided the justification to obtain funding for a large scale application of Individualised Marketing for the whole of the City of South Perth.

Table 5: Perth TravelSmart Pilot Program Results

Mode	Change after Pilot	One year after Pilot	Two years after Pilot
Car as driver trips	Down 10%	Down 11 %	Down 10%
Public Transport	Up 21 %	Up 21 %	Up 21 %
Cycling	Up 91%	Up 91%	Up 91%
Walking	Up 16%	Up 24 %	Up 16%
Car Km travelled		Down 14 %	Down 17 %

Source: Department of Transport Western Australia, *TravelSmart A Cost Effective Contribution to Transport Infrastructure* August 2000. See http://www.dpi.wa.gov.au/travelsmart/pdfs/present_infra.pdf, Accessed November 2004.

The 2000 evaluation survey of the Pilot Program concluded that Individualised Marketing has significant and longlasting effects on the mode choice even two and a half years after the campaign. The changes in mode choice proved to be sustainable, whilst at the same time these changes had hardly any consequences on mobility. The number of activities and the amount of trips remained the same, just the travel time increased by four minutes and the covered distance decreased by two kilometres. These changes stayed constant over time.[23]

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[23]   Socialdata Australia Pty Ltd, *Community Survey And Marketing Campaign For The South Perth Travelsmart Pilot Project Third Evaluation Report* September 2000.   See http://www.dpi.wa.gov.au/travelsmart/pdfs/southperthpilot3.PDF,   Accessed   November 2004.

The large scale program was undertaken from February to June 2000. About 15,300 out of 17,500 City of South Perth households with names, addresses and telephone numbers could be identified. Telephone contact was made with each household - 94% could be reached. After answering the questions households were divided into three groups:

1. **N = not interested**; 39% were in this group and these people were left alone. This was important because it saves scarce resources being spent on these people.
2. **R = regular users** of walking, cycling and public transport; (15%) these people were given a reward that in turn led to these people using these modes more.
3. **I = interested**; 40% were in this group and interested in starting to use alternative modes. These people were given information they requested and were offered a home visit if it seemed necessary. People having a home visit were sometimes given the opportunity experience public transport with a "test ticket". For all people in the **R** and **I** groups, people could select from a range of localised travel information.

As a result of the TravelSmart program for the City of South Perth, for the four months March to June 2000 there were an estimated 100,700 new bus trips. This represents a net increase on the Transperth Network of 25.2%.[24]

Because of these successes, the West Australian Government released a TravelSmart ten year plan. The proposal is to expand the dialogue marketing component, working out from the Perth central area to the middle suburbs to reach 50 per cent of the population of the Perth Metropolitan Region.[25]

TravelSmart programs have since been adopted or trialled by the Victorian, South Australian, Queensland, NSW and Commonwealth governments. In NSW the Department of Infrastructure Planning and Natural Resources, State Transit and the Australian Greenhouse Office are funding a TravelSmart Pilot Project for Sydney and the Central Coast. About 5,800 households, and some schools, work places and community groups in Ermington and Woy Woy were due to be contacted between July and October 2004 and invited to participate. During the pilot, the TravelSmart Team based in Rydalmere East Public School were to:

- Contact local residents by phone, face-to-face and through community groups and local events;
- Listen to the transport issues raised by local residents;
- Offer information and tools for change, such as personalised public transport, walking or bike journey plans, and information on local activities and services;
- Encourage community-led solutions.

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[24]   Department of Transport Western Australia, *TravelSmart A Cost Effective Contribution to Transport Infrastructure* August 2000. See http://www.dpi.wa.gov.au/travelsmart/pdfs/present_infra.pdf, Accessed November 2004.

[25]   Government of Western Australia, *TravelSmart 2010. A 10 year plan.* ND.

The Pilot focuses on trips that can be easily made by other ways or not made at all, and will be evaluated and results published in 2005.[26]

The Warren Centre for Advanced Engineering, in its *Sustainable Transport in Sustainable Cities* program, reviewed the cost effectiveness and impact of voluntary and involuntary travel behaviour change programs. It concluded that the three most successful approaches were:
- Travel Smart programs;
- Travel Demand Management programs initiated by relevant authorities and organizations; and
- Better, more formal links between planners, travel generators, consumers and providers.

The Centre recommended that the State Government fund Travel Smart demonstration projects (as it has done as discussed above). In terms of Travel Demand Management programs, the Centre noted that, as observed during the 2000 Olympic Games, Sydney residents will accept well-managed programs that provide quality alternatives to car use. The Centre recommended that State Government action should include:

- Developing and implementing an overarching travel demand policy – targeted at reducing specific congestion problems and promoting more efficient access to key activity centres;
- Making travel demand management plans a statutory requirement for all major leisure developments, including parking strategies, pricing strategies and incentives;
- Consult with the event management and sporting association industries to promote the targeted use of demand management plans with all major events.[27]

7.0   CITYRAIL – CURRENT ISSUES

Current CityRail reliability is poor, and it is instructive to review some contemporary history of the organisation to help determine how this has arisen. A report by the Coordinator General of Rail in June 2001, the *Long Term Strategic Plan for Rail*, highlighted the present day constraints on CityRail's capacity, including:

- The number of passengers able to be carried out on each train;
- The number of trains available to carry passengers during the peaks. In recent years the growth of the CityRail fleet has failed to keep pace with the growth in

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[26]   NSW Department of Infrastructure, Planning and Natural Resources, *TravelSmart NSW, About the NSW TravelSmart Pilot Project.* See website http://www.planning.nsw.gov.au/index1.html, Accessed November 2004.

[27]   The Warren Centre for Advanced Engineering, *Sustainable Transport in Sustainable Cities, Changing Travel Behaviour: Options for Sustainable Transport*, June 2002, at 27.

patronage demand;

- The number of tracks. This is a severe constraint, as in the last 50 years there have been almost no track amplifications on the metropolitan rail network;
- The need for CityRail to accommodate three different types of demand on the one network: relatively long distance intercity and outer-suburban demand; short haul suburban demand and 'inner city distribution' demand. Express services must therefore share track used by slower trains;
- The long train 'dwell' times required at several of the busiest stations, including the CBD underground stations;
- The large number of 'flat' – ie, non grade separate junctions. The congestion at these junctions substantially reduces the capacity of all lines feeding into the junctions. Key junctions have to be closely timetabled during peak periods, and even a slight delay in one train service can very quickly delay large numbers of trains. There have been almost no grade separations of rail junctions for the last 50 years;
- The inability of the signaling system to permit trains to travel closer together;
- The reliability of the metropolitan infrastructure has fallen in recent years. One of the main factors in this degradation of infrastructure was the downgrading of many 'major periodic' maintenance programs during the 1990s. These works included: track strengthening; junction upgrades; signaling modernization programs; overhead wiring and ballast cleaning. The result is a large backlog of essential major maintenance tasks, which will take up to 20 years to clear.[28] The Auditor-General reported to Parliament that as at 30 June 2004 the Rail Infrastructure Corporation had a maintenance backlog of $596 million for country lines and $80 million for metropolitan lines.[29]

The Strategic Plan report concluded:

> The system is rapidly approaching gridlock, as there is a finite limit on how many trains can reliably and safely use each track and, even more significantly, on how closely they can follow each other through multiple congested junctions and/or wait their turn….
>
> In summary, the metropolitan rail network is now so congested that peak CityRail operations are extremely finely balanced, with minimal margins before delays occur and escalate.[30]

The above warnings provided in the 2001 Strategic Plan were prophetic, as CityRail reliability has reached low levels. The CityRail targets for train services are for 99% of peak timetabled services to operate, and for at least 92 out of every 100 peak services to

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[28] Office of the Coordinator General of Rail, *Long-term Strategic Plan for Rail. Greater Sydney metropolitan region. Overview Report.* June 2001 at 7.

[29] Audit Office of New South Wales, *New South Wales Auditor-General's Report, Financial Audits*, Volume Four 2004, November 2004 at 282.

[30] Office of the Coordinator General of Rail, *Long-term Strategic Plan for Rail. Greater Sydney metropolitan region. Overview Report.* June 2001 at 7.

arrive within 3 minutes and 59 seconds of their scheduled arrival time (5 minutes and 59 seconds for Intercity services). The targets achieved since 2000-01 are shown in table 6.

Table 6: CityRail Yearly On-time Running

Year	Performance - % of trains arriving on time
2000 – 2001	89.9
2001 – 2002	92.6
2002 – 2003	90.9
2003 – 2004	72.5
2004 – 2005	61.9

Source: CityRail website:
http://www.cityrail.com.au/aboutus/our_performance/otr_year_tot_chart.jsp?area=cr, Accessed November 2004. NB. From 2001-02, performance figures have been adjusted for force majeure (ie, events beyond CityRail control).

The 'averaged' nature of the yearly figures hides the very poor performance of on time trains in 2004 – 2005, especially in the afternoon peak. For instance, in the first week of November, just 23.8 per cent of afternoon peak services arrived on time.[31] Noting the decline in performance from 2003-04, the Auditor-General observed that there appears to be a variety of causes for the decline, including: the introduction of data loggers in late 2003; trains remaining longer at stations for safety reasons; and a shortage of train crews.[32]

These factors arise from the train crash at Waterfall in January 2003, which claimed seven lives. A Special Commission of Inquiry into the accident concluded that the driver of the train became incapacitated at the controls as a result of a pre-existing medical condition. The risk controls against this event failed. The Inquiry also found an underdeveloped safety culture within the railway organization, and that the Rail Safety Regulator has been inadequately resourced to develop an effective rail safety regulatory regime.[33]

In response to the Waterfall accident, a new train driver medical testing regime has resulted in the retirement of drivers, leading to a shortage of train crew. Vince Graham, chief executive of RailCorp, noting the problems of reliability in November 2004, stated: "It is very easy to identify when it began. The slower operations of the network commenced with safety initiatives post-Waterfall and very specifically the data loggers on our trains last year. They are the equivalent of an aircraft black box and contain all the information about the running of the train. They act like continuous speed cameras, so think of your behaviour on the road when you have a speed camera."[34]

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[31]   CityRail Website,
       http://www.cityrail.com.au/aboutus/our_performance/otr_week_chart.jsp?DATE_NEXT=
       01-10-2004&area=cr&peak=pm, Accessed November 2004.

[32]   Audit Office of New South Wales, *New South Wales Auditor-General's Report, Financial Audits*, Volume Four 2004, November 2004 at 285.

[33]   Ministry of Transport, *Waterfall. 31 January 2003, Railway Safety Investigation. Final Report*, at 5.

[34]   "Tragedy blamed for chaos on trains." In *The Sun-Herald*, 14 November 2004.

However, the Independent Transport Safety and Reliability Regulator, in a review requested by the Minister for Transport Services, noted that with the introduction of data loggers train journey times increased by approximately two per cent in December 2003. The Regulator concluded that it is unlikely this is the only reason for the drop in on-time running from 90 per cent to below 50 per cent. The Regulator continued:

> Examining the longer term trends suggests that the decline in on-time running commenced from September 2002. Further, the number of incidents resulting in trains being delayed started to increase late 2001 and early 2002. This suggests that the system was sufficiently robust to contain any decline in on-time running until the number of incidents exceeded a certain threshold.[35]

One of the conclusions reached by the Regulator was:

> The deterioration in on-time running commenced before the Waterfall crash and can be linked to the number of incidents increasing above threshold levels. Incident levels have to be managed.[36]

A revamped timetable, in which a proportion of weekend services were cancelled to provide more drivers for weekday requirements, was implemented in July 2004. However, this approach does not seem to have helped, with the continuing deterioration of on-time performance through to November. The deterioration in services has coincided with the renegotiation of the train drivers enterprise wage agreement.

The Long-Term Strategic Plan for Rail recommended the restoration and strengthening of 'sectorisation' of the rail system, with the aim of reducing the impact of incidents across the network and improving on-time running. The plan was adopted by the Government and became known as the Railway Clearways Project. It forms one of the three pillars of the Government's response to solve the current problems confronting the network. The other two are: recruiting more drivers and reducing the amount of time spent to train them; and introducing a new railway timetable.

The new timetable, due for implementation in September 2005, would include longer running times – reportedly needed to improve reliability and operate a 'safer but slower' network.[37] The Government released a draft of the new timetable for public comment on 1 December 2004. A major aim of the new timetable is to improve on-time running during the evening peak, and it attempts to do this by reducing the number of off-peak services during the day. Under the new timetable, 270 week day off-peak services will be cut, and travel times will increase by ten per cent.[38] In response to the new timetable, the chair of

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[35]   Independent Transport Safety and Reliability Regulator, Service Reliability Division, *Review of On-Time Running of CityRail Services*. June 2004, at 5.

[36]   Independent Transport Safety and Reliability Regulator, Service Reliability Division, *Review of On-Time Running of CityRail Services*. June 2004, at 5.

[37]   "Working CityRail timetable on track – but you'll have to wait until April." in *The Sydney Morning Herald*, 10 August 2004.

[38]   "Cut, cut, cut: the great train robbery." in *The Sydney Morning Herald*, 2 December 2004.

the NSW Commuter Council Kevin Parish was reported as saying: "We are really not very happy about this, … commuters wanted faster, more frequent services - but that's the one thing we seem to have lost."[39]

The Railways Clearways Project divides the CityRail network into distinct entitites so that an incident on one section of the network will not spillover and affect the operations of the whole network. The project develops major clearway routes as follows:

Clearway 1 – Eastern Suburbs and Illawarra
- Increase capacity on the Eastern Suburbs & Illawarra Line;
- Estimated Clearway cost: $255 million;
- Bondi Junction turnback – under construction, operational in 2005;
- Cronulla branch line duplication, planned construction 2005-2008.

Clearway 2 – Bankstown
- Upgrades capacity and operations on the Bankstown Line;
- Estimated Clearway cost: $290 million.
- Lidcombe turnback and platform – planned construction 2005-2007;
- Two extra tracks, Sydenham-Erskineville, planned construction 2007-2010;
- Liverpool turnback and platform, planned construction 2005-2008.

Clearway 3 – Campbelltown Express
- Provide the capacity to facilitate express services from the Campbelltown area to the City via East Hills;
- Estimated Clearway cost: $340 million;
- Extra tracks, Kingsgrove-Revesby, planned construction 2006-2009;
- Extra platform at Macarthur, planned construction 2008-2010;
- Clearway 3 will also benefit from the Sydenham-Erskineville upgrade.

Clearway 4 – Airport and South
- Clearway 4 will divide the existing East Hills Line into two independent clearways and will see the creation of the all-stations to the City via the airport route starting from Revesby as detailed in Clearway 3 above. This route will be known as the Airport Line. These projects are fundamental in achieving reliability on these routes;
- Estimated Clearway cost: $183 million.;
- Macdonaldtown turnback, under construction, operational in 2005;
- Homebush turnback and platform, planned construction 2005-2007;
- Revesby turnback and platforms, planned construction 2004-2007;
- Macdonaldtown stabling, planned construction 2006-2008.

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[39]   "On time is great, but commuter groups would prefer faster and more frequent." in *The Sydney Morning Herald*, 3 December 2004.

Clearway 5 – North West
- Affecting the North Shore, Western and Northern Lines, these projects will improve reliability and capacity;
- Estimated Clearway cost: $166 million;
- Extra platform at Berowra, planned construction 2004-2005;
- Epping to Chatswood route, under construction, operational in 2008 (independently funded);
- Extra platform at Hornsby, planned construction 2005-2007;
- Carlingford Line upgrade, planned construction 2009-2010.[40]

When completed by 2010, the Rail Clearways Plan will significantly reduce the sharing of critical infrastructure and train paths amongst the various existing lines in the Sydney suburban area. Separating the routes means an incident on one part of the rail network will have a limited effect on services on other parts of the network.

However, even with these improvements from the Clearways Project, the Long Term Strategic Plan for Rail noted that inner city lines will all reach saturation within the next ten years (or so). There will be a need for a new, alternative route through the CBD from Eveleigh (Redfern) to St Leonards in the medium term, most likely by between 2011 and 2015. The Strategic Plan noted:

> This project is regarded as being of the highest priority. Without it, the metropolitan rail system will face strangulation and progressive operational collapse – and solutions if this occurs will all have very long lead times, of up to ten years or more….
>
> If rail patronage grows as expected, and even if it grows much more slowly than expected, there is now no time to spare. Because of the complexity of almost all aspects of the project, it is essential to start serious planning for this new line immediately.[41]

The Strategic Plan observed that the new route should:

- Use the unused platforms 26 and 27 at Central Station;
- Have at least two stations within the CBD, one near Park St, providing essential relief for Town Hall station, and another further to the north, preferably in the Centre of the CBD 'spine';
- Have stations at North Sydney and St Leonards, and desirably also at intermediate locations such as Crows Nest;
- Be completed before any additional demand – beyond the substantial growth in demand forecast along the existing rail corridors – is created by the opening of any new rail lines.[42]

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[40]   CityRail, Sources of congestion and planned Rail Clearways projects, ND, see website: http://www.cityrail.info/news/clearways_routes.jsp#, Accessed November 2004.

[41]   Office of the Coordinator General of Rail, *Long-term Strategic Plan for Rail. Greater Sydney metropolitan region. Overview Report*. June 2001 at 51.

[42]   Office of the Coordinator General of Rail, *Long-term Strategic Plan for Rail. Greater*

With the current poor performance of the railways, and congested bus routes through the inner city, green, business and civic leaders are increasingly vocal in their calls for a light rail mass transit system. Recently the Lord Mayor of Sydney, Clover Moore MP, hosted a meeting of leaders of city business groups concerned about deteriorating transit options and how these may hurt CBD commerce. Sydney City Council is promoting two inner-west light rail lines - one an extension of the existing track from Lilyfield to Burwood. The other line would flow from Burwood to the city along Parramatta Road, the corridor identified by the Minister for Infrastructure and Planning, Craig Knowles, as being in desperate need of revival. However, the intensifying push for light rail still faces stiff political opposition, especially from the Roads Minister, Carl Scully, and the Transport Services Minister, Michael Costa. Both ministers believe the virtues of light rail are inflated, and both argue that a new mass-transit network would soak up funds needed to reinvigorate the train, bus and road systems.[43]

8.0   THE UNSWORTH BUS REVIEW

On 2 July 2003 the Minister for Transport Services, the Hon Michael Costa MLC, announced the establishment of a Ministerial Review into Bus Services in NSW, to be chaired by the Hon Barrie Unsworth. The review was described by the Minister as the first complete 'stock-take' of services since buses replaced Sydney's tram network in 1961.[44]

An interim report of the review was released in November 2003, which included 36 recommendations. Public comment was sought, and a final report was published in February 2004 with 48 recommendations. The review proposed the creation of a network of strategic corridors in Sydney, Wollongong, Newcastle and the Central Coast providing fast, frequent, and direct services. The corridors would include improved bus priority measures such as bus lanes and bus priority signals at traffic lights. To support this network of strategic corridors, the review proposed the replacement of the existing 38 bus contract zones across the Sydney metropolitan area with ten contracts. The review recommended that payment of school student travel should be based on actual travel based on smartcard technology, and that fare levels should be equalized over Sydney and be consistent whether traveling on a private or government bus. For rural and regional areas, the review recommended the introduction of a whole of government integrated regional transport planning, and implement a new regulatory model, with a focus on service delivery outcomes rather than different service types.[45]

The Government fundamentally accepted the reforms as proposed by the review, and the

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Sydney metropolitan region. Overview Report. June 2001 at 51.

43   "City leaders join forces to confront train meltdown." in *The Sydney Morning Herald*, 3 December 2004.

44   "Unsworth Bus Review Final Report: Blueprint for Better Bus Services." *Media Release*, Minister for Transport Services, Hon Michael Costa MLC, 17 March 2004.

45   *Review of Bus Services in New South Wales. Interim Report*, November 2003. Chair Hon Barrie Unsworth.

Passenger Transport Amendment (Bus Reform) Act 2004, which reflected these reforms, was assented to on 6 July 2004.

On 31 August 2004, the Government announced new bus fare structures to end the disparity between private and government bus travel. Under the plan, to commence on 1 January 2005, up to 75 per cent of bus fares in Sydney's greater west and south would be reduced or frozen, and this would be offset by an average increase of 6.1 per cent in fares for State Transit Authority services. For all buses, the current 25 band fare structure will be streamlined into five bands. Pensioner Excursion Tickets (for all day travel on all public transport nodes) will rise to $2.50 and will be valid on private buses.[46]

9.0   MINISTERIAL INQUIRY INTO SUSTAINABLE TRANSPORT IN NSW

In May 2003 the Minister for Transport Services the Hon Michael Costa MLC requested Thomas Parry to inquire into sustainable transport in NSW. An interim report was released in August 2003 and a final report in December 2003.

The interim report noted that over $1.9 billion of taxpayer money goes to fund passenger transport services of one sort or another across the State every year. The report noted that it was hard to believe that taxpayers get value for money for this expenditure, and concluded that we cannot continue with the current arrangements for providing transport services. The reports observed that we have:

- A metropolitan rail system that is so 'tangled' that it is unable to cope with necessary system changes, let alone essential service expansion;
- A government operated bus system that is providing some services that are obviously not needed, yet a privately operated bus system that is not adequately servicing large parts of the state, especially in rural NSW;
- Highly subsidised country passenger rail services that are not being effectively deployed to the overall benefit of rural and regional communities in meeting their health and community transport needs;
- Expensive and poorly targeted school transport and 'pensioner' excursion ticket schemes and disparities between different transport modes in the availability of fare concessions;
- A congested road network that provides no real price signals;
- A costly public ferry service that includes what is effectively a subsidised water taxi service for mainly middle to high income earners and tourists;
- An underfunded community transport scheme that means patients in regional and rural hospitals are not provided with even basic transport when they need it most.[47]

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[46]   'Carr announces "fare go" for Western Sydney bus commuters.' *Media Release*, Ministry of Transport, 31 August 2004.

[47]   Parry,G. *Ministerial inquiry into sustainable transport in New South Wales. Options for the future. Interim Report.* August 2003 at xv.

In contrast, the reports identified the need for:

- A twenty-first century solution to create a sustainable transport system for the benefit of the broad community, the cost of which will run into billions of dollars;
- Better deployment of funds and greater efficiency to improve value from the nearly $2 billion that taxpayers currently spend each year on passenger transport;
- At the same time as extra funding for system improvements, improved cost recovery from: taxpayers; users via modest real fare increases; the system via efficiency improvements; and savings from refocusing existing subsidies for school students and seniors.

The report identified that one of the major issues related to the sustainable funding of public passenger transport is the relationship between public transport and private transport. Motorists already pay substantial amounts for using motor vehicles, including registration charges and fuel excise. But they only pay for their specific road use on a few tolled roads and crossings. As a result, private transport users do not get the same price signals from road pricing that public transport users get from fares for a parallel journey. In the absence of transparent relative price signals, public transport will always be at some disadvantage to private car use. The report concluded that we need to look ahead and have the debate now about how targeted, specific road use pricing might fit into a future integrated approach to sustainable transport, especially in the Sydney metropolitan area.

A summary of the recommendations of the final report is as follows:

Delivering better services: - public transport operators should be required to demonstrate their performance against a set of key performance indicators. Failure to perform satisfactorily against these indicators should trigger a government review at the conclusion of the contract of alternatives such as: the introduction of private sector contestability for operating public transport networks; or examining investment in alternative transport strategies (such as road networks) until public transport operators can deliver the needed services efficiently.

Funding options: - require public transport operators to pursue efficiency gains. Use fare increases to fund improvements in services. Use targeted beneficiary pays funding sources to partly fund network augmentations where beneficiaries can be identified – eg development charges. Evaluate the use of public private partnerships to build and operate public transport infrastructure. Pursue commercial development opportunities at and around public transport hubs to help finance infrastructure upgrades. Consider implementing a modest transport improvement rate / levy. Only consider public debt as a funding source when other more desirable funding options have been fully explored, and only for efficient and effective projects that would generate additional community benefits.

Refocusing CountryLink: - pursue opportunities for improving efficiency. Ensure that the level of subsidies to CountryLink services can be justified on the basis of compensating for external benefits. Explore all options for improving long distance passenger services that provide access to rural and regional NSW. Consider the costs and benefits of alternative transport modes and include a case-by-case assessment of the service levels,

including service frequency, that communities need. Review CountryLink's fare structures and the appropriateness of the extent of discounts on tickets purchased in advance.

Fair fares and efficient subsidies: - CityRail fares should increase modestly in real terms to help fund better services. Some increases in fares for longer distances may also be justified.

Concessions and community transport: - provide payments to transport operators for actual school student travel – using pilot 'smartcard' technology in 2004. Introduce an annual application fee for school student travel passes of $30 per student. Make pensioner excursion tickets available to pensioners and seniors with health cards using the CityRail, STA and metropolitan private bus networks. Seniors card holders (without a health card) should be eligible for half-fare concessions. Replace the existing metropolitan pensioner excursion ticket fare scales with $2.50, $4.00 and $5.00 fares. Provide private bus service users with the same concessions as STA bus users. Establish a network of regional community transport development workers across the State that are funded and coordinated by the Ministry of Transport.

Charging for road use: - any implementation of road use pricing must be accompanied by rationalization of the current taxation of motorists. Following consultation, consider implementing electronic road pricing within the next 5 – 10 years as a means of effectively signaling to the community the external costs of road use – congestion, pollution, road wear and tear and accidents. Undertake a joint review the Federal Government of taxation, expenditure and other policies that are detrimental to public transport compared with private transport.

Decision criteria for transport projects: - undertake strategic, multi-modal transport planning that is integrated with urban planning. The multi-modal transport plan should be the basis for generating a suitable menu of infrastructure projects deemed capable of meeting government's announced transport objectives for the Greater Sydney Area.

The report concluded that we cannot continue with the current arrangements for providing and funding transport services – whether road, rail, bus or ferry and whether publicly or privately operated.[48]

10.0 THE WARREN CENTRE FOR ADVANCED ENGINEERING – SUSTAINABLE TRANSPORT IN SUSTAINABLE CITIES PROJECT

This paper has reviewed several government initiated papers or projects on transport. However, it can also be useful to review projects that independent commentators are engaged in. The Warren Centre for Advanced Engineering of the University of Sydney engaged many leading transport planning, urban planning, local government and law and technology professionals (over 200 people were involved) to review transport in Sydney.

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[48]   Parry,G. *Ministerial inquiry into sustainable transport in New South Wales. A Framework for the future. Final Report*. December 2003 at xiv.

The Centre concluded that the transport system serving Sydney is not sustainable, and that there is no doubt that current strategies are not working. As part of its review the Centre commissioned a community values survey, and found:

- Sydney residents are passionately interested in their city and transport, they want to contribute to the debate but do not believe anybody is listening to them;
- Residents are deeply concerned about the future of Sydney and want to see stronger long-term planning;
- Residents consider Sydney's transport and traffic problems as serious, with traffic congestion the most critical problem;
- Greenhouse gas, affordable housing and air quality also rate highly among residents' concerns;
- Residents make a variety of personal trade-offs between housing, transport and lifestyle, but exhibit a surprising degree of consensus, across age, social and geographic groups, as to our problems and desirable future directions;
- The community favours demand management – addressing the causes of travel - over freeway building. People do not believe that enough is being spent on public transport.

The Warren Centre developed the following vision:

> Our vision for Sydney is of a city having improved quality of life for its residents through better accessibility to employment, education, recreation and social opportunities, at a lower cost than we presently impose on the local and global environment.[49]

With this vision the Centre developed seven objectives, each with performance indicators and targets. The objectives were:

1. Reduce harmful emissions – nitrogen oxides, greenhouse gases and very fine particulates;
2. Minimize use of non-renewable energy;
3. Minimise other environmental impacts – such as on flora and fauna;
4. Improve accessibility;
5. Improve health – public awareness of the health consequences of transport choices, transport related trauma, personal safety and noise levels;
6. Improve accessibility for the disadvantaged;
7. Reduce consumption of economic resources in transport.

The Centre then identified six strategies that it believed have the potential to change the city's urban systems for the better within 20 years. It was noted that the largest gains will be achieved through integration between the strategies. The strategies were:

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[49]   The Warren Centre for Advanced Engineering, *Sustainable Transport in Sustainable Cities, Towards a City of Cities*, June 2002, at 26.

Strategy 1: Engage the community: - in order to increase community 'ownership' through its involvement in planning for Sydney; and capture community values, knowledge and understanding of transport. Five key actions include:
- Fund programs aimed at changing individual transport behaviour;
- Promote active transport (walking and cycling);
- Transport suppliers to become actively involved in travel behaviour change;
- Implement a travel demand management policy complemented by service improvements;
- Further promote a whole-of-government approach to transport and land use.

Strategy 2: Monitor and report on transport performance: - provide the community and transport practitioners with clear, accurate and unbiased information on the transport ssytem's performance against key indicators. Good information is the key to sound decision making.
- Create an independent group to monitor transport sustainability.

Strategy 3: Optimise the performance of what we have.
- Create an integrated transport planning, pricing and funding mechanism;
- Introduce integrated smartcard ticketing;
- Provide improved transport service information;
- Improve Sydney's current CityRail system;
- Amend regulations governing buses, taxis and demand-responsive transport and conduct trials of new services;
- Develop and test a large-scale networked bus system;
- Facilitate introduction of 'green' vehicles
- Invest more in pedestrians and cyclists;
- Address the complex issues associated with parking (the availability of cheap or free parking is a major factor in many decisions to drive rather than to walk or take public transport);
- Develop a freight sustainability code of practice;
- Complete the primary road network and allocate priority to freight vehicles and buses.

Strategy 4: Modify the shape of Sydney.
- Adopt a city of cities vision – Sydney is a multi-centred city, the best transport technology for one area of Sydney might be quite different from that required by another;
- Embody freight planning intro strategic land use planning;
- Designate and develop multi-use transport corridors between regions;
- Set up an energy monitoring and modeling program;
- Focus urban consolidation policies on better accessibility;
- Develop a 50 year airport and high speed rail plan for Sydney;
- Require sustainable transport planning in all new developments.

Strategy 5: Introduce better planning, pricing, funding, new technology and infrastructure
- Inititate a rolling long-term integrated transport plan for Sydney;
- Introduce congestion pricing and environmental pricing;
- Develop new funding sources for transport;
- Commission appropriate new transport infrastructure, equipment and technology.

Strategy 6: Lower barriers to change
- Restructure government to be outcomes based.[50]

The Warren Centre concluded that there was sufficient consensus among those involved in its transport review project to believe that there are ways in which Sydney can 'lift its game' and improve its access and equity so that its transport system will be the envy of the world. Clearly, the work of the Warren Centre has provided the community and government with a considerable challenge.

11.0   CONCLUSION

The work of the Warren Centre and others suggests that we need to rethink our approach to transport in Sydney. Currently we are faced with: escalating car use; significant traffic congestion; and a train service not operating at a satisfactory level. The State Government has committed a significant amount of money to help address these factors. More recently, the work developing the Sydney Metropolitan Strategy has focused on rejuvenating town centres along strategic corridors of Sydney. The intent is that people will need to travel less to employment and social / recreational opportunities. Clearly this is a long term strategy, the results of which could be enhanced in the current context by the use of travel behaviour programs such as TravelSmart.

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[50]   The Warren Centre for Advanced Engineering, *Sustainable Transport in Sustainable Cities, Towards a City of Cities*, June 2002, at 28.

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