

AUSTRALASIAN RAILWAY ASSOCIATION INC

Urban Rail in the New Millenium

People for Public Transport Forum

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Introduction

The need for efficient urban transportation is growing at a rapid rate. Increasing urban sprawl and road congestion requires fast, accessible mobility to enable people to perform their daily tasks.

Few would deny that motor cars provide a comfortable and convenient way of getting around our cities. However, the largest single threat to the maintenance of our urban lifestyles is vehicle growth in our cities. One third of metropolitan land use in Australia is roads and car parks - a major cause of urban sprawl. We are rapidly approaching too much of a good thing.

Bigger, wider roads are no longer a realistic solution for coping with increasing population and community activity. The introduction to Sound Move, the ten-year regional transit system plan for the Puget Sound Region in the north-west of the US, makes the very salient point that building more roads will not solve the problem.

"Southern California learned a costly lesson that investing billions in more roads and freeways doesn't eliminate congestion"

Sound Move, 1996

The December 1997 "Economist" magazine labelled continual road building to meet demand as "one of the last relics of a Soviet-style command economy". The NSW Roads and Traffic Authority found that unrestrained road demand in Sydney would increase peak-hour congestion by 600% and urban air pollution by 35%. Don't assume that the hour of need for better public transport in Adelaide to prevent similar problems is far away.

Australia has very low urban public transport patronage. It is typically only one third of European cities and is one of the lowest in the world. Despite this, Australia's urban rail and tram/light rail services are vital to urban transport systems. In 1997/98, Australia's urban rail and tram/light rail systems carried 580 million people, keeping 470 million car journeys off our city streets.

Urban and tram/light rail services reduce the total cost of urban transport because they are the most efficient way of moving large numbers of people with minimal environmental impact. They provide immense benefits to our cities each year by reducing the amount of pollution, congestion, accidents, noise, land use and greenhouse gases attributable to motor cars. These are benefits that flow through to the whole community.

In the US, Congress has just re-authorized ISTEA (Intermodal Surface Transportation & Efficiency Act) which will see US \$42 billion spent on transit projects over the next five years because of the benefits they provide. The American Public Transit Association estimates that urban rail services generate \$5.2 billion in annual economic and social benefits from reduced congestion, pollution, accidents and increased tax revenue. Every dollar invested in urban rail provides a \$4 return. Can we afford not to invest in new and expanded urban rail services?

Greenhouse Gas Emissions

Australia ranks sixteenth among major greenhouse gas producing nations, but has the third highest greenhouse gas emissions from transport in the world, after the US and Canada. It is higher than the OECD average. This is because of Australia's excessive reliance on road transport.

It is no coincidence that Australia has the third lowest petrol prices in the world, after the US and Canada, despite motorists' bleating about recent petrol price increases.

Australia's economy is one of the most fossil fuel dependent in the world. Road transport consumes nearly 90% of Australia's transport energy requirements and produces 86% of the nation's transport greenhouse gas emissions. In particular, urban motorists cause 99% of urban transport greenhouse gas emissions, 60% of road transport greenhouse gas emissions and 8% of Australia's total greenhouse gas emissions.

In contrast, rail transport consumes just 3% of Australia's domestic transport energy consumption and contributes only 2% of transport greenhouse gas emissions. Urban rail services are, on average, 2.5 times more energy efficient than motor cars and twice as energy efficient as buses. This differential is even greater during peak periods. The contribution of urban rail transport to Australia's total greenhouse gas emissions is negligible, including power generated for electric services and diesel powered services.

Australia's commitment to the Kyoto protocol requires its greenhouse gas emissions to be no more than 8% above its 1990 levels by 2012. However, Australia's greenhouse gas emissions are already 9% above its 1990 levels. Transport now comprises 17% of Australia's greenhouse gas emissions - an increase of 15% over its 1990 level.

The Prime Minister's Science Engineering and Innovation Council found that for Australia to meet its Kyoto greenhouse targets it must cut 25% or 100 million tonnes by 2010 from its expected emissions under a 'business as usual' approach. Eliminating all road transport would achieve a cut of 60 million tonnes of CO2 equivalent. This indicates the size of the greenhouse problem caused by road transport.

The National Greenhouse Advisory Panel formed as part of the Federal Government's National Greenhouse Response Strategy and comprising a wide range of community and business interests has recommended that governments move quickly to introduce motor vehicle demand management strategies in order to comply with Australia's greenhouse gas emission targets.

These strategies, outlined in the 1997 National Greenhouse Response Strategy Discussion Paper (March 1997) and endorsed by all levels of government, include:

- develop salary packaging arrangements which are neutral with respect to employee choice of transport (more about this later);
- examine economic policy instruments (both incentives and disincentives) relating to transport, where feasible, to be consistent with national fiscal and environmental policy;
- encourage transport providers and users to take account of the greenhouse emissions implications of their activities;
- promote commuting behaviour by employees that reduces greenhouse emissions (eg use of public transport in preference to the car);
- promote a reduction in transport greenhouse emissions through travel demand management;

- promote public transport use in urban areas;
- reduce reliance on the private car; and
- promote integrated policy development and decision-making to achieve greenhouse emissions abatement in the transport sector.

Transport Externalities

The social costs road transport due to air pollution, congestion, noise and accidents add up to \$12.5 billion dollars per year in Australia. Because they are not included as a cost, they are in effect costed at zero and do not show up in transport balance sheets.

They are externalities for which all society pays. If these costs were attributable to any other man-made activity, it would probably be banned.

Transport Externalilty	%GDP	Cost
Congestion	1.25	\$5 billion
Air pollution	0.25	\$1 billion
Noise	0.1	\$400 million
Accidents	1.5	\$6 billion
Total	3.1	\$12.4 billion

Motor vehicle emissions in urban areas are responsible for 85% of carbon monoxide, which causes heart ailments; 90% of air-borne lead, which causes brain damage, particularly in young children; 75% of nitrogen oxides, which contribute to asthma; and ozone and other particulates that cause smog

A recently released study of 3,5 00 men in Stockholm over a 3 0 year period found that 1 0% of the men, who were exposed to heavy traffic fumes during the 30 year study, had a 40% higher chance of developing lung cancer.

We are paying too high a price for our obsession with motor cars.

Rail - the Intelligent Transport System

Rail services provide a more cost-effective, sustainable solution to transport problems than road transport..

The benefits of urban rail services are:

- at least 2.5 times more energy efficient than road
- reduce urban air pollution and greenhouse gas emissions
- seven times safer than road
- cost less than half the cost of a road to build and maintain
- require only one third of the land of a road
- require only 7 square metres per person compared with 120 square metres per person for cars
- free up land for housing, parkland or other community or commercial purposes
- can easily move 20-30,000 people per hour, over four times the capacity of a six-lane freeway

- save users \$20-25 per day in petrol and parking costs
- avoid traffic congestion

The ability of rail services to absorb traffic growth is demonstrated by GO Transit in Toronto. GO Transit operates commuter trains to Toronto's outer suburbs and rural commuting areas. According to Metro Toronto's Central Area Transportation Review, almost all of the growth in peak period trips to the Central Area since 1975 has been absorbed by GO Transit rail services. Automobile trips to Toronto's Central Area remain at 1960s levels.

GO Transit carries 29,000 passengers each peak period. To replace this capacity would require 6 six lane freeways.

Sydney's CityRail system moved 50,000 people per hour into the new Homebush station during this year's Easter Show - an excellent demonstration for the Olympics next year.

Just one Trans Adelaide peak hour rail service carrying 600 people replaces 480 cars. This significantly reduces congestion and pollution caused by motor cars and the amount of land needed for roads and car parks.

New, fast rail services to outer urban areas are a far more economically and environmentally sustainable transport solution than continual freeway construction that simply exacerbates urban sprawl and car use.

Projects like Queensland's Gold Coast Railway, Perth's Northern Suburbs Railway and Sydney's proposed Parramatta-Chatswood railway demonstrate the importance of rail to alleviating urban road congestion and air pollution.

Road Pricing

Roads are the only form of transport not subject to commercial pricing principles.

Unlike other transport infrastructure investments, there is no requirement to make a commercial return on road funding. Road funding grants simply come out of the Government pot irrespective of the commercial nature of the expenditure or any thorough appraisal of alternatives.

The Productivity Commission in its draft report Progress in Rail Reform recommended that there be an inquiry into the provision, funding and pricing of roads in Australia. Only through commercialising roads, as is being considered in New Zealand, will the true costs of road transport be apparent.

The only semblance of commercial focus is privately funded toll roads. But even these roads - such as Melbourne's CityLink and Sydney's M2 Motorway - must be protected from public transport competition in order to be viable.

Melbourne's CityLink Authority is promoting how superior it will be compared to using existing public transport (eg from Dandenong to the airport). However, that is based on existing public transport infrastructure. Imagine how superior public transport would be compared with roads if the \$3 billion pumped into CityLink had been invested in public transport.

Urban Transport Planning

Urban freeways are a failed 1960s solution to traffic congestion.

A study by the RACV in August 1998 found that Melbourne motorists faced slower travel times during peak periods despite improvements to Melbourne's freeway system. A similar conclusion was reached by the RAA in South Australia in January this year. It found that traffic speeds on some of Adelaide's main arterial routes was below 30 kph.

Linking freeways only creates demand for more freeways, exacerbating congestion and pollution. Who will be the first motorist to sue Melbourne's CityLink Authority when average traffic speeds fall below the guaranteed average of 60 kph because of increased road congestion?

The Victorian Government has \$2.5 billion worth of urban freeways planned that will increase road capacity by 10% over the next few years. Yet the Government acknowledges that this will only retain congestion at current levels. Reducing congestion requires management of motor vehicle demand not satisfaction of motor vehicle demand.

Experience in North America cities that has demonstrated quite clearly that increasing road space to meet traffic demand simply generates more traffic and more congestion. North American cities such as Vancouver, Portland, Toronto, Dallas, Miami and Los Angeles have all given up on freeways and are instead investing, billions of dollars in urban and long distance commuter rail systems as a sustainable solution to traffic congestion and urban mobility.

The UK Department of Environment and Transport issued a Planning and Policy Guidance Statement in March 1994 which said, in part (Guideline 1.4):

"The Government recognises that forecast levels of traffic growth, especially in urban areas, cannot be met in full and that new road building or the upgrading of existing highways will in some cases be environmentally unacceptable. It is already Government policy not to build new trunk or local roads simply to facilitate commuting by car into contested urban centres."

A study in Zurich of freeway construction found that road building does not solve traffic problems: it only achieves short-term amelioration and long term aggravation of the problem. This is because each new high capacity road releases additional traffic onto the network, with traffic generation being exacerbated by better connections between high capacity roads.

Urban freeways lower the value of land along their routes because of the noise and pollution created and lead to dispersed, car based, development patterns.

Urban rail systems, however, generally increase land values along their routes and lead to concentrated development easily accessible by public transport, walking or bicycle. For example, in Washington, DC, the Metrorail suburban rail system "value captured" \$970 million of new development along its corridor in its first three years of operation. This returned \$50 million in local tax revenue.

Examples of overseas cities that have determined that rail services are a more cost-effective solution to road congestion than additional road space are:

- Portland, Oregon: development of a light rail system and replacement of a riverside freeway with a park
- Vancouver, British Columbia: extension of Skytrain elevated railway; new heavy rail commuter service using an existing rail line (75% of the commuter rail users were single occupancy car commuters)
- Dallas: new light rail system; heavy rail service using existing rail line
- Los Angeles: new underground rail; light rail and heavy rail services using existing rail lines (90% of users of Los Angeles' heavy rail commuter services previously commuted by car; the system now carries 8% of Los Angeles' peak hour commuters)
- St Louis: new light rail system
- Miami: new heavy rail commuter service using existing rail lines. (The service was introduced to relieve congestion while a freeway was being rebuilt, but retained and extended because of high ridership)
- San Francisco: extension of the Bay Area Rapid Transit system to new areas, including the airport
- Denver: light rail system
- Salt Lake City: developing light and heavy rail systems
- Zurich: traffic calming, bus lanes, extension to light rail system
- Manchester: extension of existing light rail network
- Sheffield: light rail system
- Stockholm: extension of heavy rail system
- Newcastle upon Tyne: extension of existing light rail network

These cities clearly demonstrate that the present pro-freeway policies of Australian cities is out of step with world trends. For our economic and environmental future, Australian Governments need to take a leadership role in minimising car use in urban areas, especially single occupancy car use for peak hour commuting.

Adelaide - the Orphan City

Cities around the world are expanding and upgrading their urban rail and light rail networks and this is reflected in patronage use. In 1997/98, the London Underground had an 8% patronage increase while patronage on light rail services increased 7% increase. In the US, heavy rail services had a 5.5% patronage increase, light rail patronage increased 6.3% and outer-urban commuter rail patronage increased 5.4%.

This trend is being repeated in Australian capital cities. Total urban rail patronage has increased nearly 20% over the past decade - except in Adelaide. Last year, TransAdelaide officially broke through the 8 million passenger barrier - backwards.

Electrification and service upgrading of Perth's metropolitan rail system in the early 1990s has seen patronage more than triple from 8 million passengers to 29 million passengers per year. Perth has just four lines, including the Northern Suburbs Railway (NSR) that alone carries 9 million passengers per year - over 1 million more than use the entire six line Adelaide suburban rail system. Why? The answers are simple:

- Fast, frequent services. NSR services operate at 110 kph, easily overtaking cars on the parallel freeway, and operate at 5 minute headways in peak periods.
- Limited stop peak rail services cover the line's 30 kilometres in just 20 minutes.
- Integrated rail and bus services. An excellent feeder bus service provides frequent services connecting surrounding low-density housing areas with rail services. Modal interchanges are as seamless as possible minimising transfer time between buses and trains.
- Excellent passenger information and user-friendly ticket machines. All stations have maps, timetables and ticket machines.
- Enhanced passenger safety with on-train video surveillance and regular patrols by customer service officers.

These measures are not rocket science. They are commonsense if Governments are serious about increasing urban public transport use.

The Tonsley line is a classic example of the lost opportunities of the Adelaide suburban rail system. This line terminates a frustratingly short 1 kilometre from Flinders University and the Flinders Medical Centre. It is so near, yet so very far from these two major traffic generators. The line is presently a wasted asset because it only provides weekday peak hour services. The opportunity to remove thousands of car trips off Adelaide's roads each day is being lost.

Melbourne's new urban rail franchisees, by contrast, have factored in patronage increases of 40-80% over their 10-15 year franchises. This will only be achieved through service enhancements - faster, more frequent services, extensions to outer areas - and improved marketing.

Adelaide could be part of this trend too, but the South Australian Government claims it cannot afford to upgrade the Adelaide suburban rail network. However, it can afford to build the \$150 million one-way reversible Southern Expressway to serve commuters in the south. This is not an intelligent transport system. That amount of money is more than sufficient to provide faster, more frequent suburban rail services including extending the tram line to North Terrace and the main railway station. These are far more intelligent solutions for peak period travel in Adelaide than an unintelligent reversible road.

The benefits of the Southern Expressway are claimed to be:

- reduced travel times
- reduced driver stress
- reduced vehicle operating costs
- reduced accident costs
- job creation

However, these benefits are already provided by the existing parallel railway line. Referring again to the RAA study of January this year, it found that the Southern Expressway had reduced travel times by only 2-3 minutes during peak period. The report went on to say that the promised 10 minute travel time reduction once the Expressway was completed was 'difficult to imagine'.

So much for the much vaunted intelligent road system.

New Tax System

The Federal Government allocated \$50 million in its last budget to improve urban air quality, but is introducing a tax system that will worsen urban air quality.

The New Tax System will increase public transport fares by 5-10%, a fact recently acknowledged by the Victorian Government. Simultaneously, Toyota anticipates that new car prices will drop by over 6%. These price effects combined with businesses being able to claim a 7 cents per litre tax credit on petrol used for business purposes are regressive measures that will discourage public transport use and increase car use in urban areas. Taxation reform will further skew the tax system in favour of motorists.

In contrast, most European countries either zero rate public transport or apply a reduced rate.

Taxation reform has also failed to address present Fringe Benefits Tax inequities that favour car use over public transport.

The Fringe Benefits Tax applying to motor cars as part of salary packages is approximately 10% of the vehicle's purchase price. The FBT applying to a public transport ticket is approximately 95% of the ticket price. This policy creates a significant disincentive for companies to include public transport fares in salary packages and encourages greater use of company cars for commuter use.

Company and government cars presently comprise 40% of peak hour traffic and 20% of all traffic, significant contribution to urban road congestion and road demand.

Lowering the FBT applying to public transport fares to the same level as that applying to cars consistent with the Federal Government's greenhouse reduction strategies one of which is to develop solar packaging arrangements which are neutral with respect to employee choice of transport.

Conclusion

The Vice-President of the World Bank said in 1993 that Australia and the US have become too dependent on private cars and have neglected public transport. At the Kyoto greenhouse summit, the key groups representing 130 motoring organisations around the world claimed that reductions in government spending on public transport systems have led to increased car use in industrialised countries.

"If we invested half as much in our rail network as we do in our roads, rail could easily take a lot of the burden off our road system"

Victorian Public Transport Minister, Robin Cooper, August 1999

Integrated transport planning means more than the intersection of two freeways. It means evaluating all transport projects equally. Not applying narrow cost/revenue analysis to rail projects, but applying broader social cost-benefit criteria to roads. Maximising transport efficiency and minimising transport costs requires balanced transport planning and investment.

Australia's urban rail services provide significant economic and environmental benefits to all members of the community, not just public transport users.

The benefits of urban rail services include less land use required for transport, reduced road congestion, lower road construction and maintenance costs, fewer car parks, fewer road accidents reduced pollution and greenhouse gas emissions from cars, less energy use and greater mobility disadvantaged groups and people without cars. Funding of urban rail services is an investment not a subsidy.

Thank you

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