

## INQUIRY INTO SUSTAINABLE CITIES

### INTRODUCTION

The Railway Technical Society of Australasia (RTSA) is a technical society of Engineers Australia. The RTSA now has over 800 members and hosted a major Conference on Railway Engineering in November 2002 at Wollongong with over 400 participants. The present submission outlines member concerns and draws on submissions to various Federal and State transport inquiries (including in 2003 to the Federal Government in response to its AusLink Green Paper and the NSW Ministerial Inquiry into Public Transport).

The RTSA has also prepared several brochures including 'Fix the rails - NSW', 'Getting Sydney Back on Track', and 'Rail for sustainable cities'.

We note that the present Inquiry is to consider:

- 1 The environmental and social impacts of sprawling urban development;
- 2 The major determinants of urban settlement patterns and desirable patterns of development for the growth of Australian cities;
- 3 A 'blueprint' for ecologically sustainable patterns of settlement, with particular reference to eco-efficiency and equity in the provision of services and infrastructure;
- 4 Measures to reduce the environmental, social and economic costs of continuing urban expansion; and
- 5 Mechanisms for the Commonwealth to bring about urban development reform and promote ecologically sustainable patterns of settlement.

In addition, the Discussion Paper gives a number of "Questions for Consideration" re transport. Along with general comment, plus comment on external costs, this submission shall give particular attention to:

- ☐ *What initiatives can assist in the reduction of automobile dependence?*
- ☐ *What are the features needed in new settlement areas to encourage more diverse and sustainable transport networks?*
- ☐ *What is the role of federal government in assisting metropolitan areas to restructure transport networks in line with more sustainable settlement patterns?*
- ☐ *What are the needs of transport systems for them to be equitable, accessible and economically viable?*
- ☐ *What are the transport logistic needs of industry and how can these be managed in a sustainable city?*

## 1 LOOKING AT AUSTRALIA'S LARGEST CITY

Sydney is Australia's largest city and is experiencing strong growth. To quote from the NSW Department of Planning, in 2002 the Sydney Region housed 4.2 million people (including 300,000 in the Central Coast) with an additional 770,000 in the Lower Hunter and Illawarra (making up a Greater Metropolitan Region of 4.9 million people). *"The Sydney Region population has been growing recently at an average of just over 1% or 48,000 each year. The Sydney Region is likely to reach 4.5 million somewhere between 2006 and 2011 while the Greater Metropolitan Region as a whole will top 5.3 million."*

The Society recognises that most passenger movements within Sydney are by car, and notes that car using is growing. Moreover, all road vehicles travelled about 31.2 billion kilometres (bkm) within Sydney in the 12 months ended 31 October 2001 as against some 25 bkm in 1991 (ABS SMVU cat.no 9208.0) - **up about 25 per cent within a decade.**

In the late 1990s, increases in passenger train usage were growing faster than the population, at about 3.0 per cent per annum (from 1998-99 to 1999-00 it grew to a total of 278.7 million journeys). Some lines such as the Illawarra line feel the growth pressure more than others. The 2003 State Rail submission to the 2003 IPART inquiry notes there were 276.4 million journeys in 2001-02 and on page 9 a graph is given that shows fluctuating patronage, with a fall off that continued to 2002-03 (to about 272 million journeys) and a note that: *"CityRail patronage has grown by 20 million journeys since 1990 and 42 million journeys since the low experienced during the 1992 recession. ... "Periods of falling patronage in 1975/8, 1991/2 and 2001/2 correspond with periods of national economic downturn, improved road networks and the increased affordability of cars after the introduction of GST in 2000."*

### 1.1 Sydney's Urban Rail System

On February 25 2002, the Sydney Morning Herald's front page started with an article ***Exposed: fast track to rail chaos***

*"Sydney's rail system is perilously close to 'strangulation' because of soaring passenger numbers and recurring track and train faults, confidential reports warn.*

*"The findings, kept secret for more than a year, say "operational paralysis" can be avoided only by adding new lines and up to 80 stations, buying 770 carriages worth \$2.2 billion and spending at least \$20 billion in the next decade on urgent maintenance.*

*"The State Government has suppressed the documents, written last year by its former rail supremo Ron Christie, because of their explosive revelations about the deteriorating network, CBD congestion and safety concerns. ..."*

As a former senior rail executive and NSW Roads and Traffic Authority (RTA) Chief Executive, Mr Ron Christie was well qualified to comment on Sydney's future transport needs. He was also saying what many people had been thinking for some time.

For some years, the NSW Government has been reluctant to raise rail fares. However, the interim report of the NSW Ministerial Inquiry into Public Transport has recognised the need for fare increases along with upgrading the rail system. This is needed to cater for growth or attract new patronage with a view to reducing high road vehicle external costs.

As an extension to the Infrastructure Report Card published in July 2001 by the Engineer, Australia, a RTSA Forward Vision Task Force (at [www.rtsa.com.au](http://www.rtsa.com.au)) gave the **Sydney City Rail System a C - rating** in its 2002 Report 'Rail in the next decade - where to and how ?' (see Daily Telegraph, 21 May 2002). This rating indicates that major changes are required, and is a long way behind Perth's A- rating.

We attach as Appendix A the covering letter from Mr Christie to the Long-term Strategic Plan for Rail. This was released to the NSW Legislative Council in May 2002.

## **1.2 Rolling Stock**

Delays have occurred with delivery of the new Millennium trains, with problems leading to withdrawal from service of new train sets during 2003. As noted by the Christie report, some of the present Tulloch rolling stock goes back to the 1960s. This older rolling stock will not last forever.

## **1.3 Greater metropolitan region rail track upgrading and expansion**

Along with an Olympic Park overpass, opening of the Airport line in 2000, completion of Dapto - Kiama electrification in 2001, quadruplication of Turrella to Kingsgrove (Airport and East Hills Lines) tracks - and the long awaited Millennium train, the 1998 NSW Government statement *Action for Transport 2010* lists a number of rail projects for completion by 2010. These include:

Parramatta Rail Link by 2006

Newcastle to Sydney - High Speed Rail Link; Stage 1 Hornsby to Warnervale by 2007

High speed rail link; Waterfall - Thirroul tunnel prior to 2010

Completion of Maldon Port Kembla railway (subject to some Federal/private funding)

Epping to Castle Hill rail by 2010 (underground - 7 km - \$350 million)

Priority freight line from Macarthur to Chullora and to Cowan.

*Action for Transport 2010* notes studies to be undertaken for a Fassifern - Hexham rail bypass, and a rail tunnel under the Little Liverpool Ranges. The 1998 document has little or nothing about the proposed Inland Route from Melbourne via Parkes to Brisbane, where a pre-feasibility study received a Federal grant of \$300,000 in mid 1998.

Clearly, it is now most unlikely that Stage 1 of a Newcastle to Sydney High Speed Rail Link can be completed by 2007 - which is now only three or four years away. Detailed planning has yet to advance to land acquisition and environmental impact assessment. At the present rate of progress, the Western Orbital will be built before construction on these rail projects is advanced. One reason for this major road proceeding is that the May 2000 Federal Government budget gave \$10 million for planning on Sydney's Western Orbital, and in January 2001 promised \$350 million towards its construction.

We look at Federal Government funding for rail and public transport later in Section 3 of this submission

In addition, *Action for Transport 2010* notes plans for new rail lines between 2010 and 2020 as follows:

Complete Stage 2 Hornsby to Newcastle rail upgrade

Complete the Hurstville to Strathfield line

Northern Beaches line from Chatswood to Dee Why

Southern Beaches line from Bondi Jn to Maroubra

North West line extension from Castle Hill to Rouse Hill

The need to upgrade tracks and signal systems is recognised by the NSW Government in earlier statements. However, much of this track and signal work has been deferred from earlier years.

The replacement of the Parramatta - Chatswood railway by a 15.5km Epping - Chatswood railway at \$800 million for completion by 2008 - two years later than indicated in *Action for Transport 2010* - also indicates a need for more funds to upgrade track.

The need for augmentation of track capacity within and near Sydney would appear to include consideration of; in addition to those items listed above:

- A. Chatswood - Wynyard quadruplication; involving taking over two lanes on the Eastern side of the Sydney Harbour Bridge.

- B. A Sydney rail freight bypass;
- C. Hurstville – Mortdale triplication;
- D. Completion of the Maldon – Port Kembla Railway;
- E. Hornsby – Gosford track straightening;
- F. Quadruplication of the line to East Hills.

These items are not an 'engineers wish list', but reflect the need to extend the system to cater for future growth as per reports including *Action for Transport 2010*.

In addition, it is in the interests of both freight and passenger train operators that there be a much improved separation of trains in the Sydney area.

#### 1.4 Short North line

Getting high-speed trains between Sydney's Central Station and the Hunter region is a major challenge. Although detailed preliminary work was (is?) underway for Hornsby-Warnervale track upgrading (with a 2001-02 \$1 million and a 2002-03 \$2 million NSW budget allocation for planning), it is now all but impossible to meet the initial completion year of 2007. Failure to complete a Newcastle High Speed Line for passengers will result in increasing pressures to augment the Sydney - Newcastle freeway from 4 to 6 lanes (and, in another decade, from 6 to 8 lanes). Clearly, full Federal funding of the Sydney - Newcastle freeway with the absence of road tolls, and no Federal funding for the Sydney - Newcastle railway, has resulted over time in a major distortion in travel choice.

The nature of track upgrading between Hornsby and Hexham will have implications for improving both Sydney - Gosford - Newcastle CityTrain services and high speed intercity rail services. With increasing traffic density, it is desirable to make provision for future separation of freight and passenger trains between Hornsby and Gosford. In this case, on the Cowan bank, it would be possible to construct a passenger line with steeper ruling gradients at much less cost than a passenger line with easier gradients that is likely to require extensive tunnelling.

The construction of a Fassifern – Hexham bypass would also improve future separation of freight and passenger trains near Newcastle.

#### 1.5 Sydney Airport link services

One area of service where appreciably higher Sydney urban fares are now under trial is travel involving the use of any of the two airport stations and two nearby stations (Mascot and Green Square). The higher fares, coupled with other factors, have resulted in

patronage being well below expectations, and an associated private company in receivership.

Other factors worth examination include:

- a) The lack of purpose-built 'user friendly' rolling stock to operate between the two airports and nearby stations, and central and city loop stations.

By "user friendly rolling stock" is meant single-decker carriages with luggage platforms near doors.

The use of such trains, together with the option of using regular East Hills/Macarthur trains (albeit packed with people at peak hours) would assist in building patronage. The cost of two or three such four-car sets would be small compared with the costs of the new stations.

- b) The relatively limited and small signage at both airports which could be changed to indicate that there is a train option, how good it is, and where it is. How good it is would include guaranteed maximum waiting time (e.g. trains every ten minutes or in the case of the new Brisbane line, every 15 minutes). Or even give real time information.
- c) The limited and small signage at Central and City Loop stations; with lack of active indicator boards at each station.

Re Wynyard station: Although all trains for the airport may leave Platform 6, not all trains leaving Platform 6 at Wynyard go on the Airport Line.

- d) Re platform confusion at Central, it is suggested that Platform 23 be a dedicated "air train" platform, with special signage and murals. All other suburban platforms including Platform 22 could have signage indicating a change is needed here for the air train.

- e) Re connection with Sutherland Shire and the South Coast, there is NO encouragement for people from the South Coast and Cronulla lines to use the train to the airport, because trains from these lines do not stop at Wolli Creek.

Pending introduction of measures such as above, and boosting of patronage to the new stations, it is recommended that the fares to the special stations be lowered by at least one dollar, and a publicity campaign be launched to induce:

- A) people who have not tried the new service to try it; and,
- B) people who have already tried the present airport line service and been "turned off" to try it again.



## 2 ENHANCING OPTIMAL PUBLIC TRANSPORT USE

A major challenge is to ensure that urban rail will be sufficiently developed in all mainland State capital cities to allow it to increase its share of urban passenger kilometers from the present 5 per cent. There is also the scope to develop Regional Fast Rail to serve both Canberra and Sydney.

In all Australian capital cities, passenger road vehicle use increased from about 67 billion kilometres (bkm) in 1991 to about 85 bkm in 2001 – an increase of some 27 per cent. A further such increase over the next decade would severely impact on Sydney's amenity. Already, as outlined below and in Appendix B, the use of motor vehicles in Australia's capital cities is causing major problems. Hence the development of initiatives by State Governments to promote alternatives to road vehicle use. One notable example is with the stated aim of the Government of Victoria to encourage 20 per cent of all Melbourne's passenger journeys by 2020 to be by walking, cycling or public transport.

Action for Transport 2010 as released by the NSW Government in 1998 was a step to improve public transport in Sydney. Franchising in Victoria of Melbourne's trains and trams was another bold move. However, five years later, it is obvious that more measures are required. These measures will need to include road pricing, with particular attention to congestion pricing.

### 2.1 Road pricing

One funding option is a traffic demand charge in central Sydney, and the centres of other mainland capital cities, where a portion of the revenue would go to urban transport systems. The RTSA would support the investigation of such a proposal. One of the elements, which is likely to appear from any such investigation, is that for such a system to operate effectively, there needs to be an efficient public transport system. This was clearly shown in Singapore. However, as shown by the congestion-pricing scheme introduced in London in February 2003, there is latent acceptance of movement to a more rational approach to road pricing.

The 2002 State Rail submission to IPART noted in part comment by IPART (2001), *"the real world experience of road pricing is of continual non implementation"*. *"Given that road use pricing does not reflect the full external cost of road use, it is appropriate that the external benefits of rail be reflected in rail pricing"*.

A further option is that the **Productivity Commission be requested to hold a full inquiry into urban transport**. The Industry Commission released in 1994 a significant

report on urban transport and in response, the then Federal Government agreed to hold a further inquiry within three years. However, the new inquiry is yet to take place. A new inquiry could also usefully address the topics of road provision funding and pricing that were favoured by the Productivity Commission in its 1999 report on progress in rail reform.

## 2.2 Comment on External Costs

We note that section 2.6 'External benefits of rail' of the 2003 StateRail submission to IPART states, inter alia, *"A peak CityRail train can carry 2,400 passengers throughout its journey and over 1,200 passengers at the peak maximum loading point, usually approaching the CBD. Two trains can move as many people as an hour of peak traffic on one lane of freeway or 35 fully laden buses."*

*"These benefits are particularly significant for large employment centres such as the Sydney CBD. Without the extensive rail services currently provided by CityRail the city would need to provide an additional 100,000 car parking spaces and 1,700 additional buses. The congestion and environmental cost would also be significant. Air and noise pollution would increase significantly without the extensive rail system servicing Sydney."*

We also note that section 2.9 states that a further study "Value of CityRail to the Community of NSW" is under way. Further comment on external costs is given in Appendix B.

In a BTRE paper "The economic consequences of the health effects of transport emissions in Australian capital cities" presented to the recent Australian Transport Research Forum in Wellington, New Zealand, mid range estimates for the cost of adverse health impacts due to air pollution amounting to \$3.3 billion for the year 2000 were given. This comprises \$1.6 billion for mortality (premature death as a result of air pollution) and \$1.7 billion for morbidity (quality of life and productive capacity of people impaired or reduced). Estimates from the Australian Bureau of Statistics Survey of Motor Vehicle Usage coupled with the BTRE mid range estimates for each capital city are shown in the following table, along with the average cost per vehicle kilometre.

This Table suggests that if you live in Sydney, when an average vehicle goes by, it is generating community health costs of 4.8 cents per vehicle kilometre. This cost will be higher for heavy trucks, and smaller for cars. To this may be added the Australian average road crash cost per vehicle of about 8 cents per km (using the now older BTRE estimate of \$15 billion as the cost of road crashes per year), and the ABS total of about 188 billion



kilometres driven by all vehicles in 2000, the average road crash cost is about 8 cents per kilometre. It would simply not occur to most people, when getting in their cars, and starting to drive that the average road crash cost is the same order as the cost of petrol.

### Vehicle kilometres and health costs for Capital cities

	ABS MVkm	BTRE cents/vkm \$m	
Sydney	31305	1498	4.8
Melbourne	30313	914	3.0
Brisbane	14928	420	2.8
Adelaide	7866	222	2.8
Perth	11053	214	1.9
Hobart	1666	15	0.9
Darwin	802	15	1.9
Canberra	2450	na	
All Capital Cities	100383	12750	3.3

### 3 FUNDING OPTIONS

Most urban public transport operations within Australia now require significant state government support. For example, a SRA submission notes that the NSW Government pays for most of the difference between the cost of running the suburban rail network, and the fare box revenue. *"This cost \$1.3 billion in 2001-02 and is forecast to grow to \$1.5 billion in 2002-03. In 1999-00 fares paid for 26.7 per cent of the costs of running the suburban rail system. Last year that had fallen to 24.0% and is forecast to fall further this year to 21.7%."*

The RTSA supports a move towards service quality improvements, and increasing fare box revenue with a view to generating more funding for long overdue infrastructure upgrades. However, CityRail fares are constrained, not only by political factors, but also low road pricing.

We have suggested that City Rail should be seeking larger increases, and that State Rail should be making a much better case for such increases.

It is further submitted that the additional revenue should be used to improve the rail infrastructure. It is appreciated that it may be necessary to effect service **improvements and increases in road pricing** to allow CityRail fares to appreciably rise.

Declining rail service levels have given rise to proposals such as those of the Sydney Morning Herald in its Blueprint Series of 12 March 2003 of adding an additional \$1 to each fare, with less for concession fares. With 276.4 million passengers in 2001-2002 (as per CityRail's 2002 Annual Report), this would give a welcome boost to CityRail's capital works budget. The budget amount of \$402.6 million in 2003-04 (with \$119.4 million towards the Parramatta Rail Link project) is clearly inadequate, and also compares unfavourably with Queensland Rail's forecast capital expenditure for 2003-04 of \$614.8 million that includes track infrastructure works of \$412.5 million

### **3.1 Other revenue sources**

While there are many proposals to physically improve the rail system there is a need to develop funding arrangements which will provide resources to enable urban rail development. There is a need to think outside the square of current government funding arrangements. The Committee is invited to consider recommending to government that it consider alternate means of funding the expansion and upgrading of urban rail systems, or supplementing the existing funding sources. One example is from Paris where a specific tax is imposed on employers to fund the Metro and commuter rail systems.

### **3.2 A role for the Federal Government**

We address in part the question *What is the role of federal government in assisting metropolitan areas to restructure transport networks in line with more sustainable settlement patterns?*

It is becoming increasingly obvious that we have major road traffic problems in our major cities. In the United States, over 20 per cent of Federal land transport funds are applied to urban public transport (mass transit). In addition, in New York about \$800 million a year of vehicle tolls are used to assist New York City Transit's current \$11.5 billion five year capital works programme.

The situation in Australia is very different. As noted in Appendix C, Federal funding to the States for urban public transport programs administered by the Department of Transport that commenced in 1974 has been characterised by no fewer than two interruptions in funding in 1981-82 and 1989-90 with the cessation of such funding in 1993 when the 'Building Better Cities' was underway. However, even this funding ceased in 1996. The total Federal outlay in 1999 terms between 1974 and 1999 on urban public transport programs was \$1.5 billion (Appendix C) with a lesser amount for rail capital