

Investing in clean air

Selling the Commonwealth on the need to fund bicycle infrastructure

The Federal Government is soon to prepare a national strategy dealing with all aspects of public infrastructure, including transport infrastructure. The car and roads lobby have already begun submissions to Canberra for more roads and freeways. As **Alan A. Parker** argues, the present formative stage of the strategy is the time to put the case for bicycle infrastructure as a clean, economically productive and essential component of urban development.

The Federal Government, in its Urban and Regional Development Review process, is looking at the need to increase spending on public infrastructure. The current view is that public infrastructure has been allowed to decline from 8.7% of GDP in 1961 to an unacceptably low level of 4.3% of GDP in 1994, and is now undermining economic efficiency (DHRD Jan 1985). It is now widely believed that Australia must put more transport infrastructure in place and make better use of that investment.

It is also well known that Japan, West Germany, the Netherlands and Scandinavia have benefited greatly from high levels of investment in general transport infrastructure. However, what is not well understood is that in all these countries there are much higher levels of bicycle use precisely because they have invested so much more in their bicycle infrastructure than Australia has.

There is little awareness in Australia that the constraint of road building and car use has greatly assisted in Japan's post-war economic development. In Japan bicycle facilities are regarded as a productive transport infrastructure investment. By contrast, Australian government economists regard bicycles as recreational toys, and non-motorised travel is associated with a lower level of economic development. These irrational biases obscure the fact that Australia has an advantage over countries with winter ice and snow constraining bicycle use. This advantage presents us

Infrastructure: Facilities such as telephone lines, electricity connections, roads and cycle networks which serve the public and are usually provided or regulated by government.



a Japanese automated bicycle warehouse located over a railway station provides thief-proof storage for over 1,500 bicycles.

with the opportunity to substitute bicycle trips for a larger proportion of short car trips than many countries in the northern hemisphere.

The government is more likely to provide an assured long-term funding mechanism if bicycle facilities are recognised as an essential component of a healthy economy.

In those European cities that are the most energy efficient the car is used less because 15% or more of all trips are made by bicycle and a similar proportion of all trips by public transport. This is true in Amsterdam, The Hague, Munich, Hanover, Bremen and Copenhagen. In addition to point to point bicycle trips, bike/rail trips substitute for long urban car trips.

There is nothing new in national governments building up bicycle infrastructure to provide a level and quality of service that is in the national economic interest. The Netherlands government funded regional and local government to maintain and improve bicycle infrastructure from 1977 to 1989 with an investment of around \$150 million per year (1990 prices). This increased bicycle travel from 10 billion kilometres in 1977 to 12.8 billion kilometres in 1991.

Because the urban population of the Netherlands and Australia are very similar these figures are convenient for developing a useful rule of thumb for bicycle infrastructure funding. By spending around \$1 billion the Netherlands national government generated

nearly twice the bicycle kilometres (2.8 billion kms) than is currently ridden in all Australian urban areas today. This represents a saving since 1985 of over \$1 billion every year. That saving will continue and increase for many years if the bikeway networks are maintained as planned. It is therefore a reasonable estimate that if any other national government in the developed world seriously intends to encourage bicycle use it will have to invest around \$10 per person per year on bicycle infrastructure for at least ten years (1990 prices).

Long-term observation of such culturally diverse countries as Japan and the Netherlands suggests that high levels of bicycle use take decades to generate, and are more associated with investment in bicycle facilities than so called "bicycle culture". Just as high speed road networks generate car traffic, bikeway networks generate bicycle traffic. Recognising this relationship between the level of available infrastructure and its level of use is essential to developing the most economically beneficial long-term transport behaviour.

Bicycles were an important transport asset during Japan's postwar reconstruction because a high proportion of roads and railways had been damaged or destroyed. By 1980 over 50 million bicycles were regularly used for practical purposes and still are today. Cities grew very fast and trips to work increased greatly in length and the bike/rail trip substituted for many direct bicycle trips to work. Bicycle and bike/rail trips account for 20% of all trips to work and a high proportion of school and shopping trips. Three million cyclists access stations to make long commutes Australians would make by car. Secure bicycle parking spaces at stations provided since 1975 are valued at A\$3.5 billion (1990 prices).

The bicycle is very well integrated into the transport system and there are long term

plans for that integration to continue. Japanese demand management, limited car parking, traffic calming and 30 kph speed limits on most urban roads, encourage public transport, walking and bicycling.

One economist (HOOK, 1994) has analysed the impressive performance of the Japanese economy since World War II and has this to say about the importance of non-motorised travel:

"Japan's decision to discourage the use of the private automobile and encourage the use of rail based mass transit and non-motorised modes was part of a broader policy to nurture its domestic industries, constrain consumption and encourage savings and minimise the costs of inputs to industry...By minimising aggregate transportation costs, Japan has been able to minimise their production costs,

backwardness, is rather more a symbol of a society able to meet its passenger transport needs in the most cost effective and least environmentally damaging way, allowing scarce economic resources to be invested elsewhere."

Australia currently uses nearly three times as much of its GNP for transportation than Japan, most of which is wasted in urban car travel. More importantly, the Japanese have demonstrated that investing in bicycle infrastructure helps make a country more competitive.

Australian data for bicycle trips to work clearly shows that apart from a few inner suburbs and provincial cities the growth of bicycle transport is negligible. In postwar urban Australia around 10% of commuters were cyclists but by 1971 only 0.9% of cap-

Urban passenger transport is a very expensive activity that generates a lot of hidden costs due to accidents, pollution, noise, congestion and greenhouse gas emissions

making their goods more competitive in international markets. Further by discouraging the use of automobiles and encouraging savings, a larger pool of potential investment capital was created... and encouraged investments in modern technology.

The automobile, far from being a symbol of economic prowess, is rather more a symbol of economic assets being wasted on consumption instead of job-creating and productivity-increasing investment. Meanwhile the bicycle, far from being a symbol of economic

ital city trips to work were by bicycle and today is just over 2%. Compare this to 20% in Japan, and 28% in the Netherlands. Another indicator of our underdeveloped cycleway networks is that so few women choose to cycle to work (see Graph 1). Another problem is that cyclists are banned from many high speed road routes with no equally convenient safe alternative routes.

In Australia bicycle commuting is only regarded as being safe by a minority of young fit adult males and is perceived as being distinctly unsafe by the majority of young females who are wary of stressful traffic conditions and discourteous drivers. In the Netherlands bikeway networks are designed to be used by all ages and both sexes with good lighting to make all cyclists feel more secure. In contrast the need for personal security does not even get a mention in the Austroads bikeway design manual.

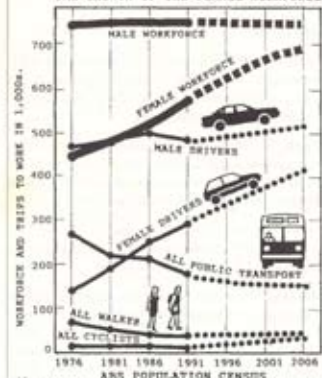
The bicycle infrastructure in our cities is seriously deficient. It seems incongruous, then, that the State bicycle committees, with one exception in WA, are not stating the case for bicycle infrastructure. Why are the big city bicycle plans so ineffectual, failing to define many of the barriers to bicycle travel that have to be overcome in the long term? The causes are not important, but what cyclists need to know is that progress will always be slow unless cycling organisations lobby federal politicians directly to get funding to build up the bicycle infrastructure at a much faster rate.

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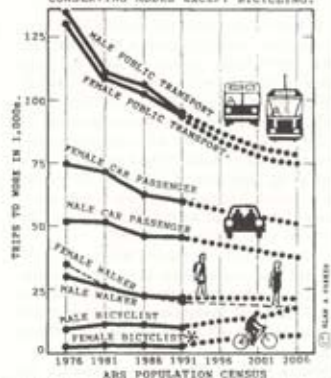
ECOLOGICALLY UNSUSTAINABLE COMMUTING TRENDS

MELBOURNE TRIPS TO WORK 1976 TO 2006. TAXIS AND MOTOR CYCLES OMITTED FOR CLARITY. SOURCE: ABS POPULATION CENSUS 1976 TO 1991.

THE OVER USE OF CARS IS DRIVEN BY THE GROWTH OF THE FEMALE WORKFORCE



THE DECLINE OF ALL THE ENERGY CONSERVING MODES EXCEPT BICYCLING.



* On Census day 50% of rain fell before 9am and it was windy with showers the rest of the day.

Billions are now allocated to building freeways and road tunnels in Sydney and Melbourne that will generate even more driving and pollution. The unsustainable transport trends in Melbourne are shown on Graph 1. Similar trends apply in all our capital cities.

There are solutions, of course, and the kind of changes required in transport behaviour are easy enough to visualise. Graph 2 shows changes in commuting travel patterns in Melbourne required to move towards a much more sustainable future including a big increase in rail use, much of which would come from using bicycles to access stations. The bicycle trips shown do not include these bicycle trips to the station. Graph 2 shows a situation where per capita motor vehicle use is not reduced but merely constrained to today's levels by the year 2005, so that improvements in motor vehicle fuel consumption and reduced emissions are not swallowed up by the large predicted increase in car use shown on graph 1. After 2005 the positive trends shown in Graph 2 could continue for many years.

There is a need to convince bureaucrats and politicians that investing in bicycle infrastructure is best done as part of a package of transport infrastructure measures designed to stabilise per capita use of motor vehicles. It is unfortunate that the Commonwealth publication *Green Cities* fails to objectively define the potential of the bicycle in improving the urban environment (DHRD May 1995). How one could possibly have a Green city without high levels of bicycle use defies comprehension.

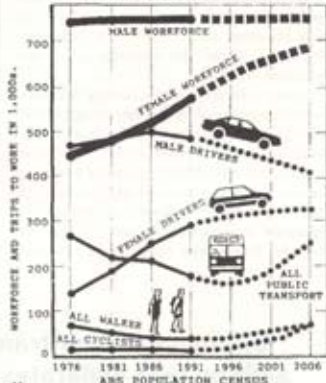
To date, our bicycle friendly climate has not even been recognised as a transport asset. There is a need to demonstrate that our mild climate is an important transport asset that would maximise the benefits of providing bicycle infrastructure and reduce transport costs. Australian cyclists have been complaining about the dumping of the National Bicycle Strategy (NBS), though this document had no funding provisions and was never supported by the Minister for the Environment or the ALP environment caucus, let alone approved by Cabinet. The transport bureaucrats only went along with it because they knew that the incoming federal minister for gridlock Laurie Breerton or his Liberal equivalent would choose to bury it anyway, which is exactly what Breerton did.

The nearest the Commonwealth has come to having an integrated transport policy that recognises the bicycle as a means of transport is the Public Transport Strategy put out by the Department of Housing and Regional Development (DHRD Jan 1995). This Strategy contains a package of recommendations to encourage bicycle use and to integrate the bicycle with the public transport system. Many of the bicycle recommendations originate in a joint submission made by the Bicycle Federation of Australia, BITA, the Town and Country Planning Association and Retail Cycle Traders Australia. Unfortunately the strategy did not consider funding or cycling generally. Now that a national transport infrastructure strategy is likely to be prepared

ECOLOGICALLY SUSTAINABLE COMMUTING TRENDS

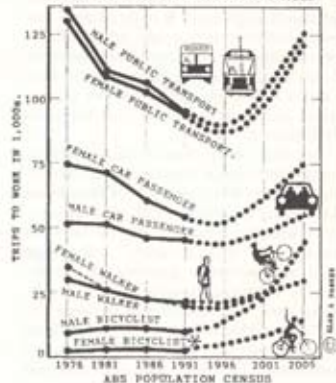
MELBOURNE TRIPS TO WORK 1976 TO 2006. TAXIS AND MOTOR CYCLES OMITTED FOR CLARITY. SOURCE: ABS POPULATION CENSUS 1976 TO 1991.

THE OVER USE OF CARS IS CONSTRAINED BY NEW DEMAND MANAGEMENT MEASURES



* On Census Day Sun of rain fell before Sun and it was windy with showers the rest of the day.

NEW TRANSPORT INITIATIVES BOOST THE USE OF THE ENERGY CONSERVING MODES.



by the same department an opportunity exists to propose Commonwealth funding for the necessary bicycle infrastructure to implement these recommendations.

Building around the barriers to bicycle travel is not cheap. For example in Melbourne, after ten years of waiting, the 500 metre connection from the Yarra River bicycle path to the bicycle path alternative route along the South Eastern freeway will cost \$3.6 million when complete. In our cities there are hundreds of barriers to bicycle traffic that have to be breached and hundred of opportunities to encourage cycling by providing exclusive short cuts for cyclists through the barriers to motor vehicle traffic. When more trips can be made more directly and conveniently by bicycle than by car more people choose to use bicycles.

There is an economic case for the Commonwealth government investing \$1 billion, in a catch-up funding programme over ten years. The net benefit of substituting one billion single occupant car-km with one billion bicycle-km could be around \$600 million a year (*Green Economics*, *Cyclist*, Feb/Mar 1995). Some further research has been done to firm up the economic case (Parker, 1995) but in addressing future bicycle infrastructure needs two key questions arise.

Firstly, what are the key areas of investment needed to build up and sustain bicycle use in the long term at a level of 20% of all urban trips? And secondly, how much investment do we need to provide to create the bicycle infrastructure required?

Both of these questions have to be answered and documented in a bicycle infrastructure plan. After the next election we need an initial Commonwealth commitment to invest \$100 million in the next two financial years and a commitment to produce a National Bicycle Infrastructure plan for the next ten years. The Commonwealth Govern-

ment should establish a national Bicycle Planning Group to ensure that the states spend the funds available, research and develop national pilot programmes, and coordinate the development of the National Bicycle Infrastructure Plan. The best model for this is the national team implementing the Netherlands Master Bicycle Plan, whose research work is published in English (C.R.O.W No 9).

There is a real chance of getting a commitment from the Commonwealth if the bicycle movement coordinates its lobbying efforts. For example, the policy making forums of the Liberal and Labor Parties need to be targeted. The support of the Greens, Democrats and Independents who will control the senate is also needed. The policy making forums and journals of the transport and land use planners need to be used as conduits to express the technical details of the case for the Commonwealth funding of bicycle infrastructure. In October or November there is likely to be a general election. The time to start taking these actions is now.

References

- C.R.O.W. (1991), *Record 9, Cycling in the City, Pedalling in the Polder*, Centre for Research and Contract Standardisation in Civil and Traffic Engineering, The Netherlands.
- HOOK, W. 1994. *The evolution of Japanese Urban Transportation and Non-motorised Transport*, Paper No. 940954, Transport Research Board 73rd Annual Meeting, Jan 9-13 1994 Washington DC.
- Parker, A.A. 1995. *Green Economics*, Urban Futures, 18 June 1995, Commonwealth Department of Housing and Regional Development.
- DHRD. Publications of Commonwealth Department of Housing and Regional Development. *Investing in infrastructure*, Workshop Paper #5, Jan, 1995. *Timetabling for tomorrow, An agenda for public transport in Australia*, Strategy Paper #2, Feb, 1995. *Green Cities*, Strategy Paper #3, May 1995.