



People for Ecologically Sustainable Transport

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**Submission to the Senate Inquiry into Passenger Transport.
 World oil prices are increasing the demand for more
 passenger transport and there is a need to enhance bicycle
 and electric bicycle access to rail stations, express bus
 services and modal inter changes. 27- 2- 09**

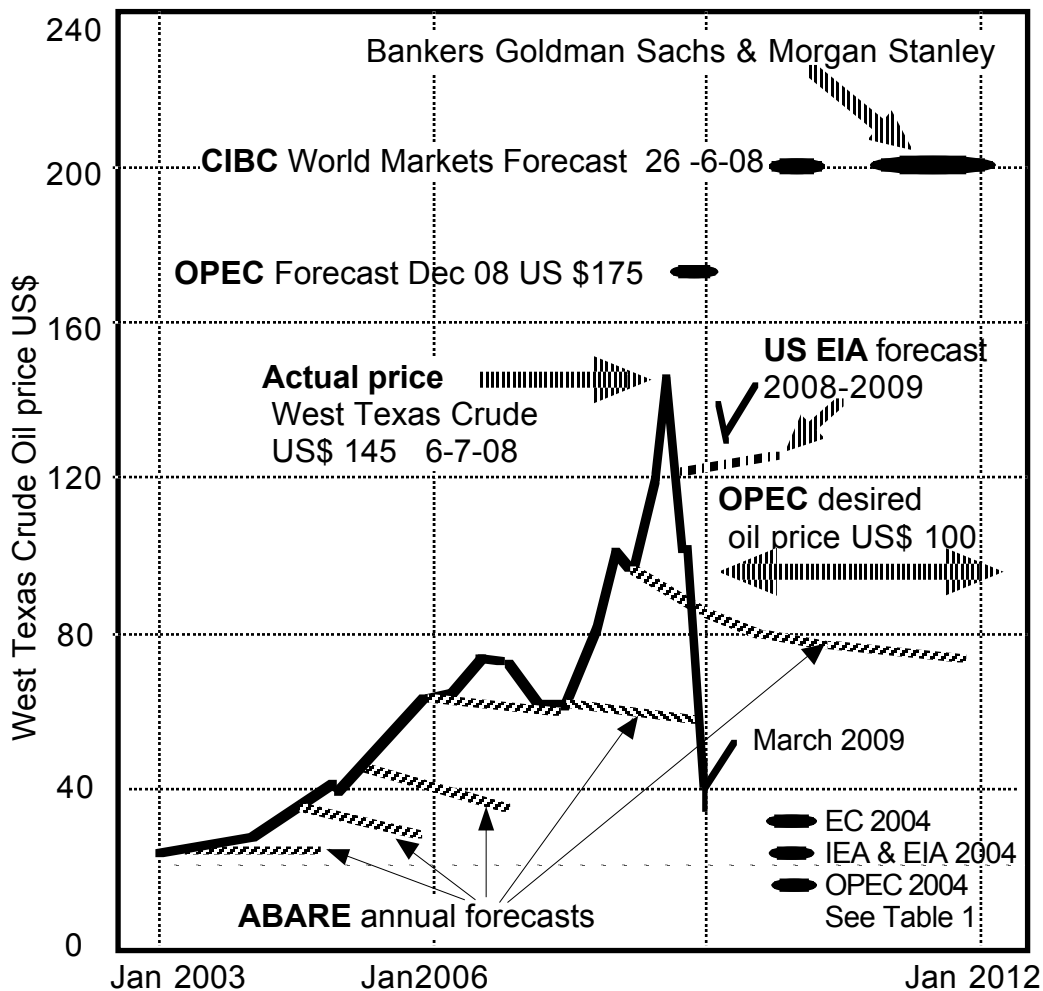


Figure 1. ABARE's recent oil price forecasts reflect the 2004 forecasts of the IEA , US EIA and OPEC for 2010 and failure to model the consequences of a deep recession till 2012

Introduction

The interaction of the negative synergies between, toxic debt in the global economy climate change and oil depletion is a threat to all nations. This energy security crisis has become a threat to the well being of billions of people and should be accepted as a major threat to national security . Financial derivatives have turned out to be weapons of economic mass destruction and a 1929 category depression is on its way which will last to at least 2015. That's when the International Energy Agency stated (IEA 2008) that the demand for oil will exceed oil production which will then decline permanently. When that happens it will further destabilise the recovering real economy of most nations. Figure 1 shows the poor forecasting by ABARE and other government agencies.

An integrated system of national security planning is needed to cope with the conflation of toxic debt, natural disasters made worse by climate change and the increasing demand for passenger transport due increasing prices of crude oil. The fragmented approach created by the economic rationalists of the commonwealth government and state agencies over the last 20 years has resulted in very high external costs from the implementation of contradictory policies.

The demand for passenger transport has increased due to the increasing prices of crude oil. The need to encourage intermodal passenger transport with theft proof bicycle parking to access rail systems, as was done in the Netherlands, Denmark, Sweden and Japan,. has been needed In Australia since the 1970s. (Parker 2002).

There is also a need to promote the use of the safest and best electric bicycles into Australia; these are now banned for sale in Australia due to restrictive regulations. **See Appendix A** entitled *Electric bicycles conserve oil, are potential users of solar electricity and can greatly enhance public transport access*

US computer modelling that ignored the complexity of the real world

The US and EU economies are going 'belly up' and it is only a matter of time before other economies like Australia and China go under. Figure 2 shows the decline of the Australian All Ordinaries share price index and it is likely that it will bottom out in 2010 and then it will take five years to get back to the 120 year All Ords trend line. shown figure 2.

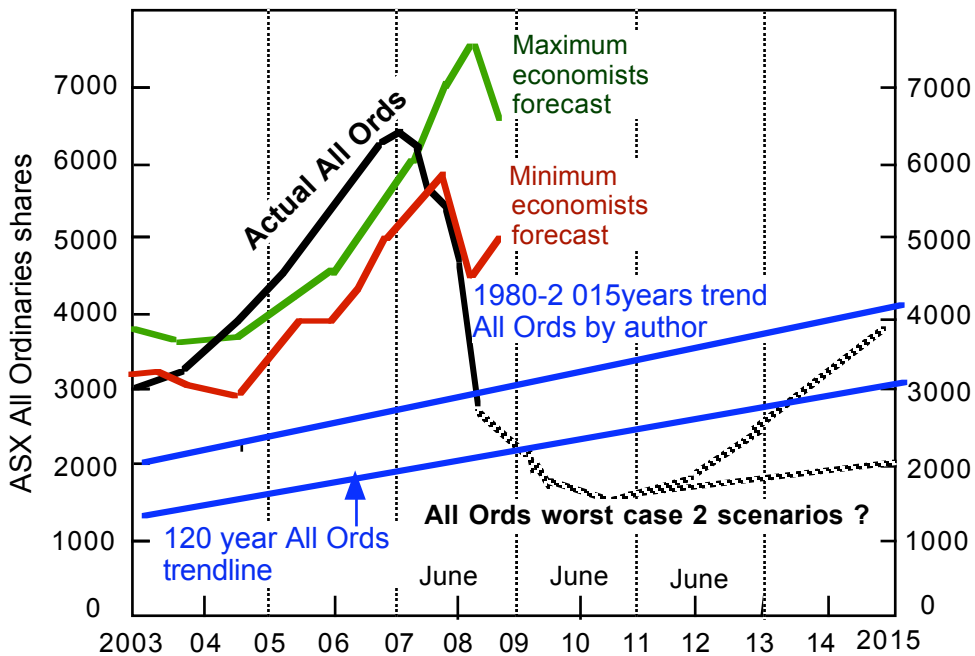
The US economy is well past its tipping point; Wall Street's financial computer modelling assumed a future based on the steady increase in GDP and it is now obsolete. Indeed Alan Greenspan has apologised to the US Congress for his reliance on flawed financial computer modelling which failed to take into account the economic complexity of a globalized world economy. The facts of life acknowledge that the financial system system is unpredictable. (Mackenzie 2008).

The US Dow Jones Index did not return to early 1929 levels till 1952 and that could

happen again. because of the gross failure to exercise financial prudence, and establish sound regulatory controls over banking. Asset speculation became a national pastime despite all the hard evidence that personal and national frugality, and energy conservation are the only way to go for nations to survive and cope with climate change.(Morris 2008)(Spratt and Sutton 2008)

US home investors believed the nonsense that home prices could rise every year by 20%. If that is not a debt bubble, what is a bubble? US incomes are falling many are losing their homes and their jobs and the car industry is looking like a time bomb that will blow up in 2009 and 2010. The same trends are similar in Australia, the EU and Japan.

Figure 2. Comparison of economists forecasts of next years growth of the ASX All Ordinaries shares and their actual growth from 2002 to 2009. Projection of the worst case scenario from 2008 to December 2012.



Data source: Melbourne Age 6 monthly Economic Surveys, extrapolation of Sydney Stock Exchange 120 year "All Ordinaries" trend line and unpublished research by Alan. A.. Parker

The interaction of the negative synergies between toxic debt in the global economy, climate change and oil depletion is a threat to all nations. This threat to national and energy security crisis will probably last to 2015 and become a threat to the well being of billions of people including Australia's principal trading partners. Financial derivatives have turned out to be weapons of economic mass destruction and a 1929 category depression is on its way to at least 2015. That is when the International Energy Agency stated (IEA 2008) that the demand for oil will exceed oil production which will then decline permanently.

The period of negative economic growth coupled with mass unemployment. will be extended This will reduce the available capital for investing in renewable energy

resources and new technology which are needed to combat climate change. At present the Australian government is trying hard to create more demand for consumer goods when the only way to reduce the steady growth in carbon dioxide emissions is to reduce the demand for consumer goods.

TRANSPORT INNOVATIONS TO REDUCE OIL CONSUMPTION

In Australia adapting vehicles to use Australia's abundant supplies of natural gas as transitional fuel and for the Australian car industry to make gas powered vehicles is a sensible short term transport option providing that enough of it remains for this purpose and it is not all exported. This is not case in the US because it has limited gas reserves.

The limitations of ethanol made from food products and hydrogen fuel cells are set out in the US GAO report. and apply to both the US and Australia. However, research into the production of Cellulosic ethanol (CE) and other waste products to power vehicles is unlikely to result in clean ethanol being available for a few years. If that research fails ethanol use will need to be restricted to mopeds, light scooters and power-assisted bicycles using the clean fuel injection system developed by the Orbital Engine Company in Perth. Even if producing ethanol from CE is not successful Orbital's clean fuel injection system needs to be used in Australia for these fuel efficient two wheelers, including power assisted bicycles, without jeopardising food production.

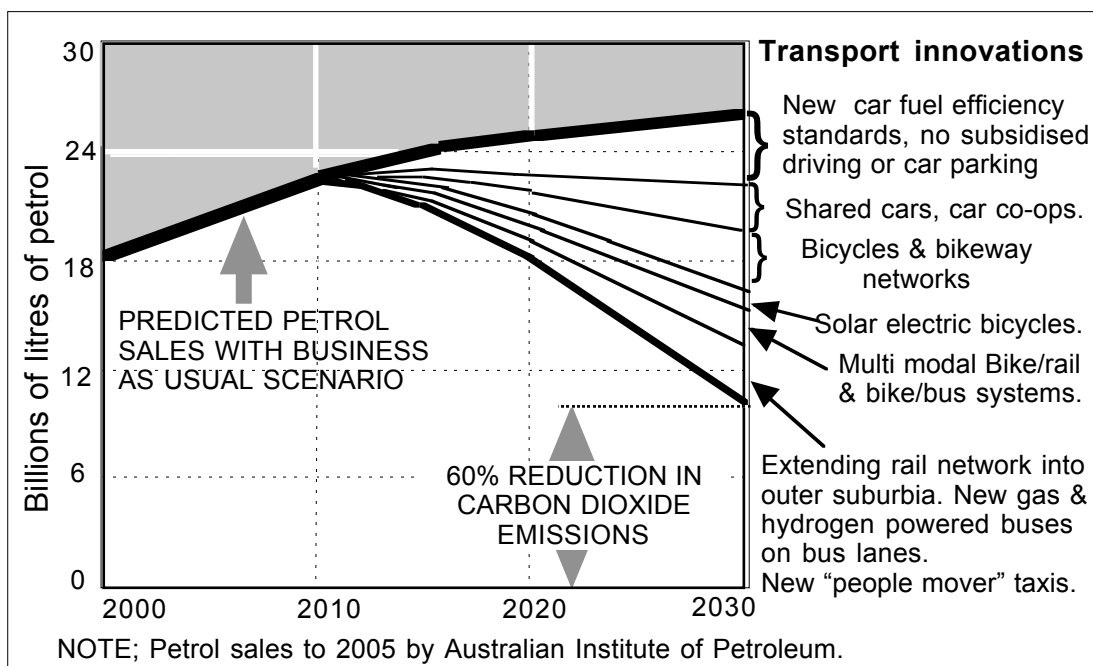


Figure 3 Adaptation measures to reduce Australian oil consumption by 2.2% per year and reduce greenhouse gas emissions and increased public c transport passenger patronage

Nearly all hydrogen produced today is made from natural gas and results in carbon emissions but surplus wind power from wind farms can be used to produce 'green' hydrogen by the electrolysis of water. This hydrogen could be used to power farm machinery and local trucks buses but will never been made in sufficient quantity to power urban car fleets which will have to be reduced. There are also high costs and leakage of hydrogen due its small

molecular size in piped hydrogen distribution networks. Hydrogen buses operating with hydrogen in rural locations has considerable potential (Strahan 2000).

There is no practical alternative to oil in the next few years and we have to adjust to a growing oil scarcity. The timetable laid out by the Bush Administration in its \$1.2 billion "hydrogen economy" policy statement was not credible. The hydrogen economy is not the quick fix to oil depletion. On the contrary, a 2004 report from the US National Academy of Science concluded that, "under the best case scenario the hydrogen transition will do little to cut oil imports or greenhouse gas emissions during the next 25 years." The constraints to the use of hydrogen are formidable (Bossel & Eliasson 2003). (Wald 2004) The technologies investigated in the USA face challenges that could impede their ability to mitigate the consequences of a peak and decline in oil production, unless sufficient effort is brought to bear quickly. (US GAO 2007) This depends on the new US and Australian administrations

The Senate report (2006) argues that prudent risk management requires the planning and implementation of mitigation well before peaking, which would certainly be less expensive than delayed mitigation, and makes recommendations for many of the transport initiatives shown on figure 4. It also recommends the need to investigate the introduction of congestion charging in Sydney, Melbourne, Brisbane Perth and Adelaide. The adaptation measures shown on Figure 4 are indicative only to illustrate what kind of reductions in fuel use are required to achieve a 60% reduction in carbon dioxide emissions from the urban passenger and intra urban freight transport systems by 2030. Anything less than that reduction in emissions is likely to result in an extremely dangerous level of global warming as indicated by the latest research (Hansen 2007) published after the release of the Stern Report and IPCC report

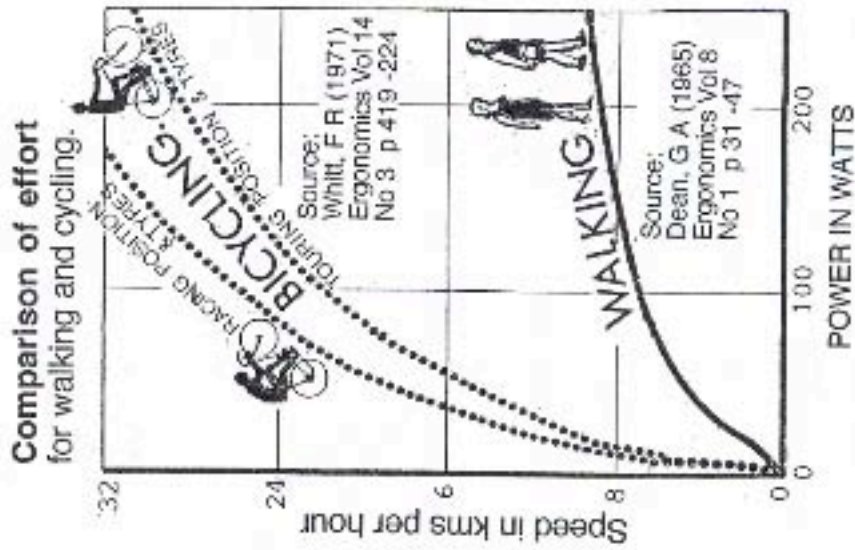
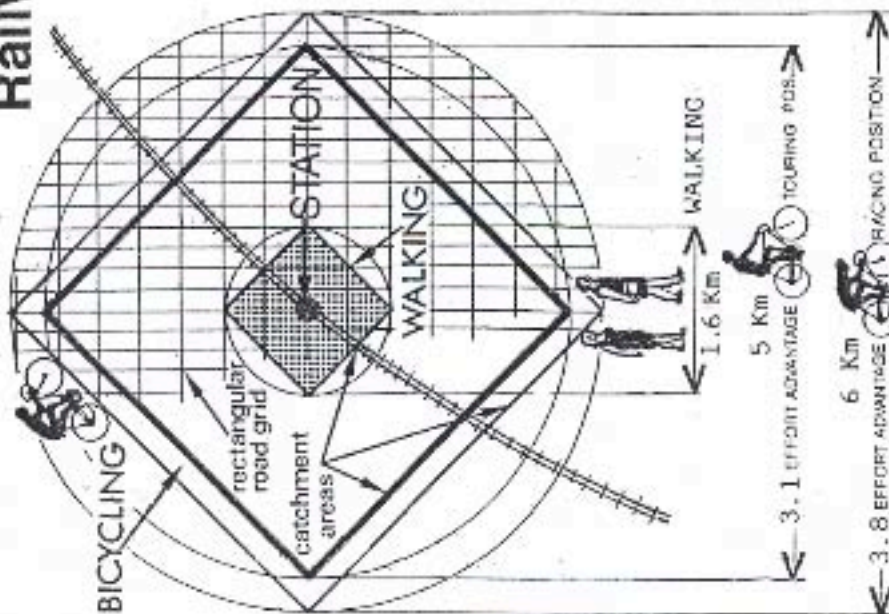
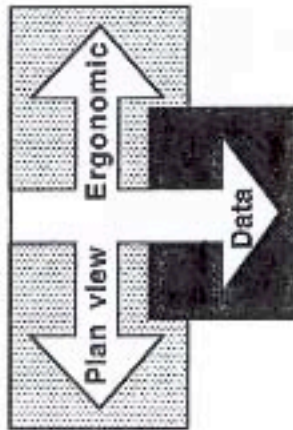
Figure 4 indicates that the most effective innovation for cars and light commercial vehicles in Australia is petrol and diesel fuel efficiency standards (See section) the objective of which is reducing the size and increasing the fuel efficiency of the Australian vehicle fleet by making more energy efficient cars available and encouraging people to share, use car hire co-ops, and use public transport. Figure 4 also indicates the need to extend public transport services in outer suburbia. Depending on the severity of future oil shortages the fuel efficiency standards may need to be supplemented by replacing incentives to overuse cars such in salary packaging schemes and replacing them with incentives to ride bicycles and use them for access to public transport.

The adaptation measures on the following Figure for transport mode shift and lifestyle changes can best be made at local government level by the promotion of Travel Smart programs supplemented by the provision of safe bicycle route networks that provide safe and secure access to public transport. These need to be applied in the outer suburbs of the capital cities where most long, single occupant car commutes originate. (See section 4.3 to 4.7 for details)

In Australia the use of bicycles as a means of accessing rail and express bus systems is far behind that of world best practice in the Netherlands.

In Australian capital cities tens of thousands of urban cyclists are choosing to drive because there is no secure bicycle parking at unstaffed stations and modal interchanges. There are very few secure bicycle lockers at staffed stations in the

Railway station Catchments



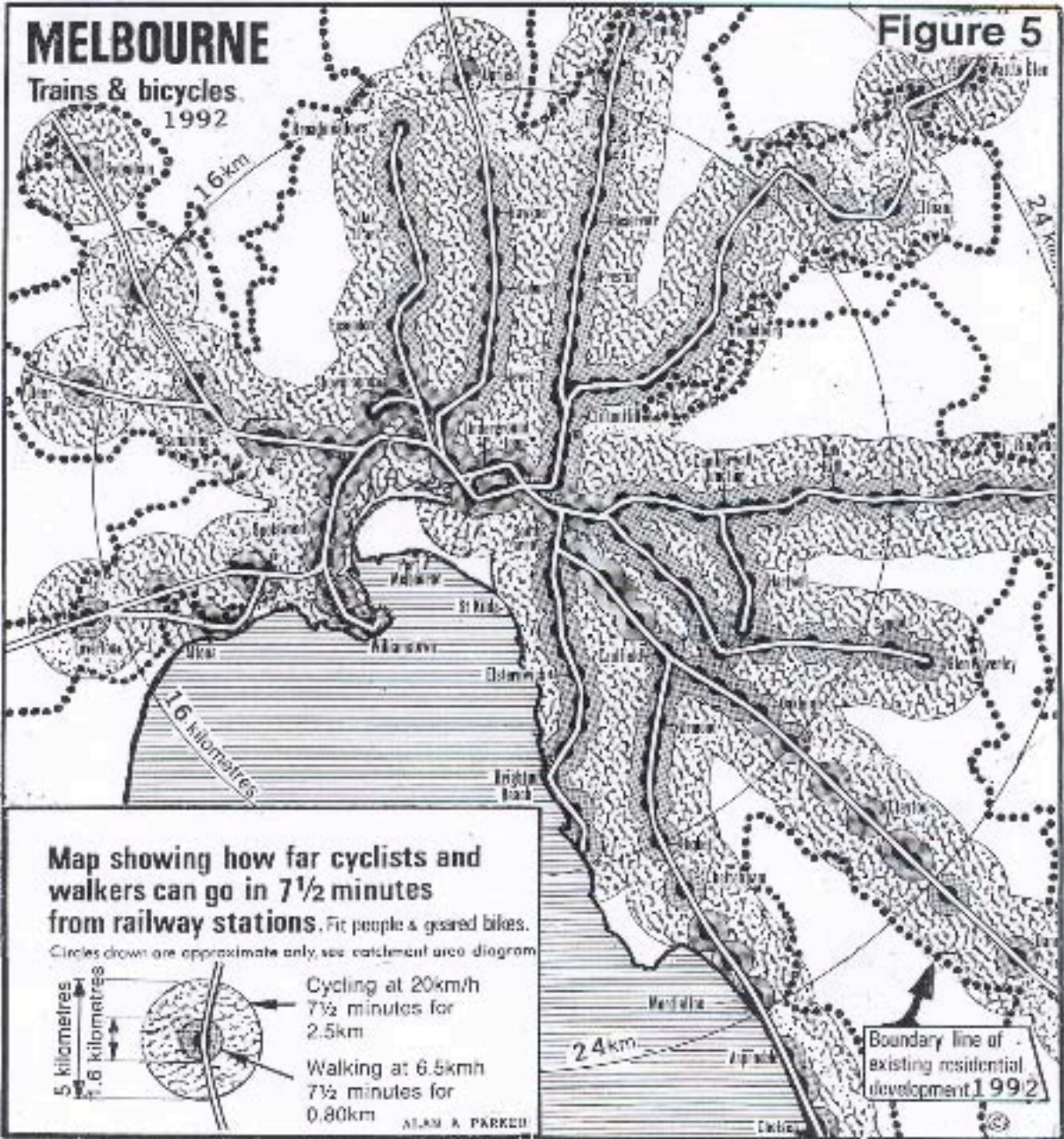
Station catchment area data for walking & cycling with the same physical effort (75 watts for 7.6 minutes, within a rectangular street grid)

Effort advantage.	1.0	3.1 3.8
Speed km/hr	6.1	20.0 23.0
Distance km.	0.8	2.5 3.0
Catchment area sq Km	1.3	12.4 19.0

Designed & drawn Alan A. Parker 1976

capital cities. Theft and vandal proof bicycle parking for rush hour commuters travelling with the flow is needed but rail agencies ignore this problem. Rail agencies also ignore the ergonomic science which proves that riding a bicycle uses the 'mechanical advantage' of pedalling over walking to go 3.5 times as far as walking and to access around ten times the area for the same physical effort. (Parker 2002)

In the Netherlands, 25% of cyclists have a bicycle stored at both their home and destination stations, giving them convenient access to many more places and making cross suburban travel nearly as easy as going by car. Time wise bicycle access is more competitive with the car than bus access. (ECMT 2001)



The Map above of Melbourne shows that around 70% of potential rail users are

within easy cycling distance of a station but only 12 % are within easy walking distance. If there was bicycle parking at all rail stations and if more stations were built in the outer urban areas the potential of the existing rail system could be extended by 60,000 commuters or more per day. Similar conditions apply in Sydney and Adelaide. Such low cost solutions are ignored and car parking is provided, at an average cost of \$15,000, for able bodied commuters, half of whom could easily walk or cycle to a station. In Perth and Brisbane there are now 2000 bike lockers; good work has been done but follow up funding is urgently needed.

Parking at stations costs ten times as much for cars as for bicycles and half the people who park their cars at stations live close by and are depriving people who drive a long way to the station of a place to park. An equitable vehicle (bike and car) parking policy is needed in all the capital cities to provide better access to the rail stations and to new express bus stations and stops in outer urban areas

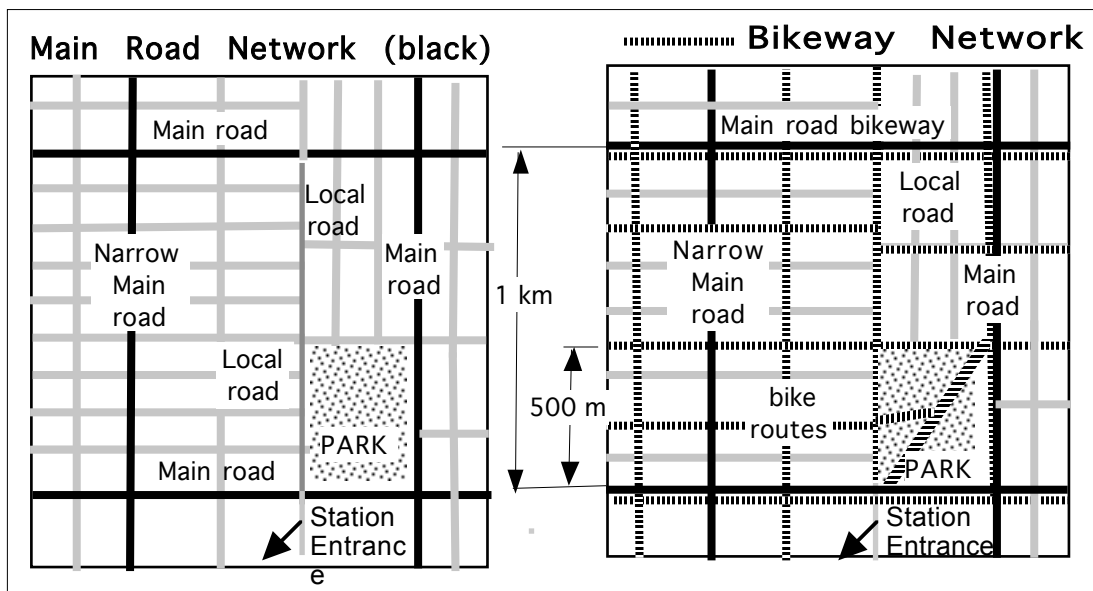


Figure 6 Access to station in grid iron street layout

Need for rail infrastructure

In Australia the use of bicycles as a means of accessing rail and express bus systems is far behind that of world best practice in the Netherlands. Tens of thousands of cyclists are choosing to drive because there is no secure bicycle parking. There are very few secure bicycle lockers at staffed stations in the capital cities. Theft and vandal proof bicycle parking for rush hour commuters travelling with the flow is needed but rail agencies ignore this problem. They have not provided enough facilities to access the stations on quiet residential streets although this is feasible in grid iron street layouts as is shown on Figure 6.

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In Australia parking at stations costs ten times as much for cars as for bicycles and half the people who park their cars at stations live close by and are depriving people who drive a long way to the station of a place to park. More bicycle and electric bicycle places should be planned for than car parking spaces. The need for vigorous promotion of 'quality' electric bikes is described throughout Appendix A

The Commonwealth funding for rail and express bus infrastructure should be conditional on the provision of secure bicycle parking in all new rail stations and in the renovation of existing stations. At least \$100 million a year should be provided

Conclusions

Because peak oil is certain to occur it would be prudent to conserve oil to maintain essential public services and food production in the following way:

1. Produce an integrated national Energy Security Policy to mitigate oil dependency with both demand and supply side measures, institutional changes, transport innovations, tax incentives and constraints that collectively focus on the synergistic reduction of oil use and carbon dioxide emissions from the transport sector to below the 2000 level by 2012
2. Develop a crash program to reduce car use and increase the use of high occupancy public transport, walking and cycling and free Australia from oil dependence by 2020.
3. Establish a strategic reserve of a mix of crude oil and refined oil products and replacement parts for public transport vehicles.
4. Introduce equitable vehicle (bike and car) parking policies in all capital cities to provide better access to the rail stations and to new express bus stations and stops in outer urban areas. Secure bicycle park and ride facilities can reduce congestion and carbon dioxide emissions from urban passenger transport . Parking at stations costs ten times as much for cars as for bicycles and half the people who park their cars at stations live close by and are depriving people who drive a long way to the station of a place to park. 5 The Commonwealth funding for rail and express bus infrastructure should be conditional on the provision of secure bicycle parking in all new rail stations and in the renovation of existing stations.

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