CYCLISTS' ACTION GROUP

WA affiliate of the Bicycle Federation of Australia

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Professor Peter Newman,
Director, Sustainability Policy Unit,
Policy Office,
Department of Premier and Cabinet
15th Floor, 197 St Georges Tce,
Perth WA 6000

1st May 2002

Dear Peter,

Bicycle Transport.
The only significant sustainable transport mode now in use

Any serious evaluation of sustainable transport must consider the existing and potential of bicycle transport. Sadly, most transport planners have seen solutions only either in massive expensive freeways, or in similarly large public transport projects. The simple, cheap, healthy, non-polluting and biomass-powered transport mode of a child riding a bicycle to school is usually completely overlooked for some reason. Already some 5% of trips in Perth are undertaken by bicycle, and this could be raised to 20% with modest investment in infrastructure and in changes in road authority policy.

I enclose as our submission a copy of the Bicycle Federation of Australia submission to the Sustainable Energy Policy for Australia, which was a Federal Green Paper in December 1996. Sadly the Whitepaper Task Force has never presented a White Paper, although between the lines, the Federal Green Paper raised some significant issues. While some of the submission is dated, it does show that the issues largely remain the same, and that State and especially Federal Governments have continually overlooked bicycle transport. Its many "No-Regrets" advantages as well as in sensu-stricto "Sustainability" using the Brundtland definition make it an extremely cost-effective addition to a sustainable transport system, in an immediate timescale unlike most other medium and long-term options.

Some detailed suggestions for immediate WA action follow in addition to the Sustainable Energy Policy Submission, which includes a considerable number of references

Yours sincerely,

Bruce Robinson
President,
Cyclists' Action Group

In WA, the State Government should

υ undertake to complete the Perth Bicycle Network by 2005, including as a high priority the cycleways along the railway lines from Perth to Armadale, Midland and Fremantle, which will take almost a century to complete at the current snail's pace.

υ ensure DPI and MRWA have performance indicators which adequately evaluate their provision for sustainable transport, especially for cycling and walking. Current road engineering practice frequently creates additional hazards for cyclists and pedestrians when making the roads safer and more efficient for motor vehicles. MRWA performance indicators are heavily biased towards motor vehicles, and the road safety performance indicator has been dropped, unfortunately

υ ensure that a specified fraction, initially 5%, of total urban transport funding is devoted to bicycle transport infrastructure. Road and transport authorities which perform poorly in catering for bicycle transport in new road works and in traffic management schemes should have their road funding cut until their performance becomes acceptable.

υ rejuvenate Bikewest as a cohesive effective well-staffed bicycle transport infrastructure provider. [Bikewest was disbanded and dismembered in past DoT reorganisation and "integrated" into general transport so well that bicycle transport expertise has almost vanished]

υ insist MRWA form a well resourced bicycle traffic engineering group to reverse the existing MRWA and local authority indifference and incompetence in the design and construction of roads and paths which cyclists will use. A sadly large number of examples can be quoted in support of this discouraging claim if there is any doubt.

υ discontinue the practice of providing "company-cars" for all senior DPI staff, as it sets a very bad example to the community, and it also further perpetuates WA's "obsession with cars" and serious automobile dependence.

> *1/11/01*
>
> *Western Australians were choosing to drive when they could just as easily walk to their destination, Premier Geoff Gallop said today.*
>
> *Launching Walk Week at a Subiaco Primary School today, Dr Gallop said Western Australians must break their obsession with motorcars.*

Part of a submission to the WA State Sustainability Strategy
1st May 2002
from the BFA submission to "A Sustainable Energy Policy for Australia", January 1997

Provision of bicycle transport facilities should form a significant part of any urban transport energy strategy

The Bicycle Federation of Australia represents the estimated 3.2 million Australians who already use bicycles once a week or more (from ABS [16,17]). It is the peak body of State bicycle advocate groups which have a direct membership of some 20,000.

The Bicycle Federation of Australia is vitally concerned that Australia should develop *and implement* a genuine Sustainable Transport Energy Policy, and that unlike in previous transport and policy reviews, the current and potential rôle of bicycle transport should be given serious consideration.

It is quite clear from the growing number of recent reports that our current transport energy practices are unsustainable even in the short term as defined by 1.2.1. The prime reason is the predicted imminent disruptions and the inevitable decline in the availability of the cheap oil that now fuels our transport. Another reason is the growing awareness of the serious environmental[20] and social problems associated with untrammelled motor vehicle use in cities.

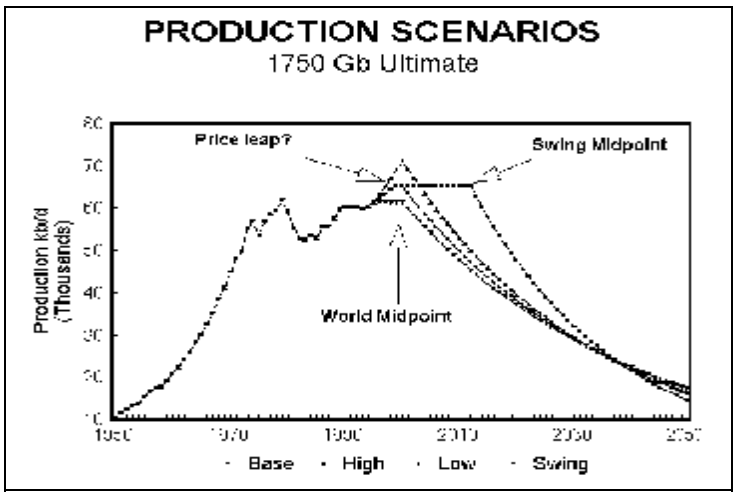

Fig 1. World oil production is expected to peak in about ten years or less and then decline[4,5]

The BFA would like to bring to the attention of the task force two recent papers[3,4] a major report[5],and a book[6], all dealing with predictions that the world's oil production rate is likely to start diminishing within the next decade or perhaps sooner. Although this is not yet the accepted wisdom, it is vital to consider the data, and to plan for the probability that these predictions may well be proved correct in the short term, and are almost certain to be valid in the medium to long term.

Most of the world's oil is controlled by Governments (and only 7% by the major oil companies), so it is unrealistic to assume the oil supply market will adequately consider the needs of future Australian generations, or even the current Australian community.

The Gulf countries will have soon us over a barrel.
There are many steps that Australian can take to minimise the risks of probable future oil shocks and the effects of the oil production decline which are predicted on the same timescale as Australian production will start declining (unless there is a discovery of another oil field of the size of Bass Strait).

There are a number of references included in the bibliography that, since at least 1979, have provided detailed and sensible recommendations to reduce transport energy fuel consumption. Many of these are "no-regrets" options and have other social or equity benefits apart from energy conservation.

It does seem from the incomplete list of references into transport energy, that the most sustainable activity is in holding inquiries into transport energy policy. There is very little evidence yet of any moves towards the implementation of a sustainable transport energy policy.

The Bicycle Federation of Australia recommends that substantial Federal funding support be given to bicycle transport facilities. This should follow recent US and UK models. The US Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) specifically allocates funding for bicycle transportation as well as many other efficient and low-impact transportation initiatives.

Risk Mitigation

The most important section in the Green Paper is that on Risk Mitigation. We believe, from the references on oil production rate prediction, that there is a very serious short-term and long-term risk to Australia from intermittent and permanent reductions in the availability of imported oil.

Urban transport uses a very substantial part of our liquid fuel, and is the area where there is the greatest scope for alternatives. For instance, most urban people could get to work, shops and schools by bicycle, walking or public transport if need be, but mining, agriculture, and fisheries for example depend largely on diesel fuel and there are no practical alternatives in most cases.

Our dependence on oil for urban transport must be contained, so that liquid fuels are available for essential purposes.

Some Australian oil fields should be kept in reserve for national emergencies and for defence and strategic purposes. A policy aimed at short-term self-sufficiency at the expense of long-term options has a great number of potential pitfalls. We should be importing petroleum while it is still available and cheap, and husbanding our local reserves for the future.

It is our view that the world is probably rapidly approaching the end of the era of cheap and plentiful oil supplies. It will be prudent, and possible crucial, to plan seriously for this eventuality.

Bicycle Transport.

Most transport planners substantially underestimate the current and potential role of bicycle transport. This is in part because the "trips-to-work" parameter underestimates by a factor of four or so, the proportion of total urban trips taken by bicycle[15a].

Health Dividends

Investment in bicycle transport will pay substantial dividends in Commonwealth health cost reduction[21]. Inadequate physical exercise is a risk factor accounting for additional costs of about $1200-$1600 million pa in Australia for cardiovascular disease alone. Previous sustainable transport energy studies have ignored the both dollar cost, and the energy cost of excess hospitalisations and drug treatments due to the exercise deficit which is imposed on the community by our current transport system.

The British Medical Association[21a] shows that the benefits to health of bicycle transport far outweigh (20:1) the small additional crash injury risk and recommends

> *"Cycling should be actively promoted as an environmentally friendly means of transport and an effective way of improving public health."*

Renewable Energy is normally is defined to exclude bicycle transport. (3.3.12). Bicycle transport runs on renewable energy, either using readily available biomass energy such as "WeetBix", or by using at no energy cost the excess calories which plague a lot of Australians. 3.3.14 states renewable energy systems are characterised by high to very high capital costs. A bicycle ridden to school is a source of renewable transport energy, and is not capital intensive.

Alternative Transport Fuels exclude bicycle transport (3.3.31).
Biomass powers bicycle transport as above. Bicycle transport is the major alternative to oil-powered private transport.

"Zero-emission vehicle" is also defined to exclude bicycles (3.2.13). *"The development of vehicles to meet these requirements (zero-emissions) may produce transport options that rely more on sustainable energy resources and are more energy efficient than other technologies"*. This statement implies that such a vehicle does not yet exist in commercial quantities. We suggest looking in the local bikeshop for a cheap, easy to operate, low-maintenance, healthy zero-emission vehicle.

Why do energy and transport planners Australia-wide ignore bicycle transport when talking about renewable energy, alternative fuels and zero-emission vehicles?. It is estimated that 6-7% of all Australian urban and country-town vehicle trips are undertaken by bicycle. This is far more currently than is probable from fuel cells, electric vehicles, ethanol and so on in the planning time scale of the Green Paper.,

Bicycle transport levels in Australian cities could reach 15% or 20% of all trips under a number of foreseeable circumstances in the next couple of decades. The WA Government target for Perth is already 11.5% of trips[15]. Provision of adequate facilities in our cities would result in a very substantial rise in usage without other changes. In the event of serious and long-term oil supply shortages, these levels could be reached in the absence of a major facility construction phase. The construction of a good network of bicycle routes in all major

cities would provide a substantial element of risk mitigation or "robustness" for our transport system in the event of oil supply problems. Most capital cities have regional bicycle networks planned, but not implemented, due to essentially all funding being devoted to motor vehicle transport facilities. Just as motor vehicle traffic expanded upon the provision of facilities like freeways, bicycle transport will expand dramatically when adequate facilities are provided. Safe Routes to School is another program available to encourage urban and country-town bicycle use, but not yet funded.

Balance of Payments Problems
Dependence on imported oil will prove a crippling burden for many countries, as is already the case for the United States. About half the current US trade deficit is due to oil imports of $80,000 million pa. This is unsustainable in economic terms. Australia is set to follow the United States down the path of reducing self-sufficiency and crippling import bills unless we can start to manage our oil demand far more effectively.

Demand Management.

There are a considerable number of sensible and economically practical measures which would reduce the growing demand for vehicle usage in Australian cities. These have been outlined in the references below some for a decade or more.

Pay-Go
Australians who drive small cars calmly, slowly and infrequently are forced to subsidise those who drive big cars fast, aggressively and often. This is because major vehicle charges, like third party insurance costs, are vehicle ownership costs, not vehicle-use costs. Both fuel use and crash costs depend closely on vehicle mass, speed and of course the amount of use.

Changing to a revenue-neutral pay-go system for motor vehicle charges, as recommended since at least 1979, will reduce fuel consumption and save on crash costs (and the very high energy and dollar costs of major hospitals, ICU, rehabilitation etc). Abolition of all fixed charges (registration, stamp duty, sales tax and third party insurance) would make it easier for people to purchase a more efficient and less polluting new car, using future savings from fuel economy and trip minimisation.

This would substantially increase the price of fuel at the pump, without on average increasing the cost of motor vehicle travel. Those who travel less than average will no longer have to subsidise those who travel more.

No-Fault Third Party Insurance funded by fuel levies
An Australia-wide no-fault third party road crash insurance scheme should be introduced, funded by a levy on fuel sales. The current system is inequitable, especially to those frugal with motor-vehicle and fuel use. Pedestrians and cyclists very rarely injure motorists, but are frequently victims. The mass of the vehicle and its speed is a major determinant in the probability of it causing injury in the event of the crash. Most states do not adequately cover all pedestrians and cyclists injured in road crashes. There is no third-party cover for people injured on pedestrian and bicycle paths. An overhaul of third party insurance has been recommended by the Industry Commission[10] to make the full costs of accidents part of the internalised costs of road users."

Raise Commonwealth Fuel Excise.
Commonwealth fuel excise should be raised incrementally until fuel prices in Australia are at least on a par with European pump prices.

1 cent/litre for bicycle transport infrastructure
A specific amount, of 1 cent per litre should be hypothecated towards Federal spending on bicycle transport infrastructure. This would fund the construction of the planned bicycle networks for our major cities

State Fuel Franchise Fees should be raised
State Fuel Franchise Levies should be raised in urban areas. Differential rates for urban areas, are recommended by the Industry Commission (Urban Transport, I, 252)

Petrol price elasticity
A BTCE report[23] estimates the long-term price elasticity of petrol use is -0.66. Other estimates suggest -0.2 or -0.4 as a more likely figure. That is, for a 25% rise in price, usage will decrease by about 10% or 15%.

Dearer petrol means less crashes
Studies published by the Federal Office of Road Safety[22] have shown that Australia's road toll falls sharply when people use less petrol and rises when fuel consumption increases. In fact, a 10% change in petrol use is correlated with a 25% change in fatal crashes, according to the most recent estimates of the factors that control

the fatal crashes on our roads. A 10% reduction in fuel sales shows reduction of 111 fatal crashes per quarter, or 444 per annum.

Reduce Urban Speed Limits to 40 km/h.
Reduction of urban speed limits from the current 60 km/h to 40 km/h as is the norm in the United States will save fuel, and will make our cities safer and more livable. 30 km/h zones are common in many European cities.

The NSW Parliament Standing Committee on Road Safety[24] has recommended the reduction of the urban speed limit in NSW from 60 km/h to 50 km/h. Trials in Adelaide[25] confirm that 40km/h is both effective and popular.

Reducing speed limits greatly encourages non-motorised modes, such as walking and cycling. It also results in direct fuel savings, as well as dramatic crash and injury reduction[26].

"When pedestrians are hit by a car travelling at 30 km/h only 5 % are killed. When hit by a car at 60 km/h 80% are killed".

"Company cars" should be discouraged.
Provision of cars with "free" petrol as part of salary packages obviously encourages excess vehicle travel. Commonwealth and State Government salary packages preclude staff taking an equivalent salary increment instead of the car.

All company car salary packages should allow, and encourage, remuneration to be taken in equivalent extra salary, which can be spent on more productive uses.

Bicycle Transport vs Public Transport
In both energy and economic terms, investment in bicycle transport facilities is far more productive than an equivalent amount spent on public transport. This is because bicycle transport has very little in the way of Government running costs, once reasonable facilities are in place.

Funding for bicycle transport should be on a similar level per trip or per km to funding for public transport. At the moment, children who travel to school by bus receive a substantial subsidy, while those who go to school by bicycle receive very little indeed in the way of expenditure on facilities like Safe Routes to School.

Short trips are well suited to bicycle transport
A very high proportion of urban trips are short, within 3-5 km. It is these trips which are expensive and polluting by car, as engines and catalysts are inefficient until hot. Bicycle transport is well suited to trips of these lengths, unlike public transport. It is these trips which offer the greatest energy and pollution savings.

A 3 km bicycle trip to school saves 12 km of car travel, if the parent's drop-off and pick-up trips are not combined with any other purpose.

Long urban trips are catered for by bicycle and public transport dual-mode.
Secure bicycle parking at bus and train stations, and carriage of bicycles on buses and trains offer a viable alternative for many longer urban trips.

Disabled Transport and the transport disadvantaged.
Elderly people and those with handicaps are increasingly using electric scooters and wheelchairs for short urban trips. Provision of good bicycle facilities, such as off-road paths and on-road bikelanes also assists the use of alternate low-powered vehicles. This provides valuable accessibility to those who do not have access to cars.

Only about 50% of Australian population have driver's licences and of those not all have access to a car. Our transport system should be designed for non-car private travel as well as for motor vehicles.

Providing for bicycle and low-powered vehicle transport will be a valuable "no-regrets" option, in addition to the energy conservation aspects.

Motor vehicle design standards should be updated to provide crash protection to pedestrians and cyclists as well as vehicle occupants.
Federal Government standards (Australian Design Rules), provide a range of requirements to protect the occupants of cars. It is quite practical to include far better protection for pedestrians, cyclists and motorcyclists when hit by cars. Impact absorbing frontal treatments for cars and trucks is an important way to improve the safety of sustainable transport modes.

Bans on Bull-Bars

Bans on the use of bull-bars in urban areas would also make a substantial improvement to the safety of sustainable transport modes. Most bull-bars are installed for cosmetic purposes, as can be seen from examination of the polished and expensive 4WDs in fashionable suburbs. The injuries to pedestrians hit by these devices are very substantially worse than those inflicted by standard vehicles.

Summary: Federal funding of bicycle transport at levels of 1 cent/litre of petrol and diesel, (or at levels of about half the funding per trip/km now devoted to urban public transport) will be enough to double and perhaps treble bicycle usage rates in Australia. This will create very substantial transport energy savings, and will substantially improve the "robustness" of our urban transport system and our ability to minimise the effects of the short and long-term oil shocks which are predicted to become a feature of early 21st Century Australian life. It will allow the oil saved to be used for crucial national purposes, such as mining, aviation and agriculture and for a strategic reserve for defence.

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References:

These are part of an annotated bibliography being developed by the Bicycle Federation of Australia

Oil Supply Predictions:

1. ***"Oil Shortage may price cars off the roads by 2010".*** The Sydney Morning Herald**,** 22-June-96, p15. Linda Morris, Transport Writer. The NSW Department of Transport has launched an inquiry into the State's transport needs in the wake of predictions that Australia will face a domestic fuel shortage within 15 years. The interdepartmental study will identify the economic impacts of a "worst-case petroleum supply situation" and the effect dwindling oil supplies will have on the use of the private car. The investigation has been prompted by an alarming assessment of the world's oil resources, prepared by Geneva-based Petroconsultants which predicts that oil production will slow from 2000, gradually declining to levels not seen since the first half of the 20th century. This forms part of a growing body of scientifically-based studies which show the world is heading towards another oil crisis much bigger than the oil shortage which followed the 1991 Gulf War

2. "Scraping the barrel", New Scientist. 20th April 1996, page 12. brief article about McKenzie 1996

World oil supplies could start running out as soon as 2007, according to a report from the World Resources Institute, a think-tank in Washington DC. But governments are doing little to prepare for the economic shock this will cause, it says, because oil prices are low. ...

3. "Oil as a finite resource; When is global production likely to peak?" . James McKenzie, March 1996, World Resources Institute. Washington, DC. (now on WWW at WRI). (http://www.wri.org/wri/energy/jm_oil/)
McKenzie can be contacted on Jim@WRI.com

Global oil production is predicted to peak between 2007 and 2014 on current increasing consumption trends (2% pa). If oil demand is held constant, the time of decline could be delayed by decades. ... "As the peak and decline of world oil production comes within sight, policies to encourage more efficient oil use, and a switch to alternative energy sources, especially in transportation become urgent. Unfortunately, because oil prices are low, few decision-makers appreciate how little time remains, and efforts on both these accounts are weak and overdue".
Powerful graph (fig 11) shows the big increase in OPEC "political" reserves oil during late 1980s. The jump was not based on exploration results, but OPEC quota negotiations.

4. "The world's endowment of conventional oil and its depletion", C.J. Campbell, Petroconsultants, Geneva, 1996.
(available on WWW. see http://WWW.ecotopia.com/hubbert/).

This company maintains the most authoritative database on production and reserves as well as important drilling statistics for the world outside the United States and Canada, but it is available only on subscription. It also publishes reports on future supply and depletion built on its database and unrivalled knowledge. It is extensively used by the oil companies

World oil supply will pass its midpoint around 1999. Another oil shock and the onset of chronic declining supply is likely.

Once half the oil from a field or country is produced, production rates start to fall (the Hubbert curve). US production (1970) and Alaskan production (1988) both demonstrate this. Most producers have passed, or are within a couple of years of the mid-point, and hence declining production. Only four Middle-East countries are further than 5 years from the mid-point.

Evidence that the US Geological Survey and other published estimates are seriously biased and need to be "decoded". Rate of giant oil-field discovery peaked in 1960s. A few Middle-East countries will have a critical control of the world oil supply within a few years. These "swing-producers" will determine short-term production and depletion rates.

5. "The world's supply of oil, 1930-2050", 1995, C.J. Campbell and J.H. Laherrère, Petroconsultants, Geneva. Three volume report, costing US$33,000. The first, summary, volume is available for $US950. WA Department of Transport has purchased the first copy of the summary report in Australia. Precis available from Murdoch ISTP. This is probably the most detailed and definitive study available.

"Conclusion:

While there is some uncertainty about the size of the world's reserves of conventional oil and undiscovered potential, it has now reached sufficient maturity for the general position to become fairly understandable, and much more than was the case even a few years ago. New techniques of analysis are coming into play, which combined with the intuitive assessments of experienced oilmen, paint a clear picture, even if the details remain to be filled in. Non-conventional oil will become important with higher prices, but is subject to a very different depletion pattern, characterised by a gradual rise in production to a long low plateau. The scene is well set for another oil price shock. It will not be a repetition of the temporary interruptions as in the 1970s, but a permanent condition reflecting declining resources and the control of such by a few countries. Of critical importance is the need to improve the knowledge of past discovery so as to improve the basis for evaluating what remains to be found and produced. This study is a step in that direction, and will itself be due for refinement and revision as more information comes in. The implications are very important and deserve the closest attention as the world approaches the twenty-first century, ***when oil production will fall and decline to levels not experienced since the first half of the twentieth century. This cannot fail but to have colossal political and economic consequences."***

6. "***The decline of the age of oil. Petrol politics: Australia's road ahead."***, December 1995, Brian J. Fleay. Pluto Press Australia, Locked bag, 199, Annandale, NSW, 2038, $14.95. Mr Fleay can be contacted at 59 View St, North Perth WA 6006. 09-328-7065

Very useful summary of information. Particularly important is the concept of Energy Profit Ratio. If it takes more energy to get oil out (from shale for instance) than is contained in the shale-oil, then it is not profitable in energy terms. In the latter half of oil field production, it costs more energy to get the oil out than it did in the first flush of production. Many of the alternatives (ethanol from grain etc) have an EPR close to 1. Hence, many are not realistic. The effects on Australia's industries and economy are discussed.

Oil Conservation Measures, Transport and Travel Demand Management

There is a plethora of references on this topic. I am including some of which I am aware. This is biased towards Federal Government reports and WA reports which may not be well known elsewhere. There is a common thread of sensible cheap transport energy conservation recommendations which have been gathering dust on shelves for up to 18 years. No doubt there are many other similar studies and recommendations in other states, and elsewhere, which have also not been implemented.

***7. "Energy Use in Transport"*, 1979. State Energy Commission of WA.**

A result of the second, Iranian, oil crisis.

Recommendations.

State Government measures

- Car pooling
- *"Adjustment of motor vehicle fees to encourage fuel efficiency*
- ***Transfer fixed motoring charges (registration fees, third party insurance premiums and stamp duty) to a charge on fuel collection through the wholesale licence mechanism.*** *This would have no net effect on motoring costs but would discourage extensive use of vehicles with a high rate of fuel consumption"*
- Government vehicles, fuel efficient.
- reduced speed limits on country roads (not justified except in emergency conditions)
- town planning, bicycles

Commonwealth Government measures.

- mandatory fuel consumption limits should be introduced as soon as possible
- variation in sales tax rate with fuel efficiency to encourage purchase of more economical vehicles
- fuel economy labelling

ADR 2077 (fuel economy) to include aerodynamic and rolling resistance as well as dynamometer tests
Report ignored as the problem "went away"

***8. "Transport Energy Policy, Western Australia"*, 1979, WA Government.**
Known as the "crushed-can" report from the cover picture. Previous Court Liberal Government.
"We are confident that the looming problems can be overcome by the Government and people of this great state, provided they are tackled in a positive and constructive manner with the enterprise and resource with which we are accustomed to conduct our affairs.

Let us look to a new era, in which innovation and efficiency combine to give us the effective transport we need at prices we can afford in the face of increasing energy costs.". Sir Charles Court

Advocated transfer of fixed vehicle ownership charges (registration and third party insurance) to a fuel charge. In 1979, this would have added 5 cents/litre, revenue-neutral. *"In the long term, this could save 8 to 10 percent of private car fuel (about 3.5% of total transport fuel in WA)".*

State registration-fee surcharge to be retained on heavy fuel consumption vehicles, sliding scale, also Commonwealth sales tax on sliding scale. Both would encourage manufacturers to improve, to gain a price advantage on first sale.
Others similar to "Energy use in transport" SECWA, above
As above: Nothing happened, the problem "went away"

9. Ecologically Sustainable Development, Working Group on Transport. Final Report. Nov 1991. Australian Government Publishing Service, Canberra

Recommendations:
3. The Commonwealth Government undertakes a study into
How best to incorporate the full economic, social and environmental costs into energy prices in Australian transport and
The merits and impacts of a carbon tax and tradeable emissions scheme in reducing greenhouse gas emissions.

4. Sales tax on new motor vehicles of higher fuel consumption be increased and that on those of lower fuel consumption decreased on a substantially revenue neutral basis.

10. Voluntary and mandatory setting of new vehicle fleet fuel consumption targets

11. Fuel consumption labelling of all new cars and in all new car advertisements.

24. Traffic calming be given more prominence in local road planning and in the urban road funding process.

25 Bicycle Transport
(a) That bicycling be facilitated as a growing part of the transport system and that, where appropriate, greater consideration be given to cycling in transport decision making and planning.
(b) that a National Cycle Strategy which is integrated into national transport planning be developed and implemented
(c) priority be given to dual-mode facilities for cyclists at transit stations and carriage of bicycles on trains
26. an extensive program be funded to produce advice for municipal engineers and planners on travel demand management, traffic calming and bicycle facilities and to provide training programs.

10. Industry Commission. Urban Transport. 1994
The main findings and recommendations avoid completely any discussion of the fuel supplies for urban transport. This is a major shortcoming in view of Australia's dwindling level of oil self-sufficiency and the long term risks this poses for our transport system in an era of uncertain and probably diminishing global oil supplies.

*"The Commission recommends a thorough review of third party insurance arrangements and their role in **making the full costs of accidents part of the internalised costs of road users."***

11. Rescue the Future. Reducing the impact of the greenhouse effect. Senate Standing Committee on Industry, Science and Technology. January 1991
recommendations.
7.16. Commonwealth and States, through ATAC, work towards the establishment of an integrated national transport strategy within 2 years.

7.17. ATAC formulate a national action plan to make the changes needed to meet the needs of urban transport users in the most energy-efficient and cost effective way.
7.18. Minimum fuel economy standard of 8 litres/100 km for all new cars by 1998, reduced to 6l/100km by 2005
7.19. Incentives for the purchase of fuel efficient vehicles ..
Decrease use of cars for urban transport ..
effectively encourage efficient car use practices including car pooling
replace high standing charges for car and truck registration and insurance with ..charges levied proportional to use.

12. Towards a National Greenhouse Strategy for Australia. Australian and New Zealand Environment Council. 1990

use registration fees to encourage fuel efficient vehicles by considering it as a "vehicle use tax" rather than a "vehicle ownership tax"
develop new national standards for vehicle fuel efficiency from 1995
financial and/or tax incentives to promote the purchase of fuel efficient new vehicles
a labelling scheme for new cars based on existing fuel consumption data
a gas-guzzler tax on vehicles consuming more than 13.5 litres/100 km on city cycles
modifying tax write-off provisions for the use of private cars for work related purposes so they are linked to fuel efficiency

13. WA Dept of Transport "Transporting Perth into the 21st Century", 1992, p 44

"Transport users should be made more aware of the costs incurred through their travel. In the case of car users, this should encompass replacing fixed annual charges for variable charges
Key Actions.
37 Raise awareness of the true private and social cost of travel decisions.
38. Replace fixed charges on car ownership and use with charges which vary with the amount of use."

14. RAC WA. Submission to the Energy Advisory Council of SECWA. 1979. "Energy Use in Transport". P9-10

An appropriate means of influencing public demand in favour of more energy-efficient vehicles is to ***shift some part of the "fixed costs" of owning a vehicle to "running costs"*** *- those more directly related to actual kilometrage covered. Consideration could be given to lowering the licensing fee by a fixed amount depending on the class of vehicle and then applying a fuel levy to counter that reduction so that the average motorist is not severely disadvantaged.*
Further consideration could be given to ***transferring Third Party Insurance from forming part of the annual registration fee to an additional petrol levy similar to the above****. Again, this would have to be applied so it did not severely disadvantage the average motorist, but yet be sufficient to influence buyers towards more economical vehicles or alternatively to use their vehicles more cautiously.*

15. Perth Metropolitan Transport Strategy 1995-2029. WA Government, 1995

The strategy produced estimates of current model split, a prediction for 2029 based on continuation of current patterns, and a 2029 target for moving the modal split away from the predictions of increasing car dependence. (2029 is WA's bicentenary)

This was all done very largely with the assumption that fuel supplies would be readily available, although the objective of a "robust" transport system was considered.

*"**Robustness:** The transport system must provide services in the face of ongoing and largely predictable changes during the coming 35 years and must be able to respond to and take advantage of unpredictable economic, social, technological and other changes.*
The present transport system is highly dependant upon private motor vehicle travel and road freight transport. Changes in fuel availability, technology and social expectations could affect the nature and use of the region's transport system. ***A wide range of complementary transport modes will provide more flexibility to be able to respond positively to future change.***

Perth MTS	**1991**	**2029 current pattern**	**2029 target**
Walk only•	10.0%•	5.8%•	12.5%•
Cycle•	**5.7%•**	**8.0%•**	**11.5%•**
Car•	76.0%•	79.5%•	57.5%•
Public Transport•	6.4%•	4.8%	12.5%

Cycle use in Perth was 235,000 trips per day in 1991, and would increase to 538,000 by 2029 on existing trends. The MTS aims to increase the 2029 level to 839,000 trips per day or 0.4 bicycle trips per person per day or a quarter of the number of car trips per person (1.54). This is almost a four-fold absolute increase from 1991 for a doubling in the proportion from 5.7% to 11.5%..

46% of WA's population do not have driver's licences, of those who do, many do not have access to a car.

15a Trips to Work vs Total Trips Metropolitan Areas.
Note: Many other travel surveys count only trips to work. In Perth, 1.5% of trips to work are taken by bicycle and 10.3% of trips to school are taken by bicycle (ABS, 1994),. The overall bicycle transport modal split 5.7% of total trips reported in the MTS is almost four times the proportion of work trips, but only just over half that of trips to school. It is should be recognised that using only trips-to-work systematically underestimates bicycle transport's real modal share.

16. Bicycle Usage and Safety, WA 1989 Australian Bureau of Statistics. ABS 9215.5
27.5% of WA people five years old and over use bicycles once a week or more.

17. Bicycle Usage and Safety. NSW, 1988 Australian Bureau of Statistics ABS 4505.1
20% of NSW people five years old and over use bicycles once a week or more

18. Travel to Work and School, 1994 Greater Perth Region ABS 9201.5
1.5% of trips to work by bicycle. This is lower than a lot of other Australian cities.
10.3% of trips to study by bicycle
(MTS average is 5.7% of all trips in Perth, see ref 15)

19. Road Crashes Resulting in Hospitalisation, Australia 1991. Federal Office of Road Safety, published 1995.
Most recent summary of reliable road crash hospitalisation data. This shows that about 17% of all road crash hospitalisations in Australia are pedal cyclists
The proportions of cyclists among road crash hospitalisations in each state are shown in the table below.

NSW	Vic	Qld	SA	WA	Tas	Australia
14%•	17%•	21%•	15%•	19%•	12%•	17%•

These data can be used (cautiously) as an approximate surrogate for the missing Australia-wide bicycle usage data, using states like WA which have more reliable estimates of usage levels as benchmarks.

The data recorded by Police in all states systematically and seriously underestimates the level of bicycle crash hospitalisation (as well has having similar but smaller errors for other road user categories). For instance, only 5% of hospitalisation crashes reported to Police Australia-wide are pedal cyclists, compared to 17% actual admissions. About 80% of pedal cyclist admissions are single-vehicle (bicycle only) crashes.

20. Perth Photochemical Smog Study, 1996. WA Dept of Environmental Protection.
Like other capitals, Perth has a clear photochemical smog problem. *"Perth experiences photochemical smog to an extent similar to Brisbane, greater than Adelaide and somewhat less than Sydney and Melbourne"*
The study *"confirmed that motor vehicles are the dominant cause of Perth's smog". "Control of motor vehicle kilometres travelled and reactive organic compounds (ROC or petrol vapours) to be the most beneficial options".*

21 The Health of Nations. The costs of not promoting cycling. Prof H. Owen, Proc Velo Australis conference, 1996. Bikewest, WA. Department of Transport
Moderate exercise is a better preventer of premature death than stopping smoking, and even than vigorous sport.
Only 20% of Australians undertake enough exercise for optimal heart health.
The risk of being sedentary is of similar magnitude to smoking 20 cigarettes a day.
17% or $425 million of Australia's $2,500 million p.a. pharmaceutical benefits scheme goes on cardiovascular medicines. 11% to counter high blood pressure, and 6% for high cholesterol levels. Much of this could be saved if people took more exercise.
If 40% of the people who take drugs to control blood pressure exercised to control it instead, it would save more than $100M pa in drug costs alone.
"We need to make everyone aware of the economic benefits of promoting health through cycling for transport. It is a big task, but it can be done."

21a. Cycling towards health and safety. British Medical Association. 1992
Recommendation.

"Cycling should be actively promoted as an environmentally friendly means of transport and an effective way of improving public health."

22. "Factors Affecting Fatal Road Crash Trends", Pettit, Haynes and Choy,
Federal Office of Road Safety Report CR109, June 1992.
Australia's road toll falls sharply when people use less petrol and rises when fuel consumption increases. In fact, a 10% change in petrol use is correlated with a 25% change in fatal crashes, according to the most recent estimates of the factors that control the fatal crashes on our roads.
A 10% reduction in fuel sales shows reduction of 111 fatal crashes per quarter, or 444 per annum.

23. Henshaw, BTCE Occasional Paper 103, 1991
The BTCE report estimates the long-term price elasticity of petrol use is -0.66. Other estimates suggest -0.2 or -0.4 as a more likely figure. That is, for a 25% rise in price, usage will decrease crease by about 10% or 15%.

24. A 50 km/h general urban speed limit for NSW. Staysafe 34. Parliament of NSW, Joint Standing Committee on Road Safety. 1996
recommends lowering of urban speed limit, changes in penalties, better enforcement technologies.

25: 40km/h local area speed limit continuing trial report. Unley Council, SA. 1996
40km/h speed signs alone produced sustainable speed reductions even without systematic speed enforcement. The 40km/h trials have received continuing strong support from the community, and are now being extended to other parts of Adelaide.

26. Ministerial Task Force into Traffic Calming. WA 1995.
recommended 40km/h speed limits on access roads and local distributors.
and quoted UK report showing that when pedestrians are struck by a moving car

at 30 km/h 5% are killed, most injuries are slight, and 30% suffer no injury at all.
at 40 km/h 20% are killed
at 50 km/h 45% are killed and many are seriously injured
at 60 km/h 80% are killed

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