

SUBMISSION TO THE PUBLIC WORKS COMMITTEE
Parliament of South Australia
ON THE PROPOSED SOUTHERN EXPRESSWAY

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INTRODUCTION

This submission will express opposition to the building of the Southern Expressway. Using the available terms of reference, we shall seek to show that the Expressway, not only will not achieve its stated aim of bringing business development to southern Adelaide, but is a misuse of government funds which could with greater social and economic benefit be put to other uses.

Since some of our arguments apply to more than one of the terms of reference, we shall, from time to time refer back to previous material used earlier in the paper.

Accordingly we are addressing each of the stated terms of reference, as set out in the advertisement on page 17 of the *Southern Times Messenger* of 1 November 1995, which was the first information we had to tell us the date when the proposed work would be reviewed by the Committee.

THE STATED PURPOSE OF THE WORK

The stated purposes of the work, as interpreted by us from the Premier's media release of 21 March 1995 include:

- (1) to provide a fast track road and take pressure off South Road and avoid the Morphett Vale area
- (2) to reduce congestion
- (3) to service the needs of north bound traffic in the morning and south bound traffic in the afternoon:

*In the morning it will service the heavy demands of a north-bound traffic and in the afternoon it will revert of a south-bound only expressway.
(p.1 Media Release)*

- (4) To provide jobs and enhance business development in the southern suburbs.

OUR RESPONSE

We shall argue that the Expressway will achieve purposes one and two only on a short-term basis, and that purposes three and four are contradictory in nature.

The conventional wisdom has been that additional road space reduces congestion and that when congestion returns it is due to inevitable growth of traffic.

A report published in the UK by Greenpeace Roads, Jobs and the Economy: John Whitelegg, Eco-Loggia Ltd, challenges this assumption.

In criticising a report published by the British Roads Federation (BRF, 1994) the author says:

The report is based on seriously flawed assumptions. The report assumes that additional road capacity will free up road space and hence lead to a reduction in congestion and saving in journey time. Evidence available from academic sources and from SACTRA, the government's own advisory body, show that new road capacity generates new traffic. The degree to which the M25 is used for local trips is illustrative of the underlying process which incorporates road capacity in new patterns of local travel, thus negating the predicted economic advantages of reduced congestion.

In California, only 18% of people believe that building freeways will solve traffic problems. (Newman, public meeting, 1994)

The Solution to Route Twenty and a New Vision for Brisbane, a publication produced by Citizens Against Route Twenty states:

It is claimed that it is irresponsible not to build larger road to cater for forecasted traffic growth. But it is Universally acknowledged that new or upgraded roads generate traffic for the following reasons:

- 1. New trip destinations are made possible. ...*
- 2. The frequency of some trips increases because access is now easier.*
- 3. People take jobs further from their homes. [So much for jobs in the South!]*
- 4. Some people shift from public transport to private car due to the trip time for the car being reduced.*
- 5. As patronage for public transport decreases public transport becomes less viable and service deteriorates, encouraging even more people to use their cars.*
- 6. New or upgraded roads displace people, spreading the city and therefore requiring that more people travel longer distances, again reducing the viability of public transport.*

The publication also shows how after traffic predictions have led to road upgrading the increased traffic fills the available road space and leads to even greater predictions of traffic growth. (pps.10,11)

Engwicht, (1992), gives a hypothetical example of "cross-commuting", where two garage mechanics drive 35 km by freeway to similar jobs, each within walking distance of the other's home. While this example is hypothetical, similar occurrences occur in Adelaide today, and the building of freeways increases their incidence. (pp 46, 47)

The *Asphalt Institute Quarterly* of 1967 says:

Every new mile tacked onto the paved road and street system is accompanied by the consumption of about 50 000 additional gallons of motor fuel a year."(Quoted by Owen, *Newspeak Times*, 1995)

Employment in the South

It seems inconceivable to us that the road can simultaneously transport people to jobs north of Darlington and create jobs in the South.

A South Australian Transport Study of the Southern Region - stated assumptions

"The Southern Region Road Improvement Strategy", December 1983 (Synopsis in *Transport Planning and North-South Road Infrastructure*, 1991) includes among its assumptions:

There would be no significant increase in employment in the Southern Sector due to lack of incentives or advantages for industries to locate south of Darlington. A dependence on the inner suburbs for employment would continue, which would exacerbate the tidal flow of traffic in the north-south direction ...

Journey to Work Census figures form 1976 to 1981 showed 60% of the work force residing within the Southern Sector were employed within the inner metropolitan area north of Darlington (in particular the north-western, western and south-western suburbs, and the CBD.

The study also made the assumption that public transport had limited scope to accommodate journeys to work across a diverse employment area.

We intend to challenge this assumption later in our submission.

The Southern Expressway is planned to begin as a "one-way reversible expressway" leading towards Adelaide in the morning and away from it in the afternoon. While not all trips northwards in the morning will end in the CBD, it is hard to see how being able to travel marginally faster northwards in the morning and southwards in the afternoon will benefit businesses in the southern area, eg Reynella or Noarlunga.

Most employees travel to work in the morning and many businesses require delivery of goods in the morning. Employees travelling southwards to work (eg at Noarlunga Centre) and southern businesses requiring goods from the CBD or northern suburbs warehouses can derive little benefit from a road going in the opposite direction from that in which they or their goods need to travel. Even granted that the Expressway may reduce traffic on South Road, it will only reduce the city commuter peak, which is largely irrelevant to people travelling in the opposite direction.

As seen above, the building of major roads leads to dispersal of facilities, because if people can get to large shopping centres along major roads, they tend to bypass local shops and other facilities. This tendency would be especially marked along the Southern Expressway, with no shops, no houses and limited entry and exit points. Local shopping areas would be degraded or closed down, disadvantaging people without access to a car, including people left at home while their spouses/partners are at work with the car.

Already there is anecdotal evidence of empty shops at Noarlunga Centre. If the Government really wants to aid the development of business in the far south it should not build a road to take people away from it.

Michael Lennon, Research Fellow with the Geography Department of the University of Adelaide has said that the road will not only make the city a stronger competitor with Noarlunga Centre, but that the development plans for Marion Shopping Centre also need to be considered in this context. These include a proposal for a further 5 000 car parking spaces. (Lennon, 1995)

We consider that it is undesirable for a suburban centre, other than a regional centre, to grow to an excessive size and take business away from local centres. While there are buses to Marion Centre, the plan clearly anticipates that the bulk of new clientele will arrive by car.

This has serious implications in terms of traffic congestion north of Darlington. The PTU Review (Spring 1995) predicts that there will be an extra 7 000 cars a day on Marion Road if the Expressway is built.

There is considerable support for the view that the provision of transport does not of itself lead to economic development of an area.

Feldman (1977) challenges the concept that transportation leads to employment, asserting that it leads to a longer journey to work and continued development of established areas.

Engwicht (1992) details how faster transport in recent history has not reduced time spent travelling to work because of greater distances travelled, and also shows that the average speed of motor vehicles in Australian cities has not increased since the 1920s.

Herbert and Thomas (*Cities in Space*: 1990) show that initial advantages lead to continued development in favoured areas, and dispersal of activity will not occur unless actively planned.

The building of the road will lead to increased dispersion of housing but no increased employment in the south. People will simply travel further to work.

Employment in the South

Since there already is a considerable population in the far southern suburbs, it is desirable to supply them with local employment, especially where this is accessible by public transport. (At present there is an emphasis on transport towards the CBD, but relatively poor local transport. The Adelaide Noarlunga railway line also is not readily accessible to people living inland from it: see below).

But which employers should be based in the south? It is unlikely that existing employers in the northern suburbs will re-locate to the south, as they are in established industrial areas, with access to warehouses, and rail transport or port facilities in many instances, while others are located on the edge of Adelaide near major north-bound highways.

Overseas and interstate industry is more likely to locate north of Adelaide, because of access to freight and other industries.

The best way to provide jobs in the south is to encourage small, diverse local industries. (See the work of Herbert and Thomas on the development of Italian industry.)

Small-scale niche markets are the path to wealth without huge resource outlays. These are often successfully integrated with housing areas. Existing businesses in the south need support.

There is no doubt that the building of the road will provide some short-term jobs in road construction and that it will need repairing from time to time. But construction jobs are available for anything which is constructed: a road, a light railway, a hospital, and, in a sense, planting a forest. It is worth enquiring into the public utility of what is constructed, rather than viewing construction as an end in itself.

THE NECESSITY OR ADVISABILITY OF CONSTRUCTING IT

As seen above, the expressway is unlikely of itself to produce long-term jobs in the south, and may have a counter-productive effect on southern economic activity by producing a fast track to the north.

We have also questioned whether the reductions in congestion which would make it easier to travel north would be permanent.

No doubt, when one road fills up another can be built, but at what cost? We propose to analyse some of the disbenefits to the social fabric, the environment and health which would accrue from the building of the road, and its successors. We shall also maintain that a public transport alternative, together with the recommended support for small businesses in the south, would be a better solution to transport problems.

The Social Fabric

Engwicht (1992) quotes a study of streets in San Francisco that indicates that the more traffic on a street the fewer friends and acquaintances in the street were claimed by residents, and the smaller the area they regarded as "home territory".(pp 48, 49)

While the Southern Expressway is claimed to be a road with no houses, there will be people living near it. Large roads can cut communities in two. The friend across the road and round the corner becomes the friend across the highway that you have to drive two kilometres to access or leave by car, or walk the long way round via the pedestrian overpass. Very often the delicatessen round the corner becomes largely inaccessible on foot, so why not drive to the supermarket a few kilometres away?

Noise is another problem which may face people living near the Expressway.

While people do belong to forms of community outside their immediate home area, eg work place communities, sporting clubs, the streets where people live tend to become an impersonal no-person's land, with consequent danger to unaccompanied children, and loss of social cohesiveness, leading to a greater risk of vandalism and crime.

Air Pollution - The Environment

It has been argued above that the building of freeways leads to greater use of the private car. This negates any temporary gains in fuel efficiency per kilometre which may accrue at the beginning of the freeway's life.

Greater distances travelled lead to greater greenhouse emissions, in particular, of CO₂. The enhanced greenhouse effect has impacts which include economic impacts, for example: changes in weather patterns leading to loss/change of agricultural production, increase of insect-borne disease affecting humans, animals and plants, loss of beaches and other low lying areas to rising sea levels, possible increase in storm damage, loss/migration of native species leading to adverse effects on current ecosystem and loss of tourism amenity.

While greenhouse warming will affect human health in ways outlined above, other forms air of pollution affect human health in a more direct and short-term manner as well as impacting on natural ecosystems.

Air Pollution - Human Health

The use of fossil fuels in internal combustion engines results in considerable air pollution directly harmful to human health. Emissions include Carbon Monoxide (CO) which depletes oxygen in body tissues. Prolonged exposure may impair higher nervous functions and contribute to heart disease. Other products include Nitrogen Oxide (NO₂), a respiratory irritant which can cause bronchitis, lower resistance to respiratory ailments and exacerbate asthma, ozone, which also aggravates asthma as well as having other ill effects, PM 10s, small particles which can affect lung function, lead, and benzene, a carcinogen. (Choice July 1995)

Associate Professor Harry Owen, of Flinders University and Medical Centre says that every time PM 10s increase by 10 micrograms per cubic litre of air, deaths from heart attacks rise by 1.4%, deaths from bronchitis by 3.4% and reports of asthma attacks by 3%. (Owen 1994)

Other forms of Pollution

Run-off from the road, including oil and petrol spillages, and products from brake deterioration could run into Sturt Creek unless carefully controlled.

Noise can affect sleep, mental concentration and cardiovascular performance.

The Undesirability of Increasing Private Car Use

We have already argued under term of reference "THE STATED PURPOSE OF THE WORK" that the building of the Expressway would lead to increased travel, especially by private car. We shall maintain that the private car is the most polluting form of land travel commonly in use.

In this discussion pollution produced during the running of the vehicle only considered.

Buses and trains powered by internal combustion engines also produce the pollutants mentioned above, but because of their greater passenger load relative to fuel used, the effect on the environment is less severe.

Electric public transport vehicles: light and heavy electric Rail, trolley buses, do, under present technology, contribute to greenhouse emissions through CO₂ and other pollutants associated with electricity generation, and may cause small scale pollution through leaks from lubricating oil, brakes, etc. However the economies resulting from greater fuel efficiencies, as with buses, help to mitigate this. These vehicles do not significantly contribute to air pollution at the point of use, as do internal combustion engines.

Below are some fuel consumption figures obtained from TransAdelaide in 1994.

Bus fuel consumption:

- (1) Rigid (45 seat) 39-41 litres per 100 km
- (2) Articulated (74 seat) 51 litres per 100 km
- (3) Midi (new: seat 24) 30 litres per 100 km

Train fuel consumption:

- (1) 3 000 Class (110 seats: each car has own engine)
0.9 litres km
- (2) 2 000 Class (2-car set: 170 seat) 2.5 litres
per km [one engine]
- (3) 2 000 Class (3-car set: 275 seat) 3.5

"Average Car":

12 litres per 100 km

(agrees with ENSTAT 1992 p.46 Table 6.6)

Average loading 1.3 people = .09 litres per passenger km

(However, *The Greenhouse Strategy for South Australia* (1992) says large car 9 litres 100 km, small 4 litres 100

"Average bus":

.03 litres per passenger km

(based on average loading of 15 people).

CNG buses produce less CO₂ than equivalent diesel buses and are low in pollutants although producing some oxides of nitrogen.

Greenhouse savings through using CNG:

CNG 15% less greenhouse emissions than diesel, even less than petrol (Petrol=1, CNG = .81, with future technology may = .62-.64 (Greenhouse and Energy: D J Swaine)

Source: TransAdelaide 1994

Walking and cycling cause virtually no air pollution during the actual activity. While the Expressway plans make provision for a cycle track, there does not seem to be a commitment to its immediate construction. We are not satisfied that:

- (a) it will actually be built
- (b) access will be safe and easy
- (c) cyclists will be adequately protected from noise and fumes from the Expressway
- (d) it will be pleasant to use, given (c).

As seen above, these modes of transport become less practicable when freeways are built.

Is public transport a realistic alternative to the Expressway?

Adelaide's public transport patronage has declined over the past decade. (see table below) This decline has been accompanied, if not preceded, by a lack of faith in the capacity of public transport to cover a good deal of Adelaide's personal transport needs.

For example, the *Adelaide Transportation 1970 Report* says:

A transportation plan for the future must be predicated on the concept one has of Adelaide in the future. That concept marks the convergence of policies and predictions in many fields besides transportation.

It is not for us, who live ten thousand miles away, [in the US] to impose our decision as to the direction in which this city should evolve. ...

The concept that emerges implicitly from the MATS plan is a continuation of present trend, which the plan then sets out to reinforce. We do not say that this is necessarily unacceptable, but we feel that it emerges by default, rather than by design....

Every Eden has its serpent; Adelaide, like other cities, has three: Smog, slum and sprawl.

In other words, the powers that were in 1970 were not prepared to attempt to change the status quo, and the consultants, while cautiously pointing out that there were alternatives, went along with the government.

The assumptions of "The Southern Region Road Improvement Strategy" (1983) "that public transport had limited scope to accommodate the journeys to work across a diverse employment area", are reinforced by the "Seaford Review of Arterial Road Needs", (October 1989) the summary of which states: "Extension of public transport services would be unlikely to reduce the dominance of car travel". (*Transport Planning and North-South Road Infrastructure* (SA Government 1991)

It seems that there never really has been, at least since 1970, a serious attempt by governments or transport planners to challenge the dominance of private car travel in Adelaide, either through major upgrading of public transport or by urban planning designed to reduce the need for car travel.

By contrast, the UK Government's Royal Commission into Environmental Pollution (Eighteenth Report: 1994), not only acknowledges that public transport is more energy efficient on the average than the private car, but recommends that targets be set for increasing the percentage of public transport kilometres from 12% in 1993, to 20% in 2005 and 30% in 2020. (14.71: D1) The report says that transport planning needs to be integrated with land use planning and alternatives to road building examined. (14.57; recommendation 49)

We are not suggesting that all metropolitan journeys can be made by public transport, on foot or by bicycle. But we are suggesting that public transport and other modes have not been given the commitment and level of funding that they deserve, while funds have been freely given for road building. We are also maintaining that this investment is not the best use of transport funds.

The Advertiser, in its editorial of 13 July 1995, says that (TransAdelaide) bus passenger journeys have fallen by 30 million over ten years. TransAdelaide statistics indicate a total loss over ten years of about 16 million boardings. Boardings are different from journeys as defined by the Crouzet System, where if a passenger reboards and uses the same two hour or day-trip fare the second or subsequent boarding is considered to be the same trip.

TOTAL BOARDINGS STA/TRANSADELAIDE OVER TEN YEARS
(to nearest 1 000)

1984-85	78,873,000
1985-86	81,521,000
1986-87	73,408,000
1988-89	74,372,000
1989-90	74,368,000
1990-91	79,063,000
1991-92	73,354,000
1992-93	67,177,000
1993-94	66,478,000
1994-95	62,463,000

The rise in patronage in 1990-91 corresponds to the introduction of free school travel in 1990, and the fall in patronage in 91-92 and 92-93, to its withdrawal in 1992. Free school passes to students from low income families were withdrawn in September 94, to which TransAdelaide attributes half of its loss of patronage between 93-94 and 94-95.

The above figures would seem to indicate the inexorable decline in Adelaide public transport. However, Government policies have affected transport patronage. TransAdelaide has attributed fluctuations to the introduction of free transport for school children in 1990, and its withdrawal in 1992, but the drop in 1991-92 and 1992-93 is too great to attribute to this alone, since patronage rose by 5 million (1990-91) when free school transport was introduced, but was reduced by 6 million in the 1991-92 figures and by 7 million more in the 1992-93 figures. We attribute some of this loss to the withdrawal and reduction of "poorly patronised" night and weekend services in August 1992 and the withdrawal of train guards at about this time. Added to this was the uncertainty and industrial action which preceded these changes.

However, Associate Professor Peter Newman, in his paper to the Rail 2000 Conference in April 1995, paints a more optimistic picture of public transport in Australia and overseas.

His figures for per capita use of transit in Australian Cities 1961-1991 show that the biggest drop for all mainland capitals (except Canberra) in the ten year intervals from 1961 to 1991 was from 1961 to 1971. Between 1981 and 1991, per capita transit use rose in Melbourne, Sydney and Canberra, and the overall decline in per capita transit use was levelling out in 1991. (See attachment)

Newman instances the Northern Suburbs Rapid Transit system in Perth as an example of a successful public transport venture despite predictions that it would fail.

The northern suburb area had been served by a freeway, plus some buses. By the 1980s the freeway was clogged at peak hour. A strong political push resulted in the Northern Suburbs Rapid Transit System, a 33 km electric rail service with 7 stations linked by feeder buses. (Newman 1995) The system cost \$220 million, including the trains. (*Habitat*, February 1995)

It was predicted that public transport patronage would fall, because people did not like to change vehicles. In fact, patronage of the Rail-bus system increased 40% over that of the former bus-only corridor. Twenty five percent of patrons had previously made the journey by car. The system is now almost breaking even on running costs. (Newman 1995)

This case is interesting because it indicates:

- (1) Good public transport can get people out of their cars, even in Australia.
- (2) A railed public transport system, eg electric light rail, is almost as cheap per kilometre to build and equip as the projected cost of a freeway. (Compare \$220 million for 33 km for a light rail in Perth [including trains] with the projected cost of \$112 million for a 21 km Expressway in Adelaide, for which the government will not be collecting fare revenue.)

In a survey of city car park patrons conducted by People for Public Transport in Adelaide, 1989, 60% of respondents said they would use public transport if it were improved, and frequency of service was the most frequently mentioned improvement (39%).

There is a certain level of service needed to make public transport viable. We maintain that there has been a lack of political will to fund this "critical mass" of public transport convenience and frequency.

An example of this in the south is the failure of feeder buses at Hallett Cove Beach Station to meet every train that stops there, including peak hour trains. (See Noarlunga Train and 680-2 bus timetables).

This failure of political will to provide a user-friendly public transport system will result in costs to public health, the environment and the social fabric.

We would also like to point out that the area proposed for the start of the road contains significant aboriginal sites and remnant native vegetation.

There is also an area of Mallee Box on Beach Road, Noarlunga, which will be affected by the second stage of the road.

THE PRESENT AND PROSPECTIVE PUBLIC VALUE OF THE WORK

We have already alluded to, under the previous term of reference, the lack of value of the Expressway, from a social, health and environmental point of view.

We would also point out some studies which question the economic value of investing in roads, as opposed to transit.

Aschauer and Campbell (1991) found that:

Transit spending has more than twice the potential to improve worker productivity than does highway spending.

(Quoted by Newman, 1995)

A 10 year, \$100 billion increase in transit investment would yield improved worker output valued at \$521 billion, comparable expenditure on highway, \$237. (Newman, 1995, from Aschauer and Campbell)

Newman also comments that the UK Government in its 1995 budget, scrapped more than half of its motorway programmes, while maintaining expenditure on public transport.

THE RECURRENT OR WHOLE-OF-LIFE COSTS ASSOCIATED WITH THE WORK,
INCLUDING COSTS ARISING OUT OF FINANCIAL ARRANGEMENTS

We have already alluded to costs to health and the environment from the building of freeways such as the Southern Expressway. While it is not possible for us to do a detailed financial analysis, we would like to point out some of the financial costs of a policy of freeway building rather than subsidising other modes of transport.

A table of costs from Newman's paper is appended.

E N D

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ATTACHMENT - from P Newman's Paper to Rail 2000 Conference