

At the Pearlman hearing I incorrectly stated "The terms of reference were changed". M/s Riggs, head of DOTARS rejected my allegation and stated "The terms of reference were not changed".

I should have stated "SKM was directed not to comply with the Terms of Reference." My simple error meant DOTARS and the RTA were not held to account (Transcript held).

However this does not alter the fact SKM was directed not to comply with its Terms of Reference.

***6: Minister Lloyd's Chief of staff 20 September 2007 letter re Administrative Decisions Tribunal Planning meeting on 21 August 2007: "Waite v NSW Roads and Traffic Authority"**

Extracts: Hon Marla Pearlman's findings 'The Review report confirmed the original decision by the Australian Government to provide a link between the F3 and M2, broadly along the alignment of Pennant Hill's Road. It recommended that:

The preferred route follow the Purple Option and that this now be progressed to the next stages of investigation including; detailed design, economic and financial assessment and environmental impact assessment; and

An Option C (western) corridor be planned now.

Minister Lloyd said the report had identified a small number of issues that would require consideration in the preparation of an environmental impact statement and that further public consultation would be a key element in taking the project forward and determining the precise route for the link.

Mr Lloyd has also written to the Hon Eric Roozendaal MLC, NSW Government Roads Minister, to advise him of the outcome of the Review and to seek from him an update on planning of the Option C corridor, which the NSW Government committed to undertake in its Sydney Metropolitan Strategy released in 2005.

I have enclosed for your information a copy of the Review final report.

Thank you for your participation in the Review process.

Yours sincerely

John Abel

Chief of Staff.

[REDACTED] (Also at 14)
Refer to page 2 of my 21 March 2005 letter to DOTARS Ed Cory about his meeting at the Pennant Hills Civic Trust organised by The Hon Phillip Ruddock MP. refer item 4 pages 5/16

After that meeting Ruddock invited Lloyd to attend his Federal Electorate Committee to explain to what occurred with the SKM study and why it was compromised. When the meeting was held, Lloyd couldn't explain what happened, admitted he didn't know, and left the meeting after Ruddock decided it was best he didn't remain to answer any more questions from the floor. (Not sure of date.)

I then helped Lloyd and his secretary leave the locked office and then returned to the meeting.

- To investigate options for a new National Highway connection between the Newcastle Freeway (F3) and the future Sydney Orbital. The new connection will replace Pennant Hills Road as the National Highway route (Newsletter No 1 – April 2002) ²².

The chosen route does not replace Pennant Hills Road as the National Highway.

In 1994 the RTA 'Liverpool to Hornsby Highway Study Workshop 3' reported "the tunnel under Pennant Hills Road offers poor connectivity" ^{15/3} and "overall the participants voiced a preference for the Wallgrove Expressway Strategy". It also states "options include the new route via Dural in serving present industrial and future residential areas have high economic returns despite their high cost" ^{15/3}. **What has changed since then?**

In several places and the concluding paragraphs on page of the 20.2 SKM 'Main Report – April 2004' acknowledges the tunnel is a short term solution. It also made recommendations to have access to solve local traffic problems. That is not the purpose of a National Highway.

The 1994 report ^{15/3} states "A Preferred Strategy ----- 4: Review and develop a new northern link". After 10 years the time is long past for short term solutions, it is time to deal with the solution properly.

Despite several substantive submissions raising serious doubts over the consultative process as well as a meeting with the consultants, DIPNR and RTA, and also meetings with Ministers no substantive evidence has been produced to prove the best route was chosen.

The study, Minister Lloyd and many members of the community agree a second crossing of the Hawkesbury will be necessary before 2020 and also has a high strategic value. This being the case the environment, cost and other red herrings thrown up to justify an inferior solution are irrelevant. Eventually these issues will have to be faced because there is no other alternative to Option C.

The longer an Option C decision is avoided, the harder it will be to find a new corridor. It is a stand alone solution that does not rely on billions of dollars of uncoded assumptions for the selected route.

The time is past to go through the report to try to identify every individual issue when so many fundamental planning principles have been avoided. Explanations must be given as to why all the basic issues that have been previously raised have not been proven incorrect by producing the references in the report that proves or disproves the assumptions made.

Historical – recent documents and newspaper articles

June 7, 1971.²³ 'The Sun reports on "The shape of things to come on Sydney Highways over the next 30 years". June 12?, 1971²⁴ shows the 'M2' and part of the link to the F3. SKM's report²⁵ details the 'Serious and fatal crash rate (per km of route per year) for the Pacific Hwy north of Ryde Road as 23'. The selected route will do nothing to address this most serious issue. The Lane Cove route as originally planned and supported by Hornsby Council²⁰ would dramatically reduce the traffic and accidents on the Pacific Highway. **This is a State funding matter that has been ignored.**

Informed community comment p19 'Working Paper 1 – Community Consultation'²⁶ questioned in par 2 problems in the NE had not been sufficiently addressed. Under 4.2.3 concern was expressed at the long term needs for option 'C'.

Apparent inappropriate input to study by NSW Department of Infrastructure Planning and Natural Resources (DIPNR). SMH 24/8/2004²⁷ – "Motorway designers must learn from past mistakes". This article promotes widening of Parramatta Road footpaths and bus lanes after the proposed Strathfield to Haberfield tunnel is built. Similar comments have been made in regards to the M4 East tunnel under William Street. Page 12 of the July 2003 'SKM Background Report'²⁸ example Pennant Hills Road as having similar treatment. Also refer to p90 'Working Paper 4 – Traffic & Transportation'.²⁹

The SMH 12 March 2005³⁰ examples how Traffic levels have been grossly underestimated for many years whilst on 14 March two examples^{31, 32} are given showing the next 30 year strategy is overdue. Based on the 1971 report it is absurd and grossly irresponsible of governments to not have rolling plans that have a continual 25 to 50 year lead time.

Two articles in the 18 March 2005 Herald³³ highlight the 'crises management' of the State Government that is being propped up by a Federal Government that does not appear to care about the outcomes.

Main Report – April 2004 – Introduction

Page 3 Figure 3³⁴ details existing traffic volumes at strategic locations. **Are these accurate?** In 1975 the Hornsby Police Traffic Sergeant, ^{who still lives in Pennant Hills,} advised the Pennant Hills Residents Association ^(now Civic Trust) Pennant Hills Road will never be a 24 hour 'clearway'³⁵. Just prior to the M2 opening then A. Police Commissioner Lola Scott ^(Beecroft resident) advised a large meeting at Pennant Hills Bowling Club "when the M2 is opened there will be no more traffic problems". Newspaper reports claim vehicle sales in 2004 dramatically increased to nearly 1 million. On a population basis it is reasonable to suggest over 250,000 would be in the Sydney region.

Page 6³⁶ sets out Transport Network Improvement Assumptions. These assumptions are uncoded and could amount to \$10 billion. Option C is a stand alone Option that will be shown to have a far greater reduction on Pennant Hills Road traffic than the proposed tunnel.

***5: Pearlman Inquiry;** In January 2006 Minister Lloyd agreed to Hills Motorway (now Transurban) request for a review of SKM's findings. Hills claimed discrepancies in the SKM report and the tunnel should join the M2 further East. That was one of the four Type A (Eastern) options.

My submission had a large map that compared an F3 – M7 link with the F3 – M2 link and SKM costings. These indicated the 2004 costs were both about \$3 billion. **M/s Pearlman chose to use my map instead of DOTARS.** In my opinion this is why she included **"3. (b) a type C corridor be planned now"** in her letter despite it not being in the Terms of Reference.

DOTARS engaged Masson Wilson Twiney (MWT) to review SKM's calculations. **MWT's 22 March 2007 Executive Summary concluded:**

"Beyond 2021, when capacity of a six lane F3 is likely to be exceeded in peak periods, a type C (western F3-M7) option may become a justifiable project, depending upon the manner in which Sydney, the Central Coast and Lower Hunter develop. Consequently, a decision will be required about a long term solution to traffic capacity in the Sydney Orbital to Central Coast corridor. This will revolve around:

- **An eight-lane F3**
- **A Type C option**

Both will require capacity augmentation in the Sydney road network.

Measures to improve train accessibility from the Central Coast to Sydney and land use measures, among others, may defer the need for a long term option, depending on their success. Conversely, faster than forecast travel demand may require a long term option sooner than 2012."

Verbatim: **The Hon Mahla Pearlman's 31 August 2007 letter to:**

"The Hon Jim Lloyd MP, Minister for . . . and Roads, Parliament House, CANBERRA ACT 2600
I am pleased to present the Review report for your consideration.

I have given due consideration to the MWT "interim report – F3 to Sydney Orbital Corridor Review (March 2006)" and concluded the following:

1. *That the assumptions and data used in the SKM 'F3 to Sydney Orbital Link Study 2004' were valid and reasonable at that time of the study;*
2. *that there have been changes affecting land use and traffic flows since the SKM Study's publication, but that these changes reinforce the selection of the preferred route; and*
3. *that the SKM Study recommendations progress as follows:*
 - (a) *the preferred route follow a Type A corridor Purple option and that this be progressed to the next stages of investigation including detailed concept design and financial assessment and environmental impact assessment; and*
 - (b) *a type C corridor be planned now.*

The NSW Government indicated in its submission to the Review its intention to develop a discussion paper on the connection of the F3 to the M2 and or M7. I am confident that my Review has undertaken a sufficiently rigorous and detailed analysis on the proposed connect to both inform and direct any future Government investigations. I would encourage both the Australian and NSW Government to proceed directly with the next stages of a Type A Purple option link connection the F3 to M2.

Yours sincerely

THE HON MAHLA PEARLMAN AO"

The Review was a 106 page A4 paper that included a list of those who addressed the Inquiry. This included an RTA officer's reply to a question at the Dural Focus Group Meeting on **28 August 2003: Citizen's statement:** "Need for change in attitude by government" **Reply:** "JB (RTA) commented that this is a transport study and RTA/DoTARS cannot dictate policy to DIPNR."

Summation of SKM's F3 to Sydney Orbital Report

No reference or provision is made for the diversion of traffic when the tunnel is closed as it will be from time to time due to computer and power failures, fire, breakdowns, accidents and maintenance. **The only reasonable explanation is because there is no alternate route.**

The report indicates two lanes each way will be required if there is a toll and three lanes each way without a toll. How will this affect the traffic if Pennant Hills Road is narrowed to 2 lanes in each direction as suggested?

Newsletter 2 suggests Option C would only reduce traffic on Pennant Hills Road by up to 10,000 vehicles per day by 2021 (about 10%⁵⁷). Page 10⁵³ of the VM Workshop suggests a 20% redistribution of traffic by building the tunnel. What does this mean? 'Working paper 4' page 122⁴⁵ suggests only 19,000 or 20% vehicles per day would use option C by 2021.

As against the above, estimates in the 'Working Papers 4 – Traffic & Transportation' on pages 22, 40 and 43 and the 'Value Management Workshop' page 7 all indicate 57 to 60% of the F3 traffic could use Option C. Even if the 57 to 60% was reduced to 40% this is a 100% improvement on the Working paper 4 20 percent estimates⁴⁵ and 200% percent better than Newsletter 2 estimates⁵⁷.

The selected route DOES NOT meet the: The PURPOSE of the F3 to Sydney Orbital Link Study:

- To investigate options for a new National Highway 'ROUTE' ('CONNECTION' in Newsletter 1²²) between the Newcastle Freeway (F3) and the future Sydney Orbital. **The new route will replace Pennant Hills Road as the National Highway.** (Newsletter No 2 – July 2003⁵⁸)
- May 7, 2004 SMH Herald⁵⁹ "The aim of the study was to identify a high standard transport link (not route or connection) between the F3 and the Sydney Orbital. **The new link (not connection or route) would replace Pennant Hills Road as the National Highway**".

Conclusion

The only conclusion that can be arrived at from available information is:

- the Commonwealth Government has allowed the NSW Government to hijack their study to overcome local traffic problems without any serious thought for the future,*

PS Comments attributed to Minister Anderson (SMH 21/3/05 Safer Pacific Highway just got closer⁶⁰) further detract from the credibility of the SKM report

Page 11

July 2014: I believe my comments on page 11 of my letter are sufficient justification to show the SKM study lacks credibility and cannot be relied [REDACTED]
[REDACTED] I do not suggest SKM's study prepared in accordance with the 2003 directions, or the 2007 Pearlman findings were wrong.

Peter Waite

Working Paper 4 – Traffic & Transportation.

Page 20³⁷ splits 'Sydney' into 5 regions by Local Government Boundaries. The demographic centre of Sydney is located around Silverwater Bridge. This is in the studies 'Western Region'.

Page 21³⁸ shows the concentration and disparity in size of the various Local Government Areas.

Page 22³⁹ uses a table and 'star' diagram 'number plate survey' Figure 2.9 to show that 60% of traffic comes from the Northwest, North, West and Southwest-South areas of Sydney. (Being about 20km shorter Option C would be the preferred route for most of this traffic and a higher %age of trucks. Every attempt should be made to ensure there are no tunnels so that dangerous goods and oversize loads can use Option C.)

Page 40⁴⁰ uses a 'pie chart' to show truck trips 6am to 6pm. This is misleading in that the NW sector is shown between the NE and 'east – city' sector.

Page 43⁴¹ has the 'pie chart' correctly divided but incorrectly oriented. (57% trucks would use Option C) Table 3-4 indicates the 71,200 vehicles crossing the Hawkesbury is only half of the total vehicles using the Pacific Highway South of Telegraph Road and Pennant Hills Road North of Boundary Road. Figure 3.6 indicates 57% of trucks Southern origins/destinations are to the western sectors whilst only 51% of origins/destinations are to the western sectors. No explanations are offered for this discrepancy.

Page 73⁴² Figure 6.2 refers to zones used in this study and suggest the annual traffic growth would drop to 1.5%pa over the next 20 years. This diagram does not include meaningful traffic counts for 10 zones as against the 5 regions previously used as a basis for comparison.

Page 75⁴³ Figure 6.3 also uses the zone system. This has severely compromised the study. No explanation for the different methodology is given.

Page 118⁴⁴ Figure 14.1 suggests a convoluted route for 'C Option 10' without any explanation. Such a route would cut about 20kms off the trip for the 60% of the traffic that would use the existing route and/or proposed tunnel or Pacific Highway.

Page 122⁴⁵ suggests that by 2021 only 20% of the total traffic volumes would use the 'C Option 10'. Noting the 12 March Herald Article regarding traffic projections it is submitted that a 3%pa traffic increase is more realistic than the 1.5% suggested in the SKM report (figure 6.2). This would increase the traffic volumes by 125,000 or 25% by 2021. This is 26,000 over the 99,000 quoted in table 15.1⁴⁵.

Page 8

Page 182.⁴⁶ "29 The reallocation of road space on the existing Pennant Hills Road would be essential part of the project. These works have not been fully investigated and therefore not costed in the estimate of costs given in Working Paper 2'. This question was raised at the 5th November meeting. The RTA advised this cost would not be borne by the RTA. This is further evidence of DIPNR's input.

Page 25⁴⁷ diagram 2.13 refers to a number plate survey. Assuming 4% of the 54% from the Pacific Highway and F3 has destinations south of Ryde and Boundary Roads where does the remaining 50% of traffic from the F3 go? It is inconceivable that it is all going to Hornsby and the NE Region.

Page 70⁴⁸ Diagram 6.1 uses estimated numbers as against %ages in diagram 2.13. Figures and %ages for the Pacific Highway and Ryde Road in these two diagrams appear to conflict with each other. Figure 2.13 shows Ryde Road as having 11% against the 20% using the Pacific Highway whilst figure 6.1 shows 84,300 using Ryde Road as against 56,000 using the Pacific Highway. Both cannot be correct.

Working Paper 1 - Community Consultation

Page 20.⁴⁹ "there was strong support for further investigation of a Type C option, on the basis a long term solution was needed".

Several other reasons to justify Option C were also listed.

Page 36:⁵⁰ 5.1 Key Outcomes Par 2: "Type C options would be further investigated to provide a long term western route and potential second crossing of the Hawkesbury. Making provision for such a route through the planning process was important to many members of the community and key stakeholders".

Value Management Workshop No2 Record – SEPTEMBER 2003

Page 7⁵¹ reports that approximately 3 vehicles in 5 from the F3 travel down the Pacific Highway whilst the %ages quoted indicate only 40% travel to the City and North East. Refer to fig 2.13⁴⁷. Which is right?

The same page indicates 57% of heavy vehicles have origins/destinations that would use Pennant Hills Road. This coincides with the figures given out at the Community Consultative meeting at Galston in August 2003.

Page 5.⁵² RTA's Dr Kis. reports "there are not many examples in the world of tunnels 6-8 km long and certainly none in Australia. **Therefore, if the project proceeds there will be a multitude of technical challenges to be addressed, not to mention the social challenges that would arise**". This statement is cause for deep concern and should have been seriously addressed by the Ministers before they agreed to accept the Purple A Option.

Professional commentators at this workshop raised some serious concerns over the proposed tunnel option. P10⁵³ : "By building this new link there would be a redistribution of up to 20% of traffic in the corridor that would provide benefits throughout the rest of the northern network". This is misleading because the chosen route will not greatly alter the traffic on the Pacific Highway south of the F3.

Pages 11 and 12⁵⁴ also raise issues that have not been answered in the study. In particular the last two on Page 11⁵⁵. "Project justification is essential. Type C needs to be convincingly rejected before any of the type A Options can be seriously addressed. In considering the Type C scenario in comparison to type A, the following needs to be addressed: - what value is placed on another (strategic) crossing of the Hawkesbury River?".

Page 12⁵⁴ concludes long term planning needs to be made for Option C.

Page 22⁵⁶ refers to DOTARS advice that the Australian Government wanted Option A as a short term solution thereby avoiding the need to confront the State Government over its lack of planning.

Newsletter 2, July 2003⁵⁷

By comparison, Corridor Types B and C would Remove less traffic from Pennant Hills Road (fewer than 10,000 vehicles per day in 2021⁵⁷).

King's Counsel

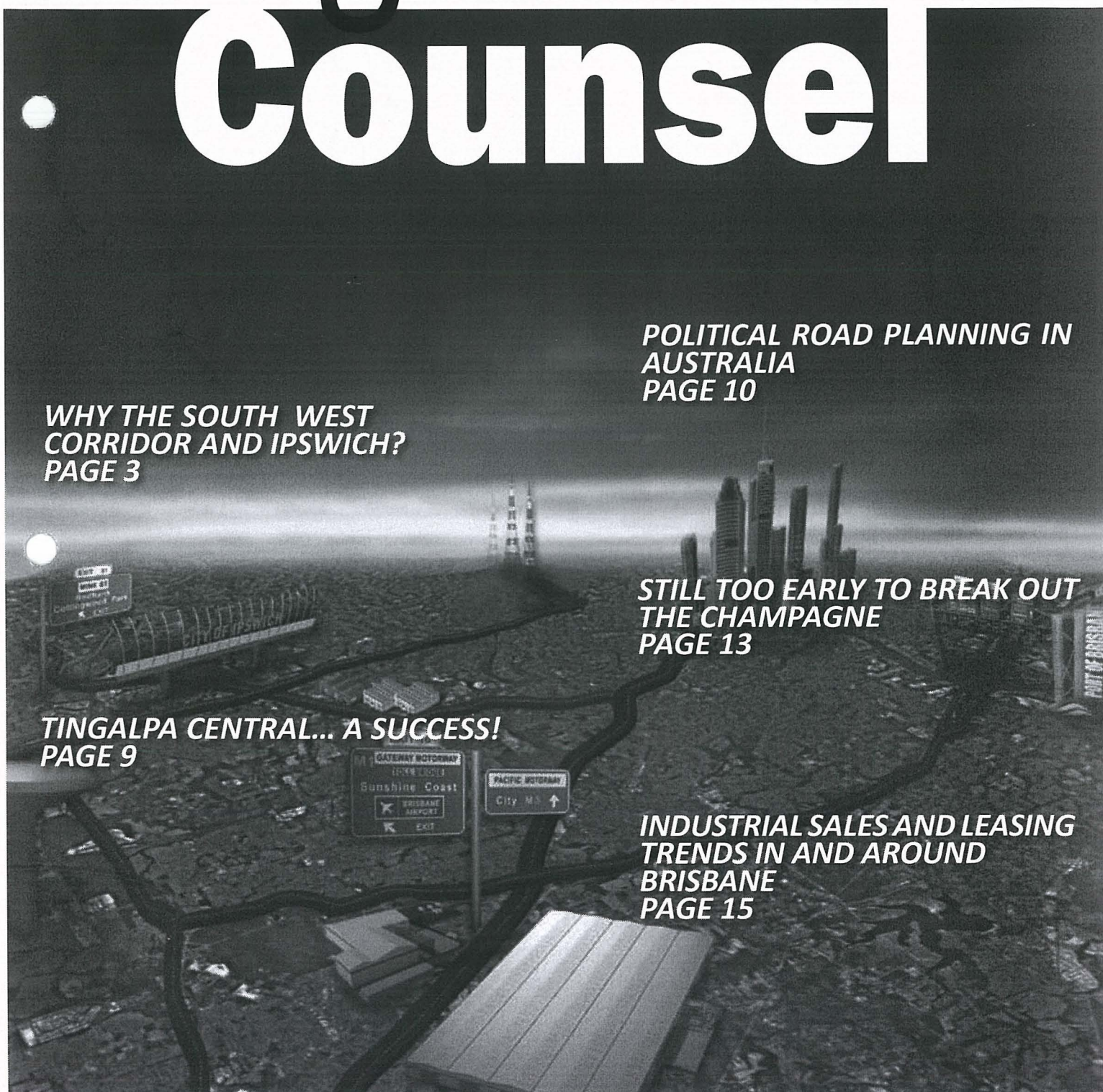
**POLITICAL ROAD PLANNING IN
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**STILL TOO EARLY TO BREAK OUT
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Political Road Planning In Australia

One illusion encouraged in Australia by politicians and their lobbyists is that building new road space in urban areas is the way to eliminate congestion and guarantee free-flowing traffic. This idea is used to support proposals for major road projects in New South Wales, Victoria and Queensland and also to construct what are described as 'missing links' in the network.

The push for new road infrastructure began with the Greiner Government in NSW, which came to power in 1988 with the slogan, 'we are a road-building government'. Greiner proposed that new roads should be built by the private sector, which offered greater efficiency.

Traffic engineers liken traffic flow in a major city, such as Sydney, to fluid flow in an interconnected pipe system. The effect of interconnectedness is witnessed when a breakdown occurs in a major part of the road network. It may take hours for the traffic flows to return to normal. Moreover, proponents of major road schemes to relieve congestion ignore the uncontrollable phenomenon of induced traffic¹, which is generated by the provision of the new road space. In Australia this was first described in 1981 by Ross Blunden, then Professor of Traffic Engineering at the University of New South Wales, at the Kirby Inquiry into the proposed Kyeemagh-Chullora Road, roughly along the route now taken by the M5 Motorway in Sydney.

A recent case of induced traffic is the M2 Motorway in Sydney that connects Lane Cove with suburbs to the north-west. The M2 opened in 1997 and in only three years queuing and delays destroyed the time-saving advantage of the new road space². More recently, the M2 was widened from four to six lanes over a three-year period from 2010 to 2013 at a cost of \$550 million. In off-peak periods the speed of traffic flow can attain

100 km/h, but in peak periods traffic congestion, which the upgrade was supposed to ameliorate, is still evident from direct observation of the traffic flows. This evidence raises the question as to whether the provision of new road space in an urban region can ever satisfy demand.

In three Australian states a total of \$24 billion (in 2013 monetary value) has been expended on eleven toll roads for little economic gain (Goldberg, 2012)³. In peak hours motorists are not getting value for money in travel time savings. Moreover, if economic advantage is measured by gains in productivity, this can only result from the development of what is known as an 'agglomeration economy'⁴. Benefits can accrue to businesses from being near one another, but an investment in a road development, such as the proposed WestConnex in inner Sydney, is really subsidising the dispersion of jobs and has the potential to reduce, not increase, economic productivity.

Yet, Infrastructure NSW (2012) chaired by former NSW Premier Nick Greiner issued a wish list of eight roads with a total capital cost of \$13.6 billion. No convincing up-to-date economic justification for this large expenditure has been cited by the NSW Government. An earlier economic valuation by Ernst & Young (2008)⁵ included estimates of travel time savings, savings in accident costs and vehicle operating costs for a new road. However, certain indirect benefits were also included that are difficult to quantify, for example, one such benefit is reduced congestion, which would require taking into account induced traffic.

The inclusion of unquantified external benefits, in addition to the quantifiable benefits already specified, illustrates a disturbing trend in the use of what is arguably inadequately substantiated economic analysis to justify the funding of road projects. This is a subject canvassed recently both in the author's

¹ Litman, T (2009), Generated traffic and induced travel – implications for transport planning, 9 December, Victoria Transport Policy Institute, Victoria, BC (www.vtppi.org).

² Goldberg, JL (2010), Cost-benefit analysis of road widening proposals with special reference to the M2 Motorway in the Sydney region. A statistical evaluation. Proceedings of the Australasian Transport Research Forum (ATRF).

³ Goldberg, JL (2012), The BrisConnections Airport Link: the inevitable financial collapse of a five billion dollar megaproject. Updated version of a submission to the Super System Review. (See also Brisbane's Courier Mail, 12 November 2012.)

⁴ Haughwout, AF (2000), 'The paradox of infrastructure investment: can a productive good reduce productivity?' Brookings, Summer 2000 (www.brookings.edu).

⁵ Ernst & Young (2008), The economic contribution of Sydney's toll roads to NSW and Australia.

submission to the Productivity Commission and in oral evidence before the Commission (Goldberg, 2014)⁶. The submission describes, inter alia, the WestConnex project (part of the Infrastructure NSW wish list referred to above) as an example of unconvincing economic justification.

The Productivity Commission has pointed out the dangers to Australia's AAA credit rating of wasteful expenditure of capital on poorly substantiated, poorly evaluated projects (AFR, 13 March 2014). In the author's view, an inadequate cost-benefit analysis enabled Transurban to obtain planning permission to justify the expansion of the M2 Motorway. The claimed benefits in travel time savings were over ten times the value stated in the author's peer-reviewed analysis (Goldberg, 2010)⁷.

Large capital expenditure on private roads has sometimes resulted in financial catastrophe

Large capital expenditure on private roads has sometimes resulted in financial catastrophe. The collapse of the privately owned BrisConnections Airportlink resulted in a total loss of \$4.8 billion, of which about \$1.5 billion was investor equity⁸. Two main factors contributed to the collapse. The first was clearly overly optimistic traffic forecasts. Their derivation was canvassed by the author in detail (Goldberg, 2012)⁹. One has to take into account the interaction of traffic engineering and financial aspects in arriving at conclusions about road financial viability. This can be a formidable exercise in which probability theory plays an important role. The divergence of forecasts from actual recorded traffic volumes has proved to be very large.

As reported in Brisbane's Courier Mail on 20 February 2013, traffic forecasts projected 135 000 vehicles per day after the toll-free period, but traffic volume for December 2012 was a mere 47 102. Other projects have recorded similar outcomes, for example, the Clem Jones Tunnel (CLEM7) was forecast to carry 100 000 vehicles within

eighteen months, but has achieved results of only 22 307.

These failed forecasts have resulted in class actions by investors against the particular toll road companies involved. Another factor to be taken into account when projects are evaluated is the time value of money (Goldberg, 2012)¹⁰. Money received or paid in the future does not have the same value now because of the existence of positive interest rates. Future money, therefore, has to be discounted to bring its value into time synchronism with the initial outlay. It is for this reason alone that investment in road infrastructure by superannuation funds should be considered high risk. Fund managers need to consider whether the long-term financial returns will really match the long-term obligations of these funds.

Excessively optimistic projections of usage have also played a significant role in the financial collapse of three major roads: the Cross City Tunnel and Lane Cove Tunnel in Sydney and the CLEM7 Tunnel in Brisbane.

With financiers and investors losing billions, the question then arises as to what factors should be tracked by investors in toll-road schemes. It should be realised that the security price compared to earnings is not reliable unless the investor is sure that the asset backing is real and not artificially based as would be the case if intangible assets are used to inflate the balance sheet. The value of a road asset does not depend on the money that was 'sunk' in its construction. A road, unlike a building, cannot be used for any other purpose



Brisbane's Clem 7 tunnel

⁶ Goldberg, JL (2014), Submission to the Productivity Commission. April.

⁷ Goldberg JL (2010), op. cit.

^{8,9,10} Goldberg, JL (2012), op. cit.

¹¹ Beaver, WH (1965), 'Financial ratios as predictors of failure', Journal of Accounting Research, pp. 71-111.

¹² Goldberg, JL (2006), op. cit.

¹³ Welch, I (2000), 'Herding among security analysts', Journal of Financial Economics, vol. 58, no. 3.

except to carry toll-paying traffic, the result of which should be profit. Without profit a road is without value. A building, on the other hand, has real estate value even if it is not occupied.

An important parameter recommended by the author for tracking the performance of a toll road asset is the ratio of cash at bank to total liabilities. This particular ratio has superior predictive power to other ratios as originally demonstrated by Beaver (1965)¹¹. The author has used this ratio to predict the financial collapse of the toll roads mentioned above (Goldberg, 2006)¹².

Analysts who promote toll-road investment appear to operate in a 'herding' environment, sharing opinions about the 'value' of securities. Herding¹³ has an important influence on security prices and can lead to analysts making uninformed recommendations to clients to buy securities of doubtful value, ignoring proper mathematical analysis.

One needs to consider whether public-private partnerships are the answer to the problem of funding toll roads in Australia. One example under consideration is an alliance of the toll-road owner and operator Transurban with the Australian and NSW governments in a project called NorthConnex. This is a tunnel project linking two main roads, the F3 Freeway to Newcastle and the M2 Motorway in the North West of Sydney. The proposed tunnel is 9 km long and is to be funded by approximately \$800 million from the two governments and \$600 million in equity raised by Transurban (Goldberg, 2014)¹⁴. Investors need to be aware of certain risk factors that are involved in such an arrangement.

Firstly, it is very difficult to predict the traffic flows in such a tunnel (Goldberg, 2006)¹⁵ because of the mixture of heavy vehicles and commuter cars currently using Pennant Hills Road. Secondly, the inclusion of equity funding requires a risk premium to be applied to the financial outcome (Goldberg, 2009)¹⁶. A cost-benefit analysis carried out by the National Infrastructure Coordinator (2012)¹⁷ showed that the tunnel was uneconomic and, therefore, it did not merit funding according to the Nation Building Program's administrative rules. Funding may become a serious political issue given the competing demands in NSW. The prioritisation of funding for infrastructure in Australia is in the hands of Infrastructure Australia, which has a set of rules to prioritise demand, among

¹⁴ Goldberg, JL (2014), Submission to the Productivity Commission. April.

¹⁵ Goldberg, JL (2006), Bias and predetermination in road traffic modelling – The case of the F3 to Sydney Orbital Link, School of Architecture Design Science and Planning, The University of Sydney.

¹⁶ Goldberg, J (2009), 'The valuation of toll roads and the implication for future solvency. With special reference to the Transurban Group', Journal of Business Valuation and Economic Loss Analysis, vol. 4, no. 1, art. 2. (Berkeley Electronic Press).

¹⁷ National Infrastructure Coordinator (2012), Report to Minister for Infrastructure and Transport on private financing options for upgrades in Sydney. M5 and F3-M2 corridors. March.



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which is the requirement of proper cost-benefit analyses.

However, political exigencies might have a determining influence, for example, the completion of the Pacific Highway upgrade to the NSW-Queensland border should merit priority over all other projects because the cost of accidents is possibly the highest in NSW. Yet, for new roads, the cost of accidents is normally only a relatively small quantity.

The evidence given in this paper supports the view that, to a large extent, road planning in Australia is being promoted by governments and lobbyists for political reasons on inadequate economic and financial grounds. Unfortunately, the industry will continue down that path as long as governments continue to promote the illusion of free-flowing traffic.

[This paper is dedicated to the memory of a former colleague WR (Ross) Blunden, Foundation Professor of Traffic Engineering at the University of NSW.]

Dr John L Goldberg
Former Honorary Associate
The University of Sydney