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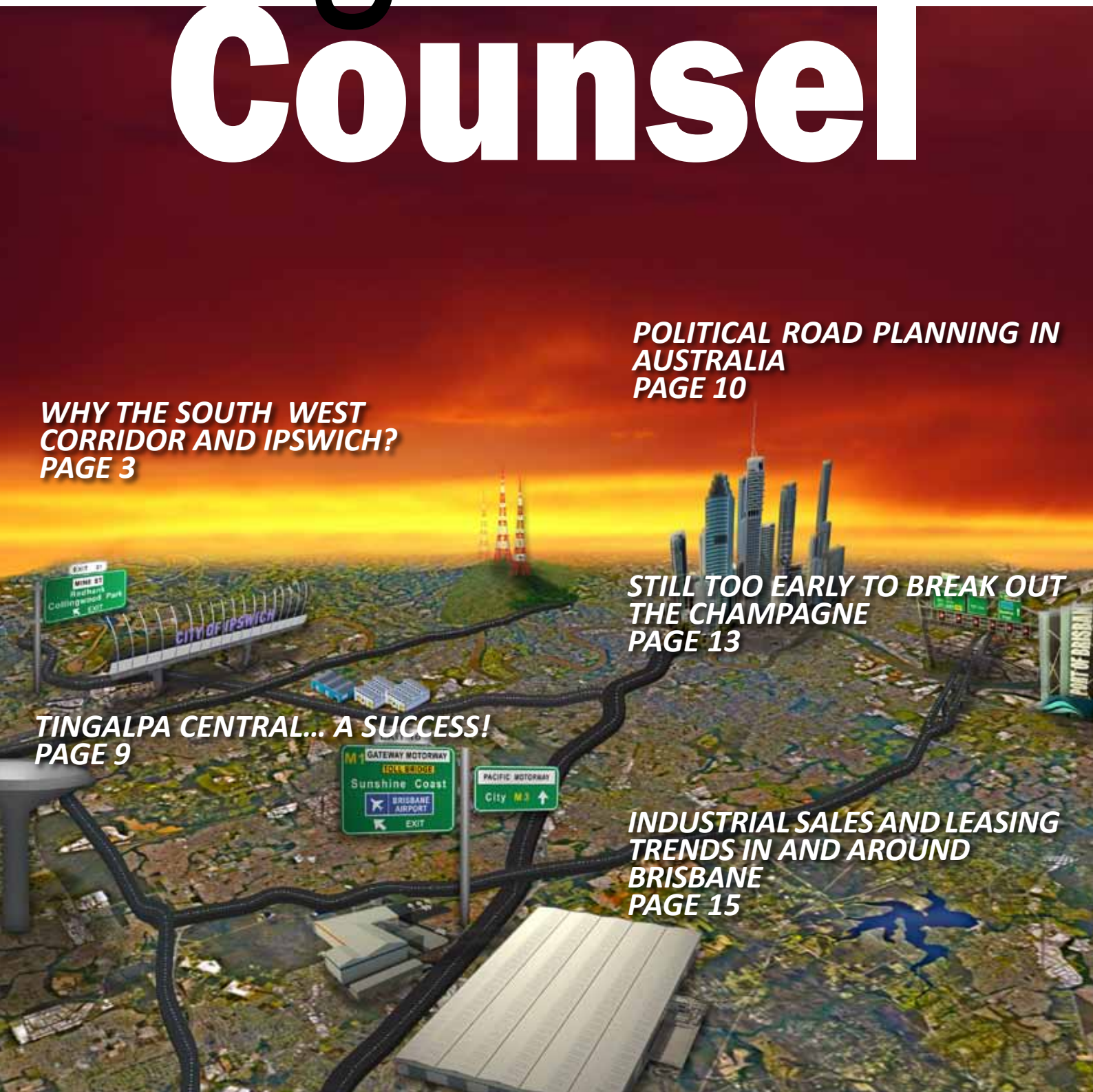

Political Road Planning In Australia

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 traffic[1] , 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 space[2]. 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.vtpi.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 equity[8]. 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 toll 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. Herding[13] 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 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.]

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[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.