Submission to the Rural and Regional Affairs and Transport Committee

Nation Building Program (National Land Transport) Amendment Bill 2009

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This submission has drawn on research conducted at the University of Wollongong. However, it does not necessarily reflect the views of the University.

To begin, it is interesting to note that in Autumn 2005 this Committee inquired into an AusLink Bill. Some notes are attached in Appendix A. Some progress has been made since 2005 with extensive road works and the work of the Australian Rail Track Corporation (ARTC) in redressing of decades of underinvestment into NSW interstate mainlines. More recent gains include the formation of Infrastructure Australia and federal funds for urban public transport. However, many of the items identified by the Committee in 2005 in both majority and minority reports are still relevant.

In addition, issues identified in a 2005 submission re AusLink (Railway Technical Society of Australasia associated with Engineers Australia) warrant more attention. These include factors supporting a closer look at AusLink such as since the start of 2005 oil prices have continued to trade above $US40 per barrel, also that 'Peakoil' is something Australia may well need to address, along with federal funding of urban public transport. In addition, the first five year AusLink plan should provide some funding for rail on each of the Brisbane - Townsville and Burnie-Hobart corridors. Advanced planning for a second five year track upgrade programme (2009-2014) for the North South rail corridor is also needed and this will require track straightening. As is well known from experience, road or rail deviations have long lead times to address environmental impact assessment and land acquisition. Rail corridor protection at an early stage is essential.

The main thrust of the present submission is that much of Australia's rail infrastructure is not up to standard, and more investment coupled with improved road pricing and vehicle use demand management is needed. If, as recently suggested by a respected Canadian economist, international oil prices will reach US$225 per barrel by 2025, accelerated investment in rail will be urgently needed. The preference for rail is that in moving line haul non-bulk freight, rail is three times more energy efficient than road. Rail is also more energy efficient than road in moving people.

The case of more investment in road and rail is generally accepted by the federal government and all State Governments (albeit with questions about the lack of rail investment by the NSW and Tasmanian governments). This has also been addressed by numerous agencies, with a 2004 paper[1] giving more details. However, there remains much scope for road pricing reform: here the Auslink 2004 White Paper noted the option of congestion pricing in major cities along with mass-distance pricing for heavy trucks. Notes on road pricing in general and heavy trucks in particular are attached in Appendix B and C respectively, whilst Appendix D has notes on land freight external costs.

Looking at Australian roads in the context of a country with a large area and relatively low population, and setting aside some road maintenance deficits (and other deficiencies, plus some overweight and/or oversized trucks on some lightly constructed roads) Australian roads are well funded.

However, with few notable exceptions, Australia's overall rail infrastructure is substandard on three important fronts: urban rail serving major cities with the exception of Perth; the interstate mainline network; and, the rural network serving grain exports. In addition, well over 100 years since Britain, Canada and the United States resolved the question of railway gauges in favour of a uniform and standard gauge (4'8.5" or 1435mm), Australia still has a multiplicity of railway gauges.

Further information can easily be supplied on request about urban rail (as per

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[1] Australian Transport Infrastructure: Fit For Purpose? Kilsby D, Laird P and Bowers D 27th Australasian Transport Research Forum, Adelaide, 2004

Part Abstract of paper (the full paper is at patrec.org) The (paper concentrates) on land transport (railways and roads), it reviews the transport task that rail and road infrastructure is expected to service now and in future. The implications of this in terms of using infrastructure that is "fit for purpose" are assessed both for the rail and for the road sector.

The paper suggests that there is a large backlog of necessary works to bring Australia's land transport infrastructure up to scratch. These capital works are broadly identified. The problems are very different in metropolitan and regional areas, and these are distinguished. The paper then argues for a better pricing framework than we currently have, and for interim government intervention in the modal choice for port-related freight before an improved pricing framework can be achieved. The paper concludes with a number of policy recommendations, which if implemented together would eventually allow Australia to claim that its land transport infrastructure was truly "fit for purpose" for present and future freight and passenger tasks.

this writer's February 2009 submission to the Committee's *Inquiry into the investment of Commonwealth and State funds in public passenger transport infrastructure and services*. It is pleasing to see the present Federal government investing in urban rail, allowing federal funds for urban public transport (that were provided from 1974 to 1981 and 1982 to 1996). However, it is of concern that Sydney, where the need is the greatest, will only receive minimal federal funding in 2008-09; also that the NSW government was unable to put forward more realistic projects such as an Epping to Castle Hill railway, extension of a light rail using former goods lines in the Inner West and completion of the Maldon-Dombarton line (to improve rail freight access to Port Kembla and to give more passenger capacity on the existing South Coast line). Delays on the NSW Government's port in completing the Epping-Chatswood line (with a massive cost blow out) and advanced planning of the necessary upgrades for its North Strathfield-Hornsby-Gosford track are also of concern.

In the area of interstate rail freight track, whilst recognising the good work done by the Australian Rail Track Corporation on the East-West corridor (linking Melbourne to Perth) and more recently the North-South corridor (Melbourne-Brisbane), much more work is needed on both corridors. In short, much of the North-South track linking Australia's three largest cities has substandard alignment and it needs straightening. The present track is at least 150 km longer than it needs to be and has excessive curvature limiting speed weight performance. Indeed, as noted in a 2008 submission by the ARTC to Infrastructure Australia (p20) *" For rail to move to the next step in competitiveness, or even in fact to maintain competitiveness against a constantly improving road network, there is no alternative but to start to consider deviations of the current poorly aligned sections of the network."*

There is also scope for shared road-rail corridors (see Appendix E).

Both the East-West and North-South corridors have axle weight restrictions. The current standard in Canada and the United States is for wagons with 285 000 lb (gross weight) which corresponds to axle loads of 31.8 tonnes. This requires track with good formation and heavy rails etc. In short, the mainline track of Canadian and US Class I Railroads allows for "FAST AND HEAVY" freight trains moving at 100 km/h with 25 tonne or more axle loads However, the Australian standard over much of the ARTC network (excluding the Hunter Valley coal lines in NSW) is restricted to 23 tonne axle load (TAL) limit for wagons moving no faster than 80 km per hour, or a 21 TAL limit for wagons moving no faster than 115 km per hour.

In addition to overhead clearances being unduly restrictive east of Adelaide and Parkes, crossing loop lengths are at best is mostly limited to 1800 metres (except for Sydney-Brisbane where it will be 1500 metres). Canadian National is now extending its loops to 10 000 feet or about 3000 metres. Queensland's north coast line has benefited over the last 24 years from about 200 km of track straightening, plus strengthening. However, more such work is needed.

Grain line condition in many states has deteriorated, this is part being a consequence of privatisation (and state treasuries before sale or lease of assets denying funds for track maintenance). Many now need rehabilitation.

In addition, work on an Inland Railway railway linking Melbourne to Brisbane via Parkes has been painfully slow whilst subject to numerous studies. It makes one wonder how if Western Canada can have two viable long distance rail routes from Winnipeg to Vancouver (CP via Calgary and CN via Edmonton) why South East Australia can have only one major rail track. This is despite Australia's Melbourne-Brisbane route serving a larger population over a shorter distance.[2] In short, Western Canada has two major interprovincial lines of good quality, whilst Eastern Australia (with its larger population) has just one interstate mainline of poor quality.

It is important that the new legislation make provision for expanding advanced planning for major track upgrades. It may also be worth giving a combination of incentives and penalties to States to encourage some States (particularly NSW) to improve their planning. It is understood that in the United States, to receive stimulus funding for rail, under the Obama administration, States must have detailed rail plans prepared by this July.

As mentioned above, if oil prices trend upwards more emphasis will be needed on rail track upgrading. Indeed, this was recognised in 2007 by the Committee in its report following an inquiry during 2006 into Australia's future oil supply and alternative transport fuels. However, the government is yet to respond to this Senate Committee report and recommendation.

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[2] In regards to population, at the end of 2008, the four Provinces of Western Canada (British Columbia, Alberta, Saskatchewan and Manitoba) had some 10.28 million people (http://www.statcan.gc.ca/pub/91-002-x/91-002-x2008004-eng.htm) whilst Eastern Australia (Victoria, NSW and Queensland) had a population of 16.75 million people. (http://www.abs.gov.au…) The Vancouver - Winnipeg rail distances are approximately 2420 km via Calgary and 2600 km via Edmonton (based on road distances from http://www.trailcanada.com/travel/in_canada/travel_distances).

APPENDIX A Notes re the 2005 Auslink Bill Inquiry

The Senate Rural and Regional Affairs and Transport Legislation Committee inquired into the AusLink Bill and reported on 12 May 2005. The report notes, inter alia, in the seven years to 2003-04, the Commonwealth spending on roads was $11 656 million as against $992 million for rail. This is despite road and rail having about equal shares of the Australian freight transport task (35 and 37 per cent respectively). Whilst the AusLink White Paper sets out $11.8 billion in Commonwealth land transport spending over five years, including an upgrade of east coast interstate rail, roads are again favoured. This $11.8 billion is mostly for roads and included $300m per year for road maintenance (p20) and $400m over four years for *'regional strategic'* funds (including rail) which was diverted before the 2004 federal election to roads (p25).

The Committee's report notes the need for efficient charges for use of infrastructure, including for heavy trucks *"...that compete directly with rail [and] affirms the need to confirm working towards efficient pricing of access to infrastructure..."* (p28). Although the AusLink White Paper maintained the present Federal Government's position of not supporting public transport (unlike all other OECD countries and previous Federal Governments (including the Fraser Government)) public transport issues "*are still on the table"*. Moreover (p30) *"there may be a case for Commonwealth assistance to major projects such as rail extensions which are unlikely to happen, or unlikely to happen soon enough, without the involvement of the bigger budget which the Commonwealth commands."*

The Committee cited the support of Engineers Australia and others for a National Transport Advisory Council (NTAC) and supported such a forum for *"co-ordinating policy"* in *"investment policies modal integration and access pricing"*.

The need for research and better data was noted, including protocols in the case of rail to allow "*information gathering of industry-wide importance"*.

As a whole, the Committee recommended that the AusLink Bills should be passed. Additional comment by the ALP Senators gave two recommendations; one calling for guidelines to be provided by 1 July 2005 for rigorous and transparent assessment of Strategic Regional Projects; the other to form a NTAC, or, a National Infrastructure Advisory Council.

Senator Lyn Allison for the Australian Democrats noted, inter alia, that *strategic, long-term plan"* is needed, as it does not adequately address either urban congestion and continues *"to rely on national highways as the primary mode of regional freight transport"*. Indeed, *"...this a patch up of existing road and rail systems."*

Accordingly, there is a need for 'Getting the Balance Right' in funding Infrastructure (AusLink I initially was heavily weighted to road transport - $10.9 billion for roads and $1.8 billion for rail (with rail's including loan funds, not grants as per roads).

APPENDIX B SHOULD ROAD PRICING BE INCREASED ?

During the 1990s, it was common for motoring organisations and road transport interest groups to claim that aggregate vehicle related payments to Government exceeded road outlays by Government. Often, in their more extreme forms, propositions were advanced along the lines that motorists are ripped off and trucks more than pay their way. A good account of the question as to whether motorists pay too much was given in a 1999 booklet by Howard Pender[3]. This study was sponsored by the Australian Automobile Association and addressed three questions. First, are motorists lightly or heavily taxed? Secondly, should they be heavily taxed? Thirdly, what is the appropriate balance between taxes on vehicle ownership and use?

Even when excluding congestion costs, a case can be made that there is a 'road deficit' of around $13 billion per annum[4]. The two largest items were road crash costs not met by insurance of some $5.5 billion as a cost to the wider community plus an estimate of net taxation refunds for motor vehicle use of $4.8 billion in 2003-04. The removal of indexation in 2001 of fuel excise has resulted in a higher 'road deficit'. This deficit included an annual $0.8 bn non-tariff automobile industry assistance programme; an estimated increased health cost of lack of physical activity due to excessive car use of about $0.8 bn per annum in Australia (Mason 2003)[5] and greenhouse gas emissions at $25 per tonne.

In regards to estimates for the costs of greenhouse gas emissions, a value of $25 per tonne of carbon dioxide equivalent (CO2e) may be regarded as either too low, or too high. A BIC[6](2001) recommendation was for a tax using $40 per tonne of CO2e. There is a case for imposing modest carbon tax in Australia on transport activity and applying the proceeds to improved transport infrastructure.

Of this $13 billion per annum, approximately $3 billion can be attributed under one set of assumptions to articulated trucks being under-recovered road system costs (about $1.5 billion) plus external costs (a further $1.5 billion).[7] It is appreciated that there are also appreciable subsidies to rail passengers that have increased in recent years, plus subsidies to rail freight that have decreased in recent years. Rail freight external costs (excluding the iron ore railways) were estimated at $215 million.

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[3] *Taxing cars -fleecing the fleet or subsidising smog ?* Australian Tax Research Foundation, Research Study No 33

[4] *Road pricing in Australia – too much or too little*, P Laird, Australian Road Summit, February 2007

[5] Mason, C (2003) Personal communication, also *Transport and health: en route to a healthier Australia?* Medical Journal of Australia Vol 172, 6 March 2000 pp 230-232)

[6] Bus Industry Confederation (2001) *Getting the Prices Right: Policy for More Sustainable Fuel Taxation for Road Transport in Australia* Submission (by Mr John Stanley) to the Commonwealth Fuel Taxation Inquiry.

[7] Laird P (2006) *Freight transport cost recovery in Australia*, Australasian Transport Research Forum, Gold Coast

APPENDIX C Re road pricing for heavy trucks

i. From the website of the National Transport Commission (NTC) accessed 13 October 2008.

The NTC was directed by the Australian Transport Council (ATC) to update heavy vehicle charges after the Productivity Commission's *Road & Rail Freight Infrastructure Pricing Inquiry* (2007) concluded: *"Substantial increases in road investment in the past couple of years make it likely that heavy vehicle charges would have to rise to maintain cost recovery."*

In April 2007, the Council of Australia Governments' (COAG) endorsed the charges review as the first 'building block' of broader road pricing reform.

Why are large increases proposed for B-doubles? Bigger trucks are currently cross-subsidised by smaller trucks. COAG's pricing principles require those cross-subsidies to be removed. B-doubles have benefited significantly from higher road spending; particularly improved access around ports, urban arterials, grain silos, sale yards etc. The number of B-doubles has increased by 267% to 9,564 vehicles since 2000.

Governments have little incentive to further extend the B-double (and other high productivity vehicles) network if they don't pay their way. The Business Council of Australia's Infrastructure Roadmap for Reform (September 2007) recently concluded: "We need to ensure that high productivity (that is, larger and longer travelling) trucks are charged appropriately. Not only will this help road/rail neutrality, it will facilitate having B Doubles and B Triples on our roads." - (BCA 2007)

Is the NTC calculation accurate? "The Productivity Commission independently audited and endorsed NTC's charges methodology noting that it is "conservative" by international standards (i.e. resulting in lower charges)."

ii. As noted by the 2006 Productivity Commission Road/rail freight infrastructure pricing report (on page 125), the recent annual subsidy paid for the operation of a 9 axle B - Doubles hauling the 75 th Percentile distance (227 500 km) is $23,000. This was under National Transport Commission (NTC) charges and methodology, based on revenue of $34,200 and an allocated cost of $57,200.

iii. There appears to be three notable broad groups of estimates for road system costs attributable to heavy trucks[8]:

- ***Conservative or NTC*** - as per the National Road Transport Commission (NRTC) first and second determinations and the NTC third determination.
- ***Intermediate*** - including the former Inter-State Commission findings[9] during the 1980s, the 1990-91 Over-Arching Group (OAG) recommendations and

[8] *Road pricing in Australia – too much or too little*, P Laird, Australian Road Summit, February 2007

NSW permit fees for heavier semitrailers and all B Doubles in use to 30 June 1996.

- ***High, or "user pays"*** - including the Bureau of Transport and Communications Economics (BTCE) 1988 report[10] noted in the draft report of the Productivity Commission, McDonell's methodology (NSW) (see for example[11]), and ongoing New Zealand Road User Charges.

When announcing the NRTC first generation charges in 1992, the chairman, the late Gordon Amadee, conceded they would not be "user pays" as this would not be tenable[12]. The costs to the NSW Government of implementing the then new NRTC charges (as of 1 July 1996) was over $60 million per year and NSW annual permit and registration fees of $12,650 a year in 1989 for an 8 axle B-Double were slashed to $5500. With Consumer Price Indexation, the 1989 NSW B-Double fee would in 2007 be about $20,775. This is more than two and a half times more than July 2008 NTC charge for an 8 axle B Double of $8041.

Subsidies are one reason why the number of large B-Doubles has grown so rapidly in recent years, as noted in the draft report of the Productivity Commission - up from about 700 in 1997 to more than 6000 now. The difference between road system costs attributable to articulated trucks under the 2005 NTC model and using Macdonell's Methodology is approximately $1.5 billion per year.

iv.. New Zealand has had in successful use, since 1978, a system of mass-distance pricing for heavy trucks. These charges for the heavier articulated trucks hauling long distances are appreciably higher levels than the combined annual registration charges and fuel road user charges that apply in Australia. These were recently increased in July 2008, and for a 9 axle B-Double operating at 62.5 tonnes Gross Vehicle Mass with 22.5 tonnes on the prime mover and 20 tonnes on each of triaxle trailers would amount to $NZ942 per 1000 km (taking the prime mover at the average of charges of $452.03 for 22 tonnes and 523.33 for 23 tonnes plus $227.19 for each trailer to 20 tonnes).

From the above 2006 Productivity Commission report, a 9 axle B - Double hauling the 75 th Percentile distance of 227 500 km) in a year would pay $34,200 and have, under the NTC's 'conservative' methodology, an allocated cost of $57,200. Yet, the same B-Double in New Zealand would pay $NZ214,305 in road user charges. Even allowing for currency conversion, GST, the New Zealand charges being current, and the NTC ones being c2005, there is a large difference. The ratio between New Zealand and Australian road user charges for a heavy 9 axle B-Double hauling long annual distances is at least four to one. For heavily laden semitrailers hauling long annual distances, the ratio between the New Zealand user pays charges and the recent NTC charges are about three to one.

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[9] Inter-State Commission (1986) Cost recovery arrangements for interstate transport, to (1990) Road use charges and vehicle registration: a national scheme Canberra

[10] BTCE (1988) *Review of road cost recovery*, Canberra

[11] Laird PG *Freight transport cost recovery in Australia*, Australasian Transport Research Forum, Gold Coast

[12] Sydney Morning Herald April 13, 1992 "Recession puts truck plan off road."

APPENDIX D Land Freight External Costs

Executive Summary of an Australasian Transport Research Forum Paper *Revised Land Freight External Costs in Australia* Sydney September 2005 Philip Laird, University of Wollongong

This paper outlines some estimates of external costs of land freight transport published in Australia since 1990. The earlier reports include those of the former Inter-State Commission, the National Transport Planning Taskforce, the Victorian Environment Protection Authority and the Bureau of Transport and Regional Economics with its 1999 report *Competitive Neutrality between road and rail.*

With the increasing land freight task and projections for future growth, estimates of external land transport costs have been of increasing interest to government. Recent examples include Queensland Transport, the Victorian Department of Infrastructure, the NSW Department of Transport study of grain transport options, the Australian Transport Council's 2004 *National Guidelines for Transport System Management*, and, the 2003 Austroads report *Valuing Environmental and Other Externalities.* A New Zealand Ministry of Transport *Surface Transport Cost and Charges* study released in 2005 is also of note.

The paper gives particular attention to six external costs of road and rail freight operations in both metro and non-urban areas identified for the Australian Rail Track Corporation's 2001 Track Audit. These external costs are accidents, air pollution, noise pollution, greenhouse gas emissions, congestion, and incremental road damage. The results of two studies conducted for Queensland Transport in 2001 and 2004 that provided updated estimates for each of the Track Audit externalities are discussed. The revised estimates of unit costs include:

1. Australia wide accident costs of 0.6 cents per net tonne kilometre (ntkm) for road freight moved by articulated trucks and 0.03 cents per ntkm for rail freight.

2. An average cost of air pollution in capital cities of 0.65 cents per ntkm for freight moved by articulated trucks and 0.22 cents per ntkm for rail freight moved by diesel electric locomotives. These estimates are based on PM10 emissions as discussed in two BTRE reports *Health Impacts of transport emissions in Australia: Economic costs* (2005) and *Urban pollutant emissions from motor vehicles: Australian trends to 2020* (2003).

3. Noise in capital cities - 0.22 cents per ntkm for road, 0.12 cents per ntkm for rail.

4. A greenhouse gas cost (based on $25 per tonne of carbon dioxide) of 0.18 cents per ntkm for road freight moved by articulated trucks and 0.06 cents per ntkm for rail freight.

5. Road congestion (metro only) 0.10 cents per ntkm for road. -

6. With recent and current road user charges for heavy vehicles of the National Transport Commission, under-recovery of road system costs from articulated trucks is broadly estimated at 1.0 cents per ntkm.

Table 1 Recommended revised Australian land freight externality costs

Externality Measure	**Road (c/ntk)**	**Rail (c/ntk)**
Accident Costs	0.60	0.03
Air pollution		
- Metro	0.65	0.22
- Rural	0.13	0.04
Noise pollution		
- Metro	0.22	0.12
- Rural	0.07	0.04
Greenhouse gases	0.18	0.06
Congestion (Metro only)	0.10	-
Increased road maintenance	1.00	
TOTALS		
Metro	**2.75**	**0.43**
Rural	**1.98**	**0.17**

Note that road maintenance costs for roads of light construction are higher, also that any rail track subsidies may need to be taken into account.

It may be noted that, excluding unrecovered road system costs, the metro articulated truck road external cost of about 1.75 cents per net tonne km is less than half the approximate value cited in the above Austroads report of some 4 cents per net tonne km.

Even if the users of land freight transport are not required to meet their full external costs, such costs should be fully accounted for when major infrastructure investment decisions are being made.

It is also of note that road vehicle operators using petrol pay an appropriate de facto externalities charge through fuel excise without rebates, and the assigned average health costs from car use (1.3 cents per km) in the state capital cities equates to about 12 cents per litre of petrol used.

However, following introduction of the New Tax System in 2000, the operators of heavy vehicles were granted conditional rebates for the use of diesel, which have since been further extended to effectively require no payment of external costs (cf about 20 cents per litre prior to 2000.

APPENDIX E. SHARED ROAD - RAIL - UTITLITY CORRIDORS

Shared road - rail corridors work well in Perth, also in Queensland and are featured in the Pacific Highway Tugun bypass completed in June 2008.

The NSW Government and its Roads and Traffic Authority has had attention repeatedly drawn to the desirability of shared road - rail corridors via formal public consultation processes including by the Railway Technical Society of Australasia (RTSA) re Kempsey to Eungai in January 2004 and August 2007 and Moorlands to Heron Creek in July 2005 (see rtsa.com.au/publications), a May 2006 report 'Pacific Highway Upgrades' of the General Purpose Standing Committee No 4 of the NSW Legislative Council.

In Winter 2007 advertisements from the NSW Dept of Planning invited comment by 31 August 2007 on the proposed construction of approximately 40 kilometres of four-lane (capable of six later) divided carriageway from Kempsey to Eungai. However, the Environmental Assessment documents placed on public exhibition did not comment on shared road - rail corridors.

For the 40 kilometres of railway close to the proposed Pacific Highway upgrade, no fewer than 20.4 km of this section has a speed restriction of 70 km per hour due to the curves of tight radius. In fact, 31.7 km has a speed restriction of 80 km per hour or less and 17.9 km of track is built on curves with a radius of curvature less than 800 metres.

Rail track file data can be used to demonstrate that **a train moving on this 40 km of sub-standard track with steam age alignment turns a total of about 8.3 circles** – over 4 to the left and 4 to the right. This track needs replacement. However, to find a new rail track close to the existing rail alignment is likely to meet the same concerns that lead to the present siting of the proposed new section of Pacific Highway.

Replacement of the above 40 plus km section of substandard railway by a new railway along side the proposed new Pacific Highway section would a give significant boost to rail freight efficiency and productivity. It would also allow for an improvement in passenger rail services.

The disruption of having to come back in say five years to start an assessment and land acquisition process for either a new rail corridor separate from a Pacific Highway upgrade, or, for adding to a previously acquired corridor for a Pacific Highway upgrade, will be much larger (and much more costly) than ensuring shared road - rail corridors are properly addressed by the NSW Government and its agencies. If need be, this should be a requirement of the Australian Government before federal funding is made for certain Pacific Highway upgrades.