Supplementary submission re Public Infrastructure

To the Productivity Commission from Philip Laird, University of Wollongong, April 2014

As per this writers primary submission of December 2013, the inquiry is considered as timely. As before, this submission will draw on research conducted at the University of Wollongong but does not necessarily reflect the views the University.

The draft report of the Commission released in March 2014 is considered good as far as it goes. However, given Australia's current overall shortage of 'fit for purpose' infrastructure in general, and rail in particular, it is considered that the final report should go further.

It is also suggested that the final report could give credit where credit is due on major rail projects that have gone well, and what lessons can be learnt from this. If one looks at major rail projects since 2001, costing over $1 billion, then two are of note: the Alice Springs to Darwin railway (2001-03), and, the Perth to Mandurah Railway (2003-07). The former one gets no reference in the Draft Report (indeed, Darwin itself appears to receive no mention) whilst the second one is cited with brief details. It is suggested some attention be given to factors that assisted these two projects to go well, including early corridor protection and good project planning. (Incidentally, Alice Springs to Darwin had one major contractor, whilst Perth to Mandurah was split into several packages).

1. Australia's rail system

The primary submission of this writer gave an outline of the current state of parts of the Australian rail system, rated overall D+ in a 2010 Engineers Australia Infrastructure Report Card. After noting some excellent fit for purpose rail track, notably in the Pilbara region of Western Australia supporting iron ore exports, it was noted that parts of Australia’s rail infrastructure are now substandard on four important fronts:

* urban rail serving major cities with the exception of Perth;
* parts of the interstate mainline network;
* parts of the Queensland north coast line; and,

* much of the rural network serving grain exports.

Whilst there is a need to further upgrade Queensland north coast line, hand in hand with ongoing upgrading of the Bruce Highway, attention now is given to grain lines, interstate lines and urban rail.

1.1 The rail network serving grain exports

It is of concern that neither Volume 1 or Volume 2 of the Draft Report appears to mention grain. The issues were well covered (including the option used in Canada where governments move to support rather than overregulate short line operations and where gauge questions were sorted out decades ago) in the 2007 report of the House of Representatives Standing Committee on Transport and Regional Services *"The Great Freight Task: Is Australia's transport network up to the challenge?"*

The issue of the state of the nation's grain network has been raised many times this year by those in the grain handling industry. By way of example, as noted by ABC TV on 7 March http://www.abc.net.au/landline/content/2014/s3959535.htm by Mr Chris Clark *"Australia's grain trains are smaller, slower and more expensive than our international competitors."*

The grain line issues were revisited by the Australian Financial Review (AFR) on 24 March 2014 in two articles, including ***"Poor rail could cost economy".*** Again, it was noted that Canada can operate heavier grain trains than Australia does.

More generally, the AFR on 2 April 2014 in an article ***"Australia slumps in world trade index",*** it was noted *"…transport is a barrier for the movement of goods both within Australia and across the border."*

The same article noted New Zealand now stands in the fourth place of an "enabling trade index" whilst Australia has slipped 9 spots to be 23rd in the world.

1.2 Interstate track

It is not just with grain trains that Australian freight trains are lightly laden. As per the primary submission, in respect to interstate freight, Australia lags Canada (and the United States) on five key indicators on both the East-West and North-South corridors mostly maintained by the Australian Rail Track Corporation (ARTC).

A. Axle Loads The current standard in Class I railways in Canada and the United States is for wagons with 286 000 lb (gross weight) which corresponds to axle loads of 31.8 tonnes. The Australian interstate lines are 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.

B. Speeds Canada's mainlines allow for trains up to 80 mph or 129 km/h. Parts of the East-West and most of the North-South corridors have excessive length and or excessive curve, with some steep ruling grades to contend with.

C. Trains with double stacked containers can operate on both Canadian Pacific (CP) and Canadian National (CN) lines coast to coast. In Australia, such trains can only operate Adelaide/Parkes to Darwin/Perth.

D. ARTC crossing loops, with few exceptions, are no more than 1800 metres in length.

CP and CN ones are now being extended in places to 12,000' or just over 3600 metres.

E. Western Canada has two viable long distance rail routes from Winnipeg to Vancouver (CP via Calgary and CN via Edmonton), and has had so since c1915, whilst South East Australia can only has one major interstate rail track.

The costs imposed on Australia by mainline interstate track deficiencies include an over dependence on road transport to move interstate freight. Table 1 shows a trend which is costly to Australia.

Table 1 Interstate land freight

billion tonne kilometres

	Rail	Road
2002-03	25.5	51.6
2007-08	31.5	70.5
2011-12	30.6	81.6

Reference: For rail, 2012 Australian rail industry report and for road, Bureau of Infrastructure, Transport and Regional Economics *Yearbook 2013: Australian infrastructure statistics*

These numbers, apart from raising questions about the accuracy (or adequacy) of the data, raise questions. Part of the increase in rail from 2002-03 is due to the Alice Springs - Darwin railway, and the decrease since 2007-08 is the loss of freight on the North South corridor in the face of massive highway upgrading (completion of

the reconstruction of the Hume Highway in 2013 and over half of the Pacific Highway) and low road access pricing for heavy trucks.

Here, it is of note that in 2006, the Bureau of Transport and Regional Economics [Freight Measurement and Modelling in Australia Report 112 p61] gave past data and forward projections for road and rail freight on various intercapital city corridors with caveats, including on the North South Corridor. For 1989, the respective rail shares of land freight on each of the Melbourne Sydney, Sydney - Brisbane, and Melbourne - Brisbane sectors were 21.3, 40.7 and 19.3 per cent. Using their projections for 2014, rails modal share of intercapital city intermodal of land freight on each of the Melbourne Sydney, Sydney - Brisbane, and Melbourne - Brisbane sectors would be just 6.8, 9.2 and 33.3 per cent. However, even these conservative projections have not been attained.

Supposing the one third to two third ratio in 2002-03 had carried forth to 2011-12; then the interstate road freight task would have been 74.1 btkm instead of 81.6 btkm; an increase of 7.5 btkm. Using estimates of external costs due to this writer considered in 2011-12 by the NSW Independent Pricing and Regulatory Tribunal of New South Wales in its *Review of Access Pricing for the NSW Grain Line Network* with 2.79 cents per ntk for road and 0.24 cents per ntk for rail in non urban areas; the additional external costs in 2011-12 were at least $191 million.

There was also the use of extra diesel - in the order of 100 million litres. Plus a corresponding increase in carbon dioxide emissions.

1.3 Urban rail

On a general note, mention is made of the February 2014 report for NRMA Motoring & Services called Australia's Liquid Fuel Security Part 2 as prepared by John Blackburn AO, with points for consideration, including

> *Mode shifting, such as transporting freight by rail rather than road and supporting increased use of public transport; and,*
>
> *Improved efficiency of (road) vehicles.*

As Melbourne's Metro Rail Capacity Project (formerly called the Melbourne Metro) and Brisbane's Bus and Train Tunnel need funding, it is worth looking at what is happening in the Asia Pacific Region.

By way of example, it has taken Shanghai just 20 years after the opening of their first line to build more than 500km of metro lines. As seen by the Hon Malcolm

Turnbull MP on the ABC TV Program Q and A that went to air on 26 July 2010, in the year 1995 "… *the Shanghai Metro opened with one line. It now has 420 kilometres of track, 269 stations, carries six million people a day and by 2020 will be twice that size. So you can have the infrastructure you want. You don't have to be, you know, a China. You…can do it if you've got the leadership and commitment …"*

By 31 December 2013, including two new lines, Shanghai had a network of 538km of track with 329 stations. More is planned by 2020.

In China, this year, up to 1500 km of light rail and metros will be built.

Hong Kong's Mass Transit Railway (MTR) existing 218 km system has construction on five fronts. This includes four metros, with one due later this year, two in 2015 and one by 2020. Plus the Guangzhou-Shenzhen-Hong Kong Express Rail Link to connect China's High Speed Rail (HSR) Network by 2015.

Nearby Macua is getting a new metro.

Taiwan's capital city Taipei has four lines that are now being extended. Kaochiun, a city connected to Taipei since 2007 by a 345 km HSR, has two metro lines. Taiwan has 23.3 million people with over 165 km of metros and 300 km of HSR. This leads to the question as to what Australia's 23.3 million people can have.

2. Road pricing

The attention given by the Commission to road pricing in the draft report is appreciated. As above, it is submitted that more information is needed in the final report. A stronger call to action could well be in order.

Some recently released reports are of note. These include the discussion paper Road Pricing and Transport Infrastructure Funding: of Infrastructure Partnerships Australia.

In addition, the speech made by the Commission's Chair, Mr Peter Harris to the Australian Automobile Association Policy Forum *Infrastructure Solutions for the 21st Century* in Canberra on 25 March 2014 is of interest, and particularly in relation to fuel excise where it is stated:

> *" The combined removal of fuel excise indexation in 2001 and the rise in credits for fuel use for various groups has led to a growing gap between road funding on one hand, and excise revenue on the other.*

We estimate that the removal of indexation has forgone around $13.5 billion in revenue between 2001-02 and 2011-12 (in 2011-12 dollar terms) — with annual forgone revenue now around $3 billion a year."

Further details would be welcomed. My own calculations (Appendix A) show more like now $4 billion per annum of foregone revenue.

Turning now to mass distance pricing for heavy trucks, it is suggested that the final report could give more details, including that of the New Zealand system. This has been in successful use since 1978, and ensures that the heavier trucks hauling heavy loads long distances each year are not cross-subsidised by other road users.

In addition, support is given to support recommendations for the Commission to hold an inquiry into road pricing. However, such an inquiry could usefully be extended to land transport pricing, funding and provision.

3. General comment

As observed by Paterson[1] and noted by Scrafton[2] "rail and sea transport are not achieving their potential in the current system, while road and air transport are over-used to compensate. The result is a system that inflates national costs and energy use."

In December 2004, when speaking to AusLink legislation, the Deputy PM and Transport Minister John Anderson MP observed that *We upgrade our roads and immediately they are filled with more cars. We simply have to do it in a more coordinated way and upgrade rail at the same time as we upgrade the roads. We need to do that in a coordinated and sensible fashion so that what belongs on the roads goes on the roads and what belongs on rail goes on rail."*

In these regards, and based on other the directions other countries are heading, including Canada and New Zealand, it appears that Australia still has some lessons to learn.

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[1] Paterson, J. (1999). A national transport strategy? Submission to inquiry into rail reform

[2] Scrafton, D. (2001). Railway reform in Australia: Access regimes, changes in ownership and structural reform freight. Canadian Transportation Research Forum Proceedings (pp. 761–776)

As before, road transport is highly energy intensive. Energy efficiency and oil vulnerability issues affecting the transport of people and freight are identified in many reports. In addition to the 2007 and 2008 reports already cited, Oil vulnerability is noted in the Queensland Freight Strategy released in late 2013: to quote *Oil vulnerability will drive the need for the freight system to adapt to alternate sources of energy, explore more efficient supply chain models and exploit the use of technology.*

4. Data

In the 1999 report of the Commission into Progress in Rail Reform, the Commissions identified data deficiencies. These were also recognized in the 2007 report of the House of Representatives Standing Committee on Transport and Regional Services *"The Great Freight Task: Is Australia's transport network up to the challenge?"*. The 2007 report made recommendations including:

Recommendation 1

The Committee recommends that the Minister for Transport and Regional Services require the Australian Transport Commission and the Bureau of Transport and Regional Economics to undertake the establishment of a national transport database.

Recommendation 2

The Committee recommends that the Minister for Transport and Regional Services urgently initiate legislation requiring transport industry operatives to supply essential information for the proposed transport database.

It is suggested that the Commission may care to comment on the adequacy, or otherwise, of data available in the public domain. The writers own preference would be to follow the long standing lead of the United States and form a Bureau of Transportation Statistics.

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APPENDIX A Comment re fuel excise

In early 2001, the Howard government reduced fuel excise and froze indexation in a short term response to higher oil prices and community concerns.

Since March 2001, this excise has remained at 38.143 cents per litre. The loss of Commonwealth revenue from freezing fuel excise indexation was estimated in Treasury Budget Paper #2 (May 2001) at $150 million for 2001-02 increasing to $1135 million for 2004-05.

A Fuel Taxation Inquiry reported in 2002. Although its recommendations were pragmatic and included fuel indexation at a later stage, the package of recommendations was rejected by the Government of the day.

From March 2001 to March 2012, the CPI had increased over 11 years by a factor of 35.2 per cent with 38.143 cents in March 2001 increasing to 51.563 cents per litre. (http://www.rba.gov.au/calculator/quarterDecimal.html). The Australian Bureau of Statistics, Canberra *Survey of Motor Vehicle Usage for 12 months ended 30 June 2012. Cat. No. 9208.0* shows that for this time period, road vehicles used about 31.2 billion litres of petrol, diesel, and LPG. This includes 18.23 billion litres of petrol.

Had of this18.23 billion litres petrol been levied at an excise rate adjusted for CPI, at the 35.2 per cent increase the fuel excise would have been an additional 13.42 cents per litre. The difference in total fuel excise collection during 2011-12 for petrol used in cars etc between the indexed and frozen rate would have been about $2.48 billion.

The ABS SMVU notes that in the 12 months ended 30 June 2012, a total of about 6.3 billion litres of diesel was used by articulated and rigid trucks. Although not all of these trucks would have been eligible for rebates, the difference between the fuel excise adjusted for inflation at 50.790 cents per litre and a deemed 23.1 cents per litre road user charge is 27.69 cents per litre. For this 6.3 billion litres of diesel, the forgone revenue is about $1.9 billion during 2011-12.

Accordingly, the combined forgone petrol and diesel excise during 2011-12 is then about $4.4 billion.