Submission No 37

INQUIRY INTO PLANNING PROCESS IN NEWCASTLE AND THE BROADER HUNTER REGION

Name: Associate Professor Philip Laird

Date received: 10/10/2014

Submission to the Newcastle Planning Committee re Planning process in Newcastle and the broader Hunter region

from Philip Laird, University of Wollongong, October 2014

Given ongoing concern about proposals to cut the railway line at Wickham, and related planning matters, the inquiry is considered as timely. The submission shall be mainly confined to the term of reference re " the decision to terminate the Newcastle rail line at Wickham and any proposal to construct light rail including along Hunter and Scott Streets, …" . The submission will draw on research conducted at the University of Wollongong. However, it does not necessarily reflect the views the University.

1. Speeding up Sydney - Newcastle trains

"As Newcastle and Wollongong grow in size and importance to the NSW economy, they need faster and more efficient links to Sydney" (Transport for NSW 2012, Draft Transport Master Plan as noted by the 2012 State Infrastructure Strategy of NSW) Infrastructure NSW.

This report "assesses how faster rail journeys from the Illawarra and Central Coast to Sydney would help enable this integration and support these regions." … also, this 2012 report on page 107, notes "An incremental program to accelerate the intercity routes is proposed, with a target of one hour journey times to Sydney from both Gosford and Wollongong, and a two hour journey time from Newcastle. The focus of the program will be operational improvements supported by targeted capital works to reduce journey times."

1.1 Faster trains to Newcastle

Faster trains between Sydney and Newcastle were promised in 1998 in the official NSW *Action for Transport* Statement to be delivered in two stages, the first stage by c2007. Although by 2003 a detailed study or two had been undertaken, no major work was done.

The worst aligned sections of track linking Hornsby and Newcastle are now overdue for realignment. This section is now the most congested section of double track in Australia, albeit more from frequent passenger trains rather than from commercial freight activity.

As noted by Singleton (1966, The Short North Railway: Sydney to Newcastle. ARHS Bulletin Vol 13, p13-23) as part of a policy of a ruling grade of 1 in 75 for up trains, a number of deviations were built in the early 20 th Century. These deviations have included:

* Morisset to Dora Creek easing a 1 in 50 grade, with a new 1m 50c (one mile, 50 chains (2.6 km) deviation replacing a 1m 30c section. *"Here, the insertion of a 20 chain and a 16 chain curve did nothing to improve the speeds of fast trains."*

* Dora Creek to Awaba easing a 1 in 40 grade, with a 2 m 62 c deviation replacing a 2m 27c section. Where *"its series of sharp curves spoiled any chance of fast running on this section of track."*

* Awaba to Fassifern easing a 1 in 40 grade, with a 2 m 20 c deviation replacing a 1 m 17c section placed into use 1 February 1903 ".an extra mile of permanent way.

* Cardiff - a 2 m 60 c deviation with little extra length (17c) but introducing reverse curves.

All in all, over 3 km of extra track. Reversion to the alignment in place in the late 19 th century, but with easier grades (facilitated by bulldozers), would speed trains up.

Other ways of speeding up Newcastle Sydney trains include higher speed turnouts at various locations, easing of tight radius curves, and the use of new higher powered trains (that could use dual voltage equipment to run on both 1500 volts DC or 25,000 volts AC). To achieve the two hours transit time, work will be needed on several fronts.

2. Keep the railway to Newcastle

In 2006, Premier Morris Iemma reversed plans of the Carr Government to close the rail line through the centre of Newcastle.

Since 2006 the Newcastle Museum has opened close to Civic Station. Civic Station also serves the Town Hall, the Newcastle Conservatorium of Music and the Crowne Plaza Hotel.

If the line had to be truncated, it would make more sense to do so at Civic rather than Wickham. But then it makes much more sense to continue to use the four platforms at Newcastle Station for starting and stopping trains.

A further reason for retaining the line to Newcastle is oil pricing and a concept called oil vulnerability which raises the question of how people will choose to travel if and when oil prices escalate.

In 1999, international oil prices were below $US20 a barrel. In 2004, oil prices were rising, inflicting much pain on car dependent suburbs of major cities, yet there were government forecasts that oil could be expected to drop back to $US20 a barrel. However, by mid 2008, oil prices had peaked at about $146 per barrel. Following the global recession, oil prices have since receded and so oil prices have been restrained at about $100 a barrel. They are expected to increase over the next decade.

Rail transport is demonstrably more energy efficient than road transport in moving people (and goods). Some comment on this is given in Appendix A. Rail transport also has the option of electrification, which reduces dependence on imported oil. The line to Newcastle is already electrified (at 1500 volts DC).

It is of note that the 2013 Queensland Moving Freight Strategy set of priorities includes addressing oil vulnerability. In addition, the topic was addressed in early 2004 by the NRMA in a commissioned report *Australia's Liquid Fuel Security Part 2,* which, inter alia, recommended improved public transport.

In any event, investment of some $350 million for track upgrades to allow for faster trains from Newcastle to Sydney would do much more for Newcastle than cutting the track at Wickham and installing light rail at an estimated cost of $350 million. The faster trains would give Hunter Valley people better access to Sydney jobs, and make it easier from tourists coming from Sydney to Newcastle.

2.1 Regional concern

The event hosted on Wednesday 20 August 2014 by Save our Rail at Newcastle, with the active participation of both Eco Transit and Action for Public Transport of Sydney is an indication of strong community concern. This event also included a speech by the Hon Alannah MacTiernan MP from Western Australia – who pointed out the vital role that a railway to the core of a city can play in city revitalization – also how it was a mistake to remove the Perth to Fremantle railway in 1979, and how it was reinstated a few years later.

As Minister for Planning and Infrastructure in the Government of Western Australia up to 2008, the Hon. Allanah MacTiernan, played a decisive role in delivering the world class Perth –Mandurah new railway in late 2007. Their trains travel the 72 km in 50 minutes or less; an average speed of 85 km/h. This average speed would give Newcastle-Sydney in under two hours. The Perth –Mandurah project was delivered on time and on budget at a cost averaging $18m per kilometre. Its use has exceeded all projections and now is more than 20 million passengers per year.

2.2 Increasing national attention being given to the issue

One example is the article in Rail Express for 27 August 2014 by acting Editor Mark Carter based in Adelaide. To quote in part:

> The push for removal of the rail line has come from a variety of developers who see the rail line as a physical barrier between the major part of the CBD and the

shorefront. They see the removal as a way of opening up and revitalising the CBD, although quite where the science behind this comes from is anyone's guess.

Anyone who has been to Newcastle in recent years will realise that revitalising the CBD as a commercial centre is a long lost cause, so the only way of breathing new life into the area would be to increase the urban population through residential development - and for that, surprise, surprise, in the 21st century you need good, direct public transport. …

As already mentioned, the revelations over inappropriate political donations currently stirring up the political pot in New South Wales are more linked to other development issues in the Hunter rather than the rail line removal….

Meanwhile Transport Minister Gladys Berejiklian says she wants to increase the number of people using public transport in Newcastle, although a departmental report suggest the potential for a 23% drop in patronage once alternative public transport options into the CBD kick in.

At a recent budget estimates hearing in NSW Parliament, Ms Berejiklian defended the decision to cut the rail line, **although not particularly convincingly**, by saying, "If you're asking me is 'it a transport decision?', no, it is a decision to revitalise Newcastle, of which transport is a part.

"Our job is to truncate the line, put in interim measures that are satisfactory, particularly for people coming from the Upper Hunter region, and thirdly the task we have been given is to implement the light rail."

3. Conclusions

The decision to truncate the railway line at Wickham is a poor one that should be quickly reconsidered. The investment of some $350 million for track upgrades to allow for faster trains from Newcastle to Sydney would do much more for Newcastle than cutting the track at Wickham and installing light rail at an estimated cost of some $350 million.

As noted below, it is likely that if the NSW Government puts into effect its decision to cut the Newcastle rail line at Wickham, future generations will regard this action harshly.

Associate Professor Philip Laird, Ph D, FCILT, Comp IE Aust
Faculty of Engineering and Information Sciences
University of Wollongong NSW 2522
10 October 2014

APPENDIX A ENERGY EFFICIENCY AND RAIL

During 2011-12, cars, buses and trucks used nearly 32 billion litres of petrol, diesel, and LPG (Australian Bureau of Statistics, Canberra (2011) *Survey of Motor Vehicle Usage for 12 months ended 30 June 2012. Cat. No. 9208.0* at abs.gov.au*)*.

By way of contrast, rail used 1.67 billion litres of diesel (or its equivalent in a year for a smaller passenger task but a larger freight task than road (Australasian Railway Association Australian Rail Industry Report 2013 at ara.net.au). This reflects the fact that rail is much more energy efficient than road transport to move people and freight.

In a technical sense, for moving passengers, the preferred unit of energy efficiency is passenger kilometres (pkm) per megajoule (MJ) where, for example, one litre of petrol is equivalent to 34.7 MJ of end use energy and one Kilowatt Hour of electricity is 3.6 MJ. Cars average about 0.35 pkm per MJ and urban rail averages about 0.65 pkm per MJ. Of course, there are variations - a car with three passengers in freely moving traffic could get to 0.65 pkm per MJ, and a four wheel drive with no passengers in a congested city will do less than 0.2 pkm per MJ whilst a fully laden train double decked train will give 2 pkm per MJ.

For freight, the preferred unit of energy efficiency is net tonne kilometres (ntkm) per megajoule (MJ) where, for example, one litre of diesel is equivalent to 38.6 MJ of end use energy. Rigid trucks in urban areas give less than 0.3 ntkm per MJ, intercity articulated trucks average about 0.9 ntkm per MJ, whilst intercity freight trains average about 2.7 ntkm per MJ.

A.1 An International View

A mid 2014 United States report has examined energy efficiency in 16 OECD countries on the four fronts of national efforts, buildings, industry and transport. The 2014 ACEEE International Energy Scorecard (via http://www.aceee.org) is based on points awarded for 31 key metrics using OECD, International Energy Agency and other independent data. On a combined policy and performance basis, Germany was ranked first, Australia tenth and Mexico last at 16th. Regretfully, (page 16) "One country in which a clear backward trend exists is Australia." The report notes that this has occurred recently.

Moreover, in the transport sector, Australia was ranked last (16th) with just 7 points out of 25. Of the 8 key metrics, Australia scored zero points for each of three metrics: Fuel economy of passenger vehicles on both performance and the setting of future standards, and, for having no fuel efficiency standards for heavy trucks.

For each of four metrics including the use of public transit, and, investment in rail transit versus roads, Australia scored just one point each.

Only in the metric "energy intensity of freight transport" did Australia get full marks. This score was assisted by the very high energy efficiency of the iron ore railways in the Pilbara region of WA.

Such a low ranking for transport energy efficiency policy and performance should act as an incentive for Australia in general, and New South Wales in particular, to do better.

A.2 Some Australian views

In the late 1990s, both Engineers Australia and the Chartered Institute of Logistics and Transport gave considered warnings that cheap oil would not last forever, and more energy efficient transport was needed.

These warnings were followed in 2002 with one from the then Secretary of the Australian Treasury, Dr Ken Henry in an address to the ATRF and BTRE Colloquium in October 2002 (http://archive.treasury.gov.au/documents/440/PDF/Transport_Speech.pdf) about the very challenging problems posed to future generations on the projected increases in urban traffic and interstate road freight.

A.3 Some comment on rail

For Australia as a whole, reference is made to the 2010 Engineers Australia Infrastructure Report Card:

> "Rail has been given a D+ rating. Rail infrastructure includes metropolitan passenger networks, freight and regional passenger services, grain lines, the interstate networks and private railways. The low rating has been given on the basis that urban rail networks cannot cope with demand. There is a need for a high speed rail network along the eastern coast of Australia to ease airport congestion and to reverse the trend of declining regional rail utilisation, which is resulting in more road traffic. The interstate network and Pilbara railways in particular are in a good condition.
>
> "Improving the efficiency and productivity of existing rail networks is a challenge in many jurisdictions. … The investment to achieve improvements will require substantial investment over at least a decade."

Sydney comes in for particular mention, including its population predicted to increase by 550,000 people by 2021 and that transit times need reducing to the neighbouring centres of Wollongong, the Blue Mountains and Newcastle are. In several cases, these times are slower than in the past. Examples are cited in the EA report, including from a 2009 paper *On*

the Right Track: Why NSW Needs Business Class Rail, by Buckingham and Hartwich from The Centre for Independent Studies.

Attention is also drawn to a 2012 report *Can we afford to get our cities back on the rails?* of the Grattan Institute. The paper looks back to the 19th Century, and towards the end, after reviewing a number of potentially valuable projects, and possible measures of part funding them, concludes:

> None of these measures are politically easy but there is evidence that voters have a big appetite for change in urban transport. In a 2011 survey for the National Transport Commission close to half the population agreed they would - like to be able to drive less – and more than four in five agreed that the government should develop more public transport services to give people a realistic alternative to driving. With political leadership and a clearer linking of costs and benefits, new urban rail lines might yet have a place in our future transport mix.
>
> Perhaps the most obvious lesson of history is that urban passenger rail is a long-lived asset that can benefit a city more than a century after it is built. As J.J.C Bradfield wrote about the Sydney Harbour Bridge: ―*Future generations will judge our generation by our works.*

Elsewhere (Submission by this writer re NSW Infrastructure to Rebuilding NSW September 2014 or in more detail, a submission to the Productivity Commission at http://www.pc.gov.au/projects/inquiry/infrastructure/submissions (#3)), other states have examples of cost effective rail projects (the Queensland Rail Mainline Upgrade of the 1990s, the Alice Springs to Darwin railway (completed 2003), Victoria's Regional Fast Rail (completed 2006), and, the Perth to Mandurah Railway (opened 2007). However, New South Wales has a history of expensive major rail projects. These include Epping to Chatswood (opened 2009), Cronulla-Sutherland part duplication, (opened 2010), and, the Southern Sydney Freight Line (opened 2013). Each of these three projects had lengthy delays and large cost escalation (all up in the order of $2 billion).

In addition, three states (Queensland, Victoria and Western Australia) have found it possible to operate intercity trains at speeds of up to 160 km/h. Why not New South Wales ?

It is likely that if the NSW Government puts into effect its decision to cut Newcastle rail line at Wickham, future generations will regard this harshly. Instead, as above, the money to build a replacement light rail would be better directed to track upgrades in a cost effective manner.