

**Submission
No 2**

**INQUIRY INTO RAIL INFRASTRUCTURE PROJECT
COSTING IN NSW**

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Submission re Rail Infrastructure Project Costing in NSW

To NSW Legislative Council General Purpose Standing Committee No. 3

Philip Laird, University of Wollongong, September 2011

This submission will draw on research conducted at the University of Wollongong. However, it does not necessarily reflect the views the University. This submission shall be of a general nature and is in response to a letter dated 23 August from the Chair of the Committee.

1. When a major rail or road project is proposed, a cost estimate is needed before approval is given to proceed. This applies to rail proposals of both government and private sector (e.g. mining railways).

2. Before project approval is given, many factors may require additional project expenditure. These factors may include environmental impact mitigation (e.g. route relocation, and/or noise walls), occupational health and safety requirements, and third parties (including Councils) securing generous compensation measures (e.g. parking near stations).

3. Possibly the most extreme pre-approval cost inflator for a major NSW rail project was a decision announced in August 2001 to replace the proposed Parramatta (Chatswood) Rail Link rail bridge over the Lane Cove River by a tunnel. This was despite the fact that there was a nearby road bridge.

As noted (Review, infrastructure.gov.au/roads/F3toM7Review):

In 1989, the NSW Government of the day accepted community concerns relating to a surface road linking the F3 to the M2 Motorway through the Lane Cove National Park. This resulted in the project not proceeding at that time because of these potential environmental effects on the Park and on those that use the Park. A similar decision was taken more recently by the Carr Government on the issue of the proposed Epping to Chatswood rail line bridge in the Lane Cove National Park. Due to community concerns a decision was made to put the rail line in tunnel....

The willingness of Government to avoid social and environmental impacts of surface infrastructure projects in Sydney has seen major projects being constructed in tunnel, including the Eastern Distributor and M5 East Freeway. In all cases, while

these projects result in external benefits not costs, they result in very high capital costs and higher operational costs, placing these projects on the limit of economic acceptability and affordability.

The Lane Cove River rail tunnel required ‘cut and cover’ and was one of “the most significant challenges” for the Epping Chatswood Rail link. The decision of the NSW government of August 2001 to replace a bridge over the Lane Cove River by a tunnel:

- a. added complexity, cost and delays to the project (which was followed in 2003 by a decision to only construct the section from Epping to Chatswood),
- b. required steeper grades and lengthened the overall Parramatta Rail Link track by almost one kilometre, adding to travel times and operational costs,
- c. deprived the University of Technology Sydney at Kuringai a station; and,
- d. restricted the options for deployment of electric multiple units.

In 1998 an official NSW Government statement *Action for Transport 2010* listed a number of rail projects for completion, including the 28 km Parramatta Rail Link by 2006 at an estimated cost of \$1.4 billion. Instead, the 12.5 km Epping to Chatswood section opened on 23 February 2009, at a cost of \$2.3 billion.

Lessons should be learnt from the Parramatta Rail Link and these include a need not to give undue weight to the claims of special interest groups.

4. By way of contrast to the Epping Chatswood Rail link, the 72km Perth Mandurah railway was completed in 48 months, and opened on December 2007. The cost, as noted in the book “48 months – 48 minutes” (Longhurst, D (2008) Rawlhouse Publishing) was about \$1.184 billion. The electric rolling stock, made in Queensland, was about \$300 million.

The route of the project was changed to include more direct access to Perth after a change of government by Minister Alannah MacTiernan, who managed to gain (p23) ‘the extra funds that were required from the Treasury.’

The project included two underground stations. The average cost, excluding rolling stock, was about \$18 million per kilometre. This is about one tenth of the final average cost per km of the Epping Chatswood Rail Link. Further information is given by Waldock, R., Martinovich, P., Cartledge, A., Hamilton, R. (2008), *New Metro Rail Project – Lessons Learned* May 2008, Public Transport Authority WA, Perth at :

http://www.ceiid.wa.gov.au/Docs/KNF_200805/MAY08-NewMetroRailProject.pdf

Even though the project was a success by national and international standards, those responsible took the time to reflect on what could have been improved. Of particular interest is one page What Would We Do Differently Next in the presentation Lessons Learnt Southern Suburbs Railway CONSTRUCTION - COMMISSIONING - OPERATIONS

1. Tighten and manage project scope or ensure a suitable model is in use that allows for variations to be more successfully managed;
2. Make better use of contract management clauses and tools available to manage poor performance and program management;
3. Develop a means to deal with interface issues resulting in scope change by initial works packaging;
4. Ensure specifications are set to appropriate level with key elements prescriptively defined. Take a more proactive approach to risk management with appropriate interventions included in standard specifications.
5. Ensure suitable investment in the retention of appropriately skilled technical expertise in house.

The point about adequate in house technical expertise is an important one. It was also touched upon in a recommendation (#22) of the House of Representatives Standing Committee on Transport and Regional Services (2007) *The Great Freight Task: Is Australia's transport network up to the challenge?*

<http://www.aph.gov.au/house/committee/trs/networks/report.htm>

5. By way of further contrast with NSW, the WA Government was able to introduce in 2007 an integrated ticketing system for Perth public transport.

6. Another NSW Government rail project with significant cost escalation was that of Cronulla-Sutherland part duplication and signalling. As noted in a Media Release of 23 April 2010 by then Shadow Minister Shadow Minister for Transport Gladys Berejiklian MP "The project was first announced in 2003 at a cost of \$106 million and was promised to be completed by 2008". This cited an earlier Media Release (Hon Carl Scully, 25 February 2003) who noted that the project would also include signaling and train stabling.

The project was opened in April 2010 at a stated cost of \$436 million. In this case, the project cost had escalated four fold.

7. One source of problems was a decision of the previous government to separate project supervision, from State Rail initially to Transport Infrastructure Development Corporation or TIDC. TIDC was sometimes referred to, unofficially of course, as "Twice Indicated Direct Costs". Later this became "Thrice Indicated Direct Costs".

8. A further source of problems since 1995 (and including the time of the Sydney 2000 Olympics in which State Rail gave a Gold Medal performance), was constant changing of both chief executives and structure. For State Rail, a list starting 1995 follows.

Len Harper	1995	1996
David Hill (six months only)	1997	1997
Simon Lane	1997	1999
Ron Christie (acting)	1999	2000
Lucio De Bartolomeo (acting)	2000	2001
Howard Lacy	2001	2002
Vince Graham	2003	2008
Rob Mason	2008	to present

From 1995 to date there have been no fewer than 8 chief executives, The structure changes include State Rail being split into four authorities in 1996 (State Rail, FreightCorp, Rail Services Authority and Rail Access Corporation). The latter two authorities were merged to form Rail Infrastructure Corporation following the Glenbrook accident leaving three authorities. Following the sale of FreightCorp in 2002, and after the Waterfall accident, merger of State Rail and the Rail Infrastructure Corporation took place. Further changes followed a lease in September 2004 of Interstate and Hunter Valley track to the Australian Rail Track Corporation.

As seen by a senior manager after leaving State Rail for Britain (June 2003 RTSA Newsletter at rtsa.com.au) "As I view from afar the NSW railway going through another reorganisation I wonder if the politicians will ever leave a structure in place for long enough for it to settle down. I have now well and truly lost count of the iterations it has gone through. It is so obvious that Queensland has got it right in this (and many other) respects."

9. Further problems were to arise from the 1999 Glenbrook fatal collision of two trains, and, the January 2003 Waterfall fatal derailment. These two fatal accidents stand in contrast with the safety record of other rail authorities in Australia.

10. Cost escalation, and other problems prevented the former NSW government from delivering on the official 1998 NSW Government Action for Transport Statement.

One important project was the North West Railway (as above). Another was track upgrades to speed up trains between Sydney and Newcastle. Yet another was a new Waterfall-Thirroul Route that was to reduce Sydney Wollongong train transit times by 15 minutes. In 1998, the cost estimate was understood to be some \$300 million. This was totally revised in 2003 (in a consultants report to the NSW Government) to cost about \$1.4 billion \pm 30 per cent. Two partial realignments of this winding track near Helensburgh were noted at an indicative cost of \$779 million (best travel time savings) and \$600 million (best value).

11. The failure to complete these rail projects has resulted in more road vehicle usage in the Sydney Metropolitan Region. Road vehicle usage in Sydney is costly in many ways, not just in road system costs, but also road crashes (conservatively estimated at about \$3 billion per year), air pollution health related costs from air pollution from motor vehicles (a further \$1 billion per year), and noise. Further information on external costs is given by this writer in a 2005 Australasian Transport Research Forum *Revised Land Freight External Costs In Australia* at <http://www.patrec.org/atrf.aspx>

In addition, a 2007 BTRE publication "Estimating urban traffic and congestion cost trends for Australian cities" Working Paper 71 (p13) notes the social costs of road congestion during 2005 in Sydney as about \$3.5 billion. By 2020 this was expected to rise to approximately \$7.8 billion for Sydney.

12. Another rail project in Sydney, with delays and cost escalation has been that of the Southern Sydney Freight Line (SSFL) being constructed mainly by the Australian Rail Track Corporation (ARTC) on land to be leased from RailCorp.

The aim of the SSFL is to provide a dedicated freight line for a distance of 36 kilometres between Macarthur and Sefton in southern Sydney, allowing passenger and freight services to operate independently. It is part of a wider program of works to improve the efficiency and cost-effectiveness of rail freight services along the North-South Rail Corridor between Melbourne, Sydney and Brisbane. At present, during morning and afternoon peak periods, freight services are not permitted to run between Macarthur and Sefton due to passenger priority. As a result, freight services cannot arrive or depart Sydney at the optimum times thus putting more heavy trucks on the Hume Highway.

Following the take up in September 2004 of a 60 year mainline track lease, the ARTC continued planning for the SSFL. By 2005, the budget for the SSFL was about \$175 million and in April 2006, an Environmental Assessment was put on exhibition for public comment.

On 5 February 2009, Federal Transport Minister Albanese announced that construction work had commenced on the 36 km SSFL, to "help clear the single largest bottleneck on the interstate rail network" at a cost of \$309 million. The project was then scheduled to be completed by early 2010.

However, on 3 November 2009, the ARTC announced that the programme for delivery had been delayed "due to three key issues that have directly impacted on the original delivery programme"

Firstly, the windows available to conclude signal design and modifications to the RailCorp ATRICS signalling system do not match the current project delivery schedule which means signal changes may not be made until November 2010 or early 2011.

Secondly, it has become necessary to redesign part of the route to minimize impact on the Glenfield Garbage Tip. Changes to the garbage tip area have necessitated this redesign so as to minimize the impact on the tip area and reduce the exposure of the line to future environmental issues in the tip area.

In addition, requirement for more extensive service re-location along aspects of the rail corridor has had an impact upon estimates of quantities of materials required for the project. Due to the significant size of this infrastructure project and the adjustments to its delivery, quantities need to be recalibrated for the final construction of the line."

It was clear in Spring 2009, with RailCorp relay boxes and a relay box still in place in the path of the future freight track between Glenfield and Campbelltown, that there would be delays to the SSGL.

On 14 September 2010 the ARTC announced that "The Leightonfield-Sefton section of the SSFL is expected to be finished by mid 2011" whilst deferring the line between Macarthur and Leightonfield.

As of 16 September 2011 freight trains were yet to start using this section.

On 1 August 2011, ARTC announced that Leighton Contractors had been selected by to deliver the final stage of the SSFL (in an Alliance contract worth \$150 million) "to complete the construction of a 36km dedicated freight line between Macarthur and Sefton in

southern Sydney. The SSFL will provide a third track in the rail corridor specifically for freight services, allowing passenger and freight services to operate independently. ... the Alliance expects to start construction in October and completion is scheduled for late 2012.

13. In the lead up to the 2007 Federal election, Prime Minister Howard announced \$840 million to expand track capacity between North Strathfield to Gosford. This received bipartisan support.

On 5 February 2009, Federal Transport Minister Albanese announced "The allocation of \$15 million to accelerate planning and design work on the Government's \$840 million investment in a new dedicated freight line between North Strathfield to Gosford".

It is now late 2011, and one has to wonder at the long delay between ARTC and RailCorp in agreeing (after four years now) to a scope of works that will benefit both freight train movements and passenger train movements.

14. Poor transport planning within NSW has cost NSW significant federal funding. This is not only for urban passenger trains but for freight trains.

As an example of poor, delayed, or even non-existent transport planning in NSW, take the challenge of developing a freight strategy for NSW, which was mentioned in the 1998 official NSW Government statement *Action for Transport 2010*. An article in the Australian Financial Review for 6 August 2001 "NSW ports, freight facilities under review" noted that the then NSW Transport Minister (Mr Scully) has "ordered five, 10 and 30-year plans to address potential bottlenecks in the operation of ports in the international economy."

As noted in the article, the Minister went on to say "we are thinking ahead to ensure that we are not going to be disadvantaged in the medium term".

The past decade went by without a NSW freight strategy being released. It is possible that the former Premier Mr Nathan Rees MP on the last day of office as Premier, on 4 December 2009 was to release a transport strategy that was to include freight. During 2010 a NSW freight strategy was promised, but not delivered that year. Or prior to the NSW election held 26 March 2011.

15. Further cost escalation can occur when inappropriate OHS requirements are imposed. One example given at a 2011 meeting was an electrical substation on the RailCorp network requiring both a disabled parking space outside and toilet inside, when it was unlikely that a disabled person would ever be asked to go to the substation.

16. "Easy Access" rail stations come at a higher price. In some cases, it would be better to have more track and stations than are currently provided, even if access was not so easy to all stations.

17. Light Rail costings, recently escalated to \$176 million for the proposed 5.6km extension to Dulwich Hill, are of concern. This is particularly so given the new Light Rail line will make use of a former goods line that is no longer used for moving freight.

The existing Light Rail network has served Sydney well since it was opened in two stages (initial 1997 and in 2000 to Lilyfield with a total length of 7.2km). The Sydney light rail is operated by Metro Transport Sydney who also operates the Sydney Monorail (opened in 1988). The \$65 million cost of the first section was augmented by \$21 million from the Federal Government's 'Building Better Cities' programme, whilst the second stage received \$16 million of NSW Government funding, and averaged about \$7.5 million per km.

Since the extension of light rail to Lilyfield in the year 2000, Trams (Light Rail) have since been extended in both Melbourne and more recently in Adelaide. It is understood that the Adelaide CBD extension cost about \$15m per kilometre. Further information on the Adelaide and other urban transport projects is given in an Australasian Transport Research Forum paper by Mr Martin, "Reviewing the last decade of Australian public transport infrastructure projects".

18. Energy efficiency and oil vulnerability issues affecting the transport of people and freight are identified in many reports, including a report released 7 February 2007 of the Senate Rural and Regional Affairs and Transport Committee from the Inquiry into Australia's future oil supply and alternative transport fuels. The report noted that "*if there is a long term rise in the price of fuel, this will favour rail because fuel is a greater proportion of costs for road transport. This may suggest a need to increase the pace of catchup investment in rail infrastructure.*"

In this regard, the 2008 Garnaut Climate Change review report noted (Chapter 21 'Transforming transport', p 503) that "*Governments have a major role in lowering the economic costs of adjustment to higher oil prices, an emissions price and population growth, through planning for more compact urban forms and rail and urban public transport. Mode shift may account for a quarter of emissions reductions in urban public transport...*"

If international oil prices continue to trend upwards, or even if they stay about the same as at present and the Australian dollar falls to levels of several years ago, Australians

will be looking at petrol prices of \$2 per litre. Indeed, this level has already been reached in New Zealand. An increase in NSW petrol prices to \$2 per litre will put a lot of pressure on existing public transport, and an increased level of scrutiny as to past government failure to extend Sydney's urban rail network.

19. It is submitted that much more attention needs to be reserving corridors, both State and Federal Governments for not only new railways, or minor works close to existing railways, but also for future rail deviations. The Queensland Transport Minister, The Hon Paul Lucas MP (as quoted, Track and Signal, Oct-Nov-Dec 2005, page 77) has noted the need to “reserve rail corridor land before it becomes a costly issue”.

The Victorian Government planning process has recently allowed identification and preservation of a major new road and rail corridor, the Outer Metropolitan Ring/E6 Transport Corridor.

20. The Roads and Traffic Authority of NSW or RTA has tended to fare better than rail in both funding and advanced planning. Of note are the comments, that are still valid, of Mr Ron Christie when addressing the Sydney Chapter of the RTSA in May 2001, mentioned the Roads and Traffic Authority of NSW or RTA. Mr Christie's career included Deputy Chief Executive of State Rail, and, Chief Executive of the RTA.

“The RTA has developed, over a long period of time, a comprehensive planning group that has successfully implemented many projects compared to that of the various Rail Authorities.”

21. Once approval is given, the completion of major projects - both road and rail - are subject to many uncertainties. These will determine whether the project will be built on time and/or within budget.

A major uncertainty is the weather. Good weather may allow a project to proceed without delay, and in some cases, e.g. former Hume Highway deviations, to be opened months early. Bad weather may not only result in delays, but additional costs.