

**INQUIRY INTO IMPACT OF PORT OF NEWCASTLE SALE
ARRANGEMENTS ON PUBLIC WORKS EXPENDITURE IN
NEW SOUTH WALES**

Name: Mr Paul and Mrs Narelle van den Bos
Date Received: 6 January 2019

Dear Commissioners

We, Narelle and Paul van den Bos, like to make a submission in support of the Port of Newcastle, with some recommendations.

Our submission is based on transportation and traffic issues.

Our background

We live in

In 1990, we formed our company Paul van den Bos & Associated Pty Ltd (ABN 65 050 335 487), and operate under the trading name Transport Modelling. We specialise in the numerical and analytical aspects of the land use – transport interface. Our colleagues in three States have recognised our knowledge and skills in this area, with the result that our company is on the ACT, NSW and QLD State Government transport modelling panels – since the inceptions of those panels.

The Moorebank Intermodal Terminal is being built in our Local Government Area.

It is from our involvement with the Moorebank Intermodal, and our background in transportation that we make this submission.

Our submission is based on the science of transportation.

We have no vested interests in either the Moorebank Intermodal or Port of Newcastle.

Our views are based on what we know is best for our State and Country.

Simplifying the science

Our submission is split into two parts: “existing freight” and “future freight”.

Further, our discussion is split into Sydney-wide and Newcastle-wide.

Given that transport infrastructure has a long life (say, 50 years), the discussion of “future freight” will also be based on the long-term view.

Existing Freight

At this moment, late 2018/early 2019, the Port Botany traffic is around 75% of the 3,000,000 TEU “cap” that the Planners and Engineers imposed when Port Botany was being planned.

This cap was based on science. See Appendix A – Port Botany EIS + flaws in the transport modelling.

At this moment, the NSW Government, truck operators, and Port Botany and surrounding residents are well aware of the existing “land transport side” limitation, with the daily press regularly carrying articles detailing the issues relating to the existing “land transport side” limitations. This shows that the Planners and Engineers who worked on this project were close in their future estimations. We are approximately 75% of the cap.

For the sake of simplicity, assume that the existing system “works” – even if there are “squeaky wheels” - it is important to look at the whole system (especially when we look at the future).

From a planning point of view, a much wider angle on freight transport must be used.

Future freight

When the NSW Government sold Port Botany, the 3,000,000 TEU cap was removed.

If the freight volume is going to be doubled, or trebled, the capacity of the road/rail transport would need to be doubled or trebled. Such a conclusion does not require a Master of Transportation degree, just common sense.

However, until this very day, *very little is known or indeed published, on **how the freight volumes exceeding this cap is to be moved.*** This is in an environment where the existing freight is about 75% of the old 3,000,000 TEU cap, and the daily press regularly carrying article about the “squeaky wheels”.

Total picture - simplified

There are two considerations to the land transport side: (1) the destination of the containers, which is a “land use planning” issue, and (2) the desirable split of mode of transport (truck and rail) to take the freight to the destination. This latter issue relates to transport planning.

Focussing on the “future freight”, and looking at the “land use planning” side:

- The NSW Government together with the Federal Government are building a City, approximately twice the size of Brisbane, in Western Sydney.
- Therefore, the primary freight destination will be this new City.
 - There are second-order and third-order growth areas.
 - It is possible that “squeaky wheels” will take the focus away from primary area.

Once the primary freight destination has been established (growth centre in Western Sydney, twice the size of Brisbane):

- “What is the best mode of transport for freight to the new City?”.
- There are three nearby Ports: Port Newcastle, Port Botany and Port Kembla.

The NSW Government and Federal Government current policy is that all future freight should be from Port Botany, then

- railed to Enfield, and then trucked from there, and
- railed to Moorebank and then trucked from there

Enfield - Moorebank

Many people have expressed their concern about this solution. For example, the recommendation made by Infrastructure NSW, to the NSW Government.

The screenshot shows page 124 of the 'First things first' report (2012-2032). The page is titled '9.5 Freight rail infrastructure around Port Botany'. It discusses infrastructure options to increase the proportion of container freight moved by rail. A red box highlights a recommendation: 'Infrastructure NSW recommends that State public funding for additional intermodal capacity in Sydney (including in relation to supporting infrastructure) be minimised until there is greater clarity on whether the short-haul freight market is viable.' A yellow box at the bottom of the page states: 'Since this advice comes from people who have shares in Moorebank Intermodal Terminal, it is doubly relevant'.

First things first
The State Infrastructure Strategy 2012 - 2032

9.5 Freight rail infrastructure around Port Botany

This section discusses infrastructure options to increase the proportion of container freight moved by rail, taking account of the dynamics of this market set out in Section 9.2.

The freight rail infrastructure network includes:

- rail marshalling yards at Port Botany
- dedicated freight rail lines in the metropolitan area through the Metropolitan Freight Network
- rail lines shared with passenger trains
- intermodal terminals and surrounding warehousing infrastructure.

9.5.1 The vision for intermodal terminals

The major infrastructure requirement identified to

Recommendation: Infrastructure NSW recommends that State public funding for additional intermodal capacity in Sydney (including in relation to supporting infrastructure) be minimised until there is greater clarity on whether the short-haul freight market is viable.

Infrastructure NSW (State Infrastructure Strategy)

The solution **Section 9** intermodal gateways **Page 124**

Moorebank

The Federal Government promised that Moorebank Intermodal Terminal would:

The screenshot shows the Australian Government website page for the Moorebank Intermodal Terminal Project. The page is titled 'Moorebank Intermodal Terminal Project' and provides information about the project's development, funding, and background. A red box highlights a bullet point: '3,300 trucks a day taken off Sydney's roads between Port Botany and Moorebank by shifting freight to rail'.

Australian Government
Department of Finance and Deregulation

Home > Recruitment > Ministers > Publications > Reports > Policy & Legislation

Close all menus

Home >> Land, Property and Asset Management >> Moorebank Intermodal Terminal Project

Moorebank Intermodal Terminal Project

In April 2012 the Australian Government committed to development of the Moorebank Intermodal Terminal (IMT) Project after reviewing the findings of a detailed business case for the facility. You can read the [executive summary](#) (1.9 MB).

The project involves the development of freight terminal facilities linked to Port Botany by rail, increasing Sydney's rail freight capacity and reducing road freight on Sydney's congested road network.

The detailed business case identified a number of major benefits of the Project including:

- 3,300 trucks a day taken off Sydney's roads between Port Botany and Moorebank by shifting freight to rail
- Approximately \$10 billion in economic benefits including reduced freight costs, reduced traffic congestion, reduced traffic accidents and improved productivity
- Improved environmental outcomes, with less fuel used and less emissions due to reduced road freight – trains generate fewer emissions and use less fuel than trucks for each container moved
- An estimated total of 2,625 construction jobs for the port shuttle and interstate terminals and a further 1,700 jobs for the south western Sydney region.

The design, construction and operation of the terminal will be undertaken by the private sector through a competitive process, in which they will be provided with an opportunity to contribute to the overall funding of the Project. The Government will establish a Government Business Enterprise to manage the process from 2013.

Funding for the next year of preparatory work for the project will be released in the Federal Budget on 8 May, enabling further development of plans for a port shuttle terminal to open in mid-2017.

The project is subject to planning approval with a draft Environmental Impact Statement due to be displayed late in 2012 to enable public feedback. Both Federal and NSW planning approval is being sought.

Background

In May 2010 the Australian Government tasked the Department of Finance and Deregulation to conduct a Feasibility Study (the Study) into the potential development of an intermodal terminal (IMT) at Moorebank in south western Sydney. The Study, comprising the development of a detailed business case, concept plan and environmental planning approval process, has been assisted by a group of advisers led by KPMG. The Study includes a detailed examination of economic, financial, social, environmental and technical issues.

The corporate advisory firm, Greenhill Calburn Pty Ltd, confirmed that the recommendations of the detailed business case will optimise early private sector involvement and investment through an open and transparent process, whilst ensuring that the Commonwealth's objectives are met to the maximum extent possible, and the Commonwealth site is the better option than the adjacent private sector site due to its closer proximity to connecting infrastructure and capacity for full interstate service delivery.

- [Greenhill Calburn - Peer Review Phase 1 Report](#) (564 KB)
- [Greenhill Calburn - Peer Review Phase 1 Report](#) (1.34 MB)

Other Languages

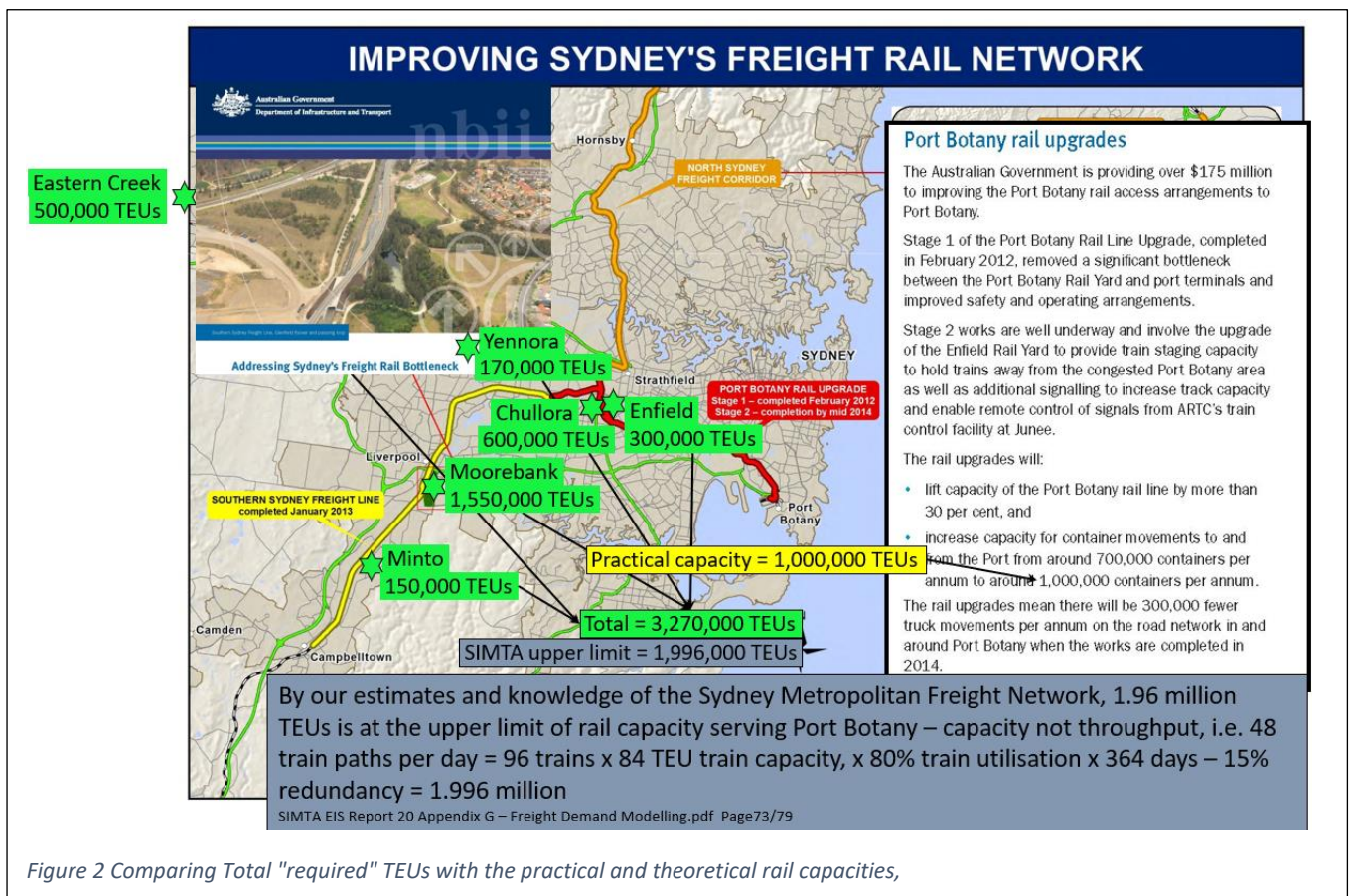
- العربية - Arabic
- 中文 - Chinese(Simplified)
- Hrvatski - Croatian
- Filipino - Filipino
- Ελληνικά - Greek
- ગુજરાતી - Hindi
- Italiano - Italian
- ខ្មែរ - Khmer
- Македонски - Macedonian
- Samoa - Samoan
- Српски - Serbian
- Español - Spanish
- Tiếng Việt - Vietnamese
- Türkçe - Turkish

- take 3,300 trucks take off the M5 between Port Botany and Moorebank by shifting freight to rail, and
- provide approximately \$10 billion in economic benefits.

Moorebank - rail

Looking at rail capacity in broad term, using a back-of-an-envelope, we can add the TEUs at the existing (and future Eastern Creek) intermodal terminals and then compare this total with the rail capacity.

We have plotted the Intermodal Terminal locations on a map, and added text from two sources: Australian Government and SIMTA EIS.



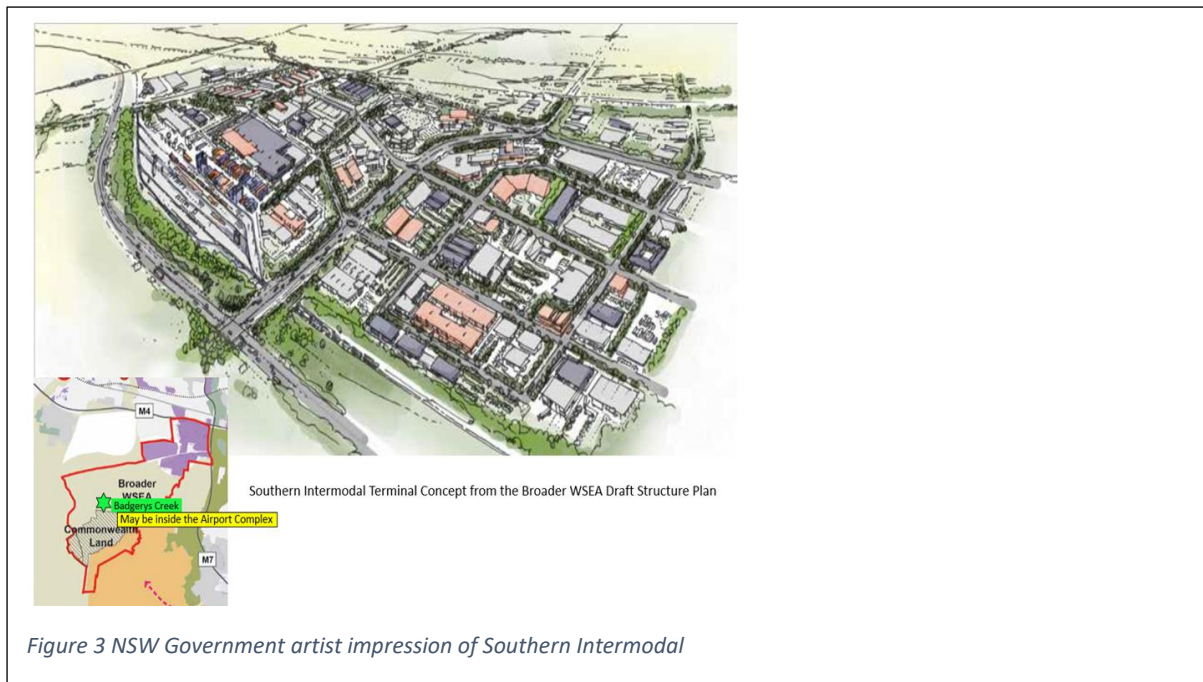
The back-of-the-envelope total freight (including Eastern Creek with 500,000 TEUs), is 3,270,000 TEUs. The SIMTA's EIS calculations, see reference in image, provides an upper limit of 1,996,000 TEUs.

Note the observation: ***"With the SIMTA proposal requiring 21-22 paths at its peak, this may severely limit train paths to other users if no improvements were carried out by ARTC to alleviate this limitation in the next 10 years. This could also limit train paths available for containers bound for other intermodals SIMTA"***

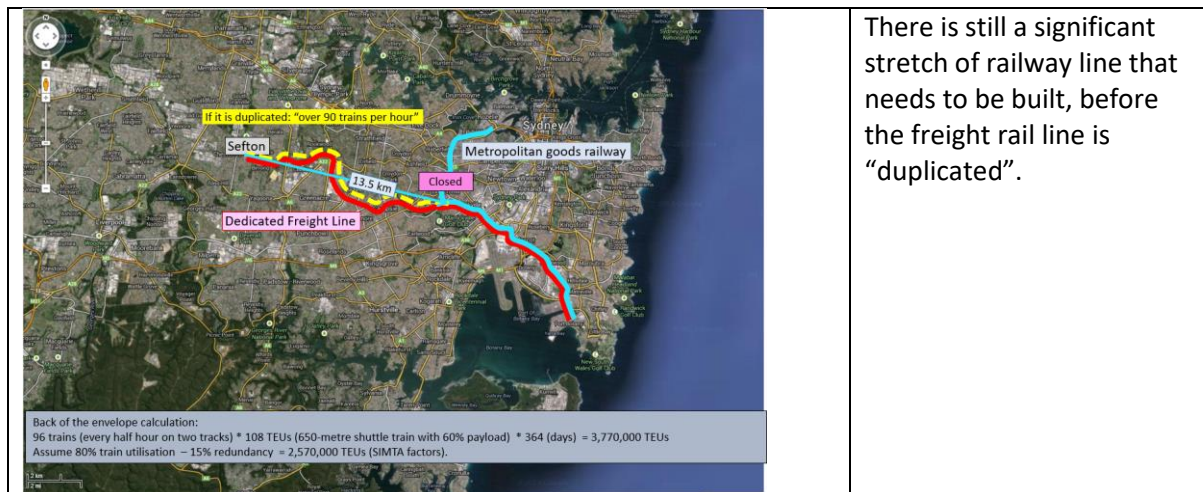
EIS Report 21 Appendix H - Rail Access Report.pdf Page 6

This indicates that not all freight can be carried by rail. Not by a long shot. There is just not enough rail capacity.

These numbers do not include the future Badgerys Creek (Southern Intermodal Terminal) (Figure 3).



What is known in the industry, but may be not outside:



Summarising so far:

- Infrastructure NSW has advised the NSW Government a "wait and see" approach towards Moorebank Intermodal.
 - Now, some six years after opening Enfield, our understanding is that the operation is less than what was initially expected.
- SIMTA, the proponent of the Moorebank Intermodal Terminal, openly states its concern about the rail infrastructure capacity.
 - Note that Figure 2 do not contain the "Southern Intermodal Terminal" at Badgerys Creek.
- Even lay people, understand that duplicating a freight rail line is expensive, as additional land will be required, sound issues need to be incorporated into its development, and well as environmental consideration.

Moorebank – road

This image comes from the MICL EIS – see reference in the bottom right hand corner.

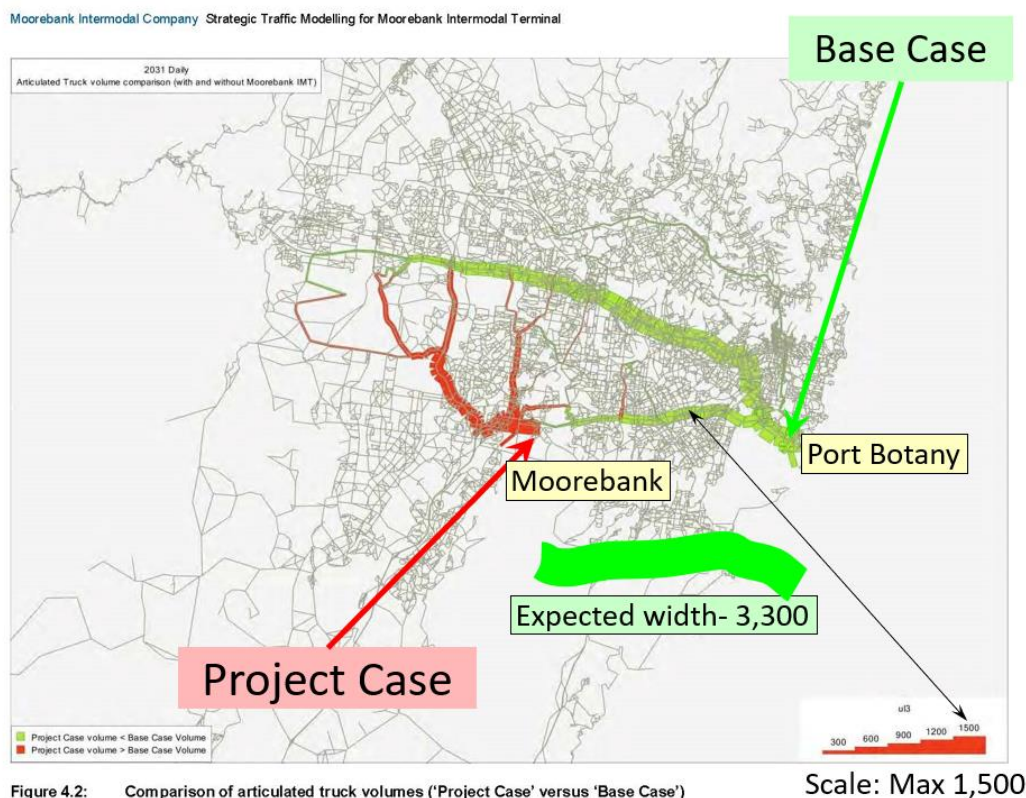


Figure 4 MICL EIS Difference plot between Base Case + Project Case: Moorebank Intermodal Terminal

Figure 4 is a “difference plot”. It is a standard image used in transport modelling to show the differences between two scenarios.

How to examine a difference plot:

- The green lines show traffic reduction and the red lines show traffic increase. The widths of the lines reflect the traffic volumes.
 - We can see the traffic reduction on the West Connex near Port Botany and M4 (in the middle of the plot).
 - There are red lines around the Moorebank Intermodal.
 - Immediately, we can see that **the truck trip origin and destination have shifted** from Port Botany to Moorebank.
- Notes
 - the scale: max: 1,500 trucks per day
 - closely examine the width of the green line on the M5, between Port Botany and Moorebank – and interpolate the number
 - The expected width from the 3,300 reduction in truck movements is drawn in green

It is clear, that Federal Government estimates are not even in the ball-park of science.

One possible way of how the Federal Government generated the 3,300 number is as follows.

- Assume a truck carries one full (20-foot) container in one direction, and one empty container in the other direction. This is an over simplification, but now we can relate one TEU (twenty Foot Unit) to one truck. This relationship is used by both the NSW and Federal Governments when communicating with the public.
- Assume the Federal Government Intermodal capacity = 1,200,000 TEU per year.
- Simple calculation: $1,200,000 / 365$ days per year = 3,287.7 TEUs per day.
 - For the general public, round it off to 3,300.

If the reader is shocked with this level of analysis by the Federal Government, please do not stop reading – there is more shocking facts to come.

Moorebank Project - economic benefits

Looking at the economic benefit analysis that yielded \$10 billion. The \$10 billion economic benefits are over 30 years and in net present value is approximately \$950 million.

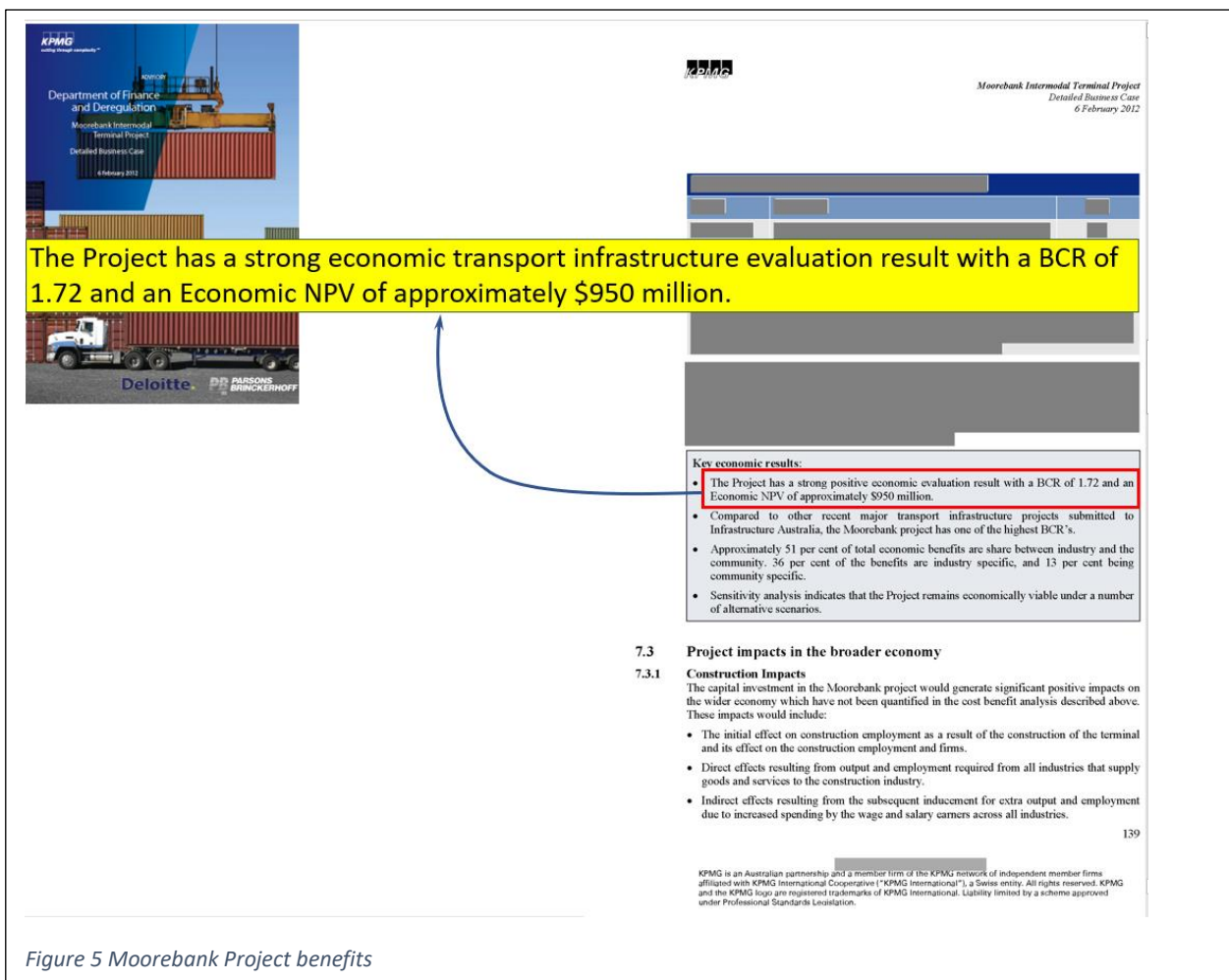


Figure 5 Moorebank Project benefits

It is noted that over \$1 billion was spent moving the Military School of Engineering to make way for the Moorebank Intermodal Terminal. The public was advised that that \$1 billion came from “another budget”, and therefore it should not be counted (if it was not tax-payers’ money, where did that money come from?).

Examining the components of the Australian Government economic benefits.

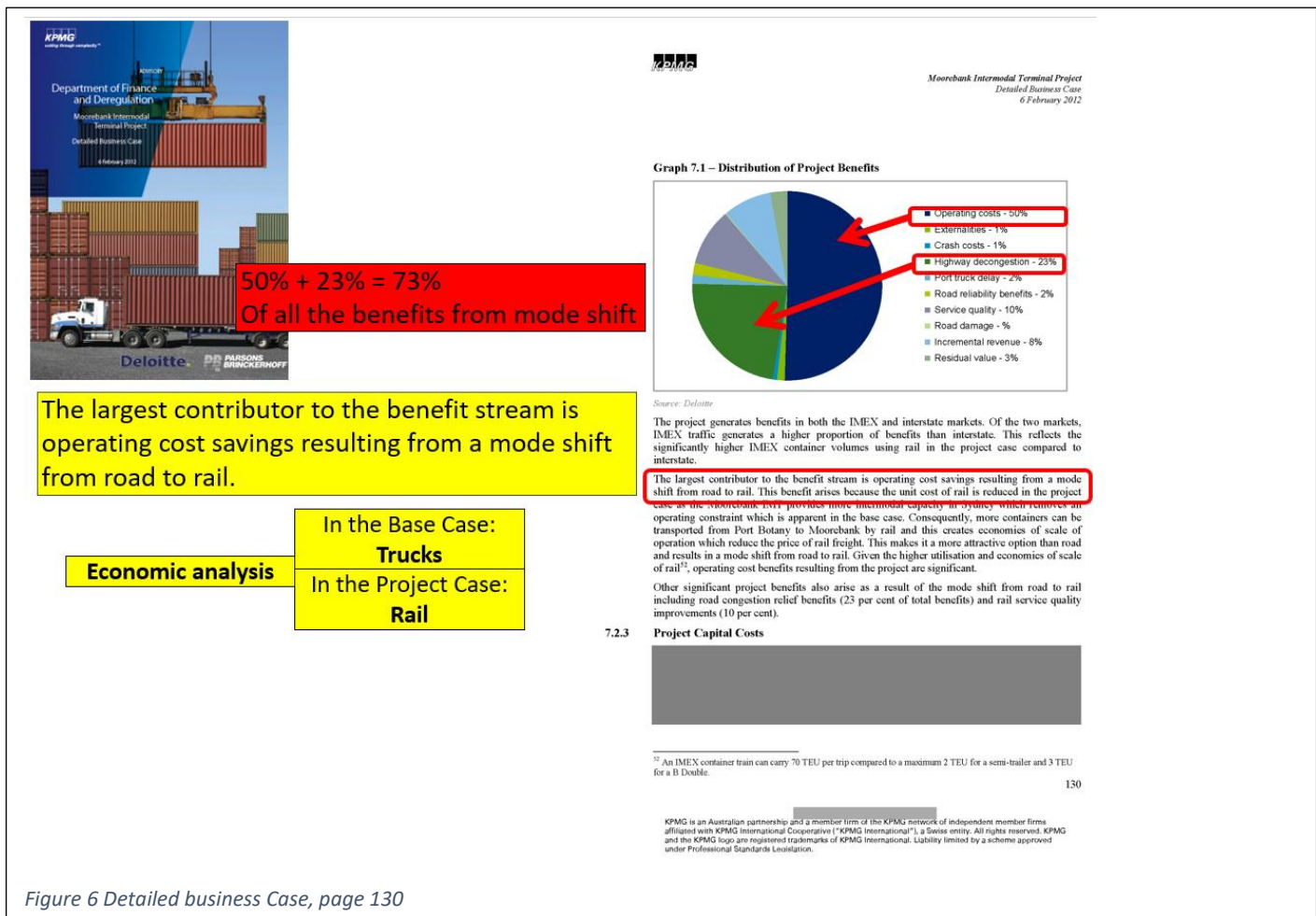


Figure 6 Detailed business Case, page 130

The analysis shows that almost three quarters of all the economic benefits are obtained from shifting the 3,300 trucks off the M5 between Port Botany and Moorebank, onto rail.

This economic benefit analysis is fanciful. Figure 4 shows that there are no 3,300 truck movements on the M5 between Port Botany and Moorebank.

Background - typical intermodal operation

A typical intermodal terminal work as follows:

- containers arrive on site (delivered either by train or truck),
- some containers are transhipped to other warehouses, but
 - most of the containers are "destuffed" (unpacked), and
- Smaller trucks come in and carry the items to other places, and
- empty container is returned to the Port.

From this short description, one can envisage the "big trucks" carrying (full or empty) containers, and "small trucks + utes and vans" to come and go as they pick up items.

In short: intermodal terminals have a great number of truck movements.

Moorebank Intermodal Terminal

Moorebank is planned have about 65% of the current Port Botany freight movements.

Here is the big catch: the consultants working for the Federal Government made the false assumption that the Moorebank Intermodal Terminal was already fully functional – with 3,300 trucks carrying the freight from Port Botany into the site, and trucks transshipping containers to other depots, and small trucks servicing the warehousing.

One of the EIS documents contained the words ***“there will be local improvements, because the 3,300 trucks from Port Botany will not be travelling on Moorebank Avenue”***.

Based on this assumption, the Federal Government consultants, stated the only cost required is the Georges River rail crossing. There would be no additional infrastructure costs required, apart from upgrading Moorebank Avenue in 2029/30.

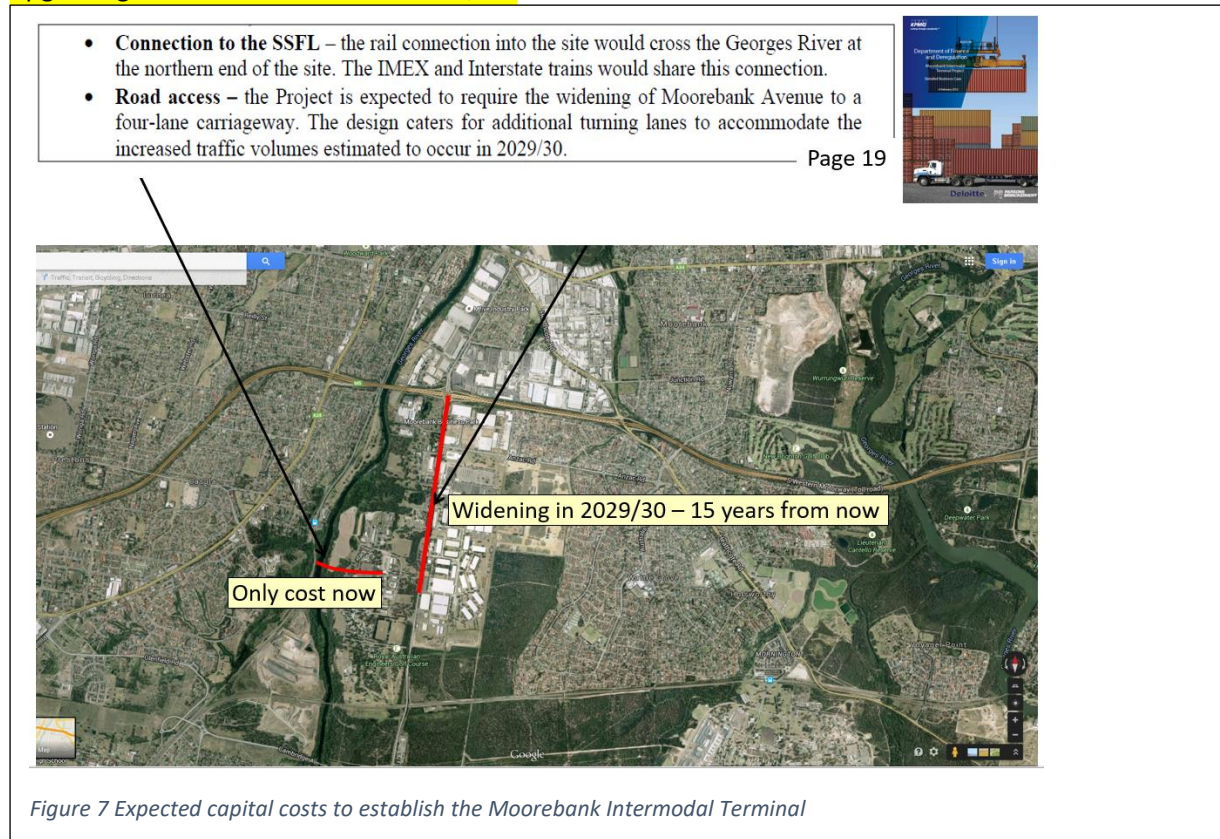


Figure 7 Expected capital costs to establish the Moorebank Intermodal Terminal

A simple site visit would have proven that those assumptions were fanciful.

Now, the proponents require that Moorebank Av needs to be upgraded – now – not in 15 years from now. See Appendix B – our submission to the NSW Government regarding Moorebank Av, for the latest round of traffic issues.

Politics

There is a strong suspicion in the community that the economics of Moorebank Intermodal Terminal is based on politics rather than on science.

In the NSW Freight and Ports Strategy, the NSW Government states the main bridge over the Georges River will reach capacity as early as 2016 (and other traffic issues – see in Figure 8). The ex-Premier (Barry O’Farrell) being quoted in the local newspapers with the words along the lines: “if the Feds want it, they can pay for it”.

This page comes from the NSW Freight and Ports Strategy, November 2013

CASE STUDY 16 SUPPORTING THE DEVELOPMENT OF THE MOOREBANK INTERMODAL PRECINCT

The Moorebank precinct has been identified by the Australian and NSW Governments as a key strategic location to increase intermodal capacity. Two intermodal terminals are planned in the precinct; the Moorebank Intermodal Terminal (MIT) has been proposed by the Australian Government for the western side of the precinct, and a privately funded Sydney Intermodal Terminal Alliance (SIMTA) has been proposed for the eastern side. Once complete, these two IMTs are expected to result in up to two million TEU of intermodal terminal capacity.

Transport for NSW expects the development of these two intermodal terminals in the Moorebank precinct to place significant strain on the surrounding local road network. While not all effects of terminal developments have been identified at this time, initial analysis suggests the following impacts to the local road network:

- Travel demand on the section of the M5 Motorway between the Hume Highway at Casula and Moorebank Ave is expected to exceed capacity as early as 2016.
- The absence of west facing ramps from the M5 to the Hume Highway results in a significant number of vehicles using Moorebank Avenue to access the Liverpool CBD.
- By 2026 growth in background traffic will result in peak spreading and traffic conditions similar to the existing peak period in the Liverpool area and on the M5, persisting for most of the day.
- Key intersections providing access to the Moorebank intermodal precinct will exceed capacity with volumes, especially of turning vehicles, resulting in extensive delays, with queuing sufficient to disrupt through movement.

To support the development of the Moorebank intermodal terminals and meet the challenges posed by impact on the local road network, Transport for NSW is seeking to provide road network upgrades. The specific goals of these upgrades include:

- Providing additional capacity and traffic reliability on key routes accessing the precinct.
- Ensuring full access to the precinct for High Productivity Vehicles (HPV), including Higher Mass Limit (HML) vehicles.
- Managing the needs of the precinct in terms of road access while addressing negative externalities for the surrounding community and environment.

Transport for NSW has made a Nation Building 2 submission to undertake modelling and economic analysis to determine the optimal road upgrade package to meet the needs of the developed Moorebank intermodal terminal precinct.



Figure 8 NSW Freights and Ports Strategy, Nov 2013, page 122

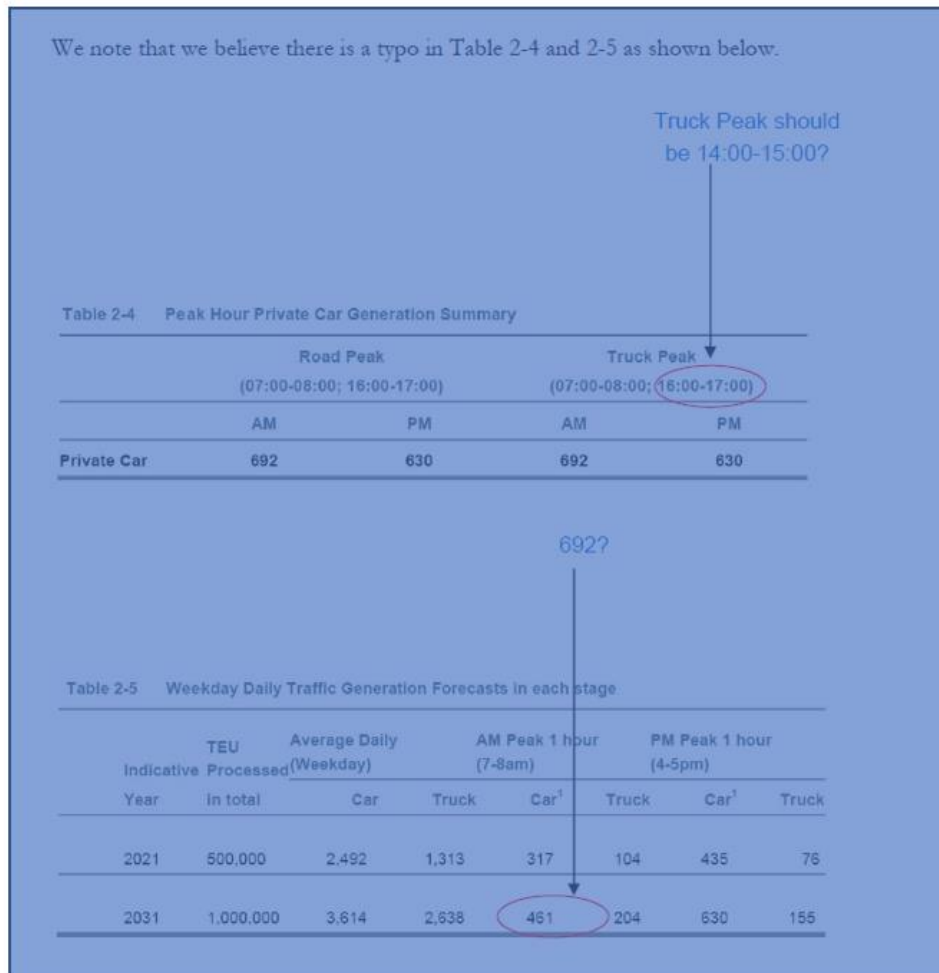
Even the proponents noted the traffic issues, and tried to hide their concerns. However, their traffic modellers were blunt about revealing the traffic issues, with the statement:

“There is no mentioning of background traffic growth”.

When modelling new infrastructure (likely to be in place for 50 or more years), it is common to make some assumptions about future background traffic growth. Leaving it out altogether raises many questions – and the auditors, who knew this part of the Sydney network well, gave a possible suggestion “... *is it due to existing capacity constraints under normal road conditions?*”.

- There is no mentioning of background traffic growth.

➤ *It is unclear whether this is due to existing capacity constraints under current road conditions?*



Doc: JCATBER03_V02
Draft, 29 July 2011

14

Figure 9 SIMTA's own traffic auditor's report

In this traffic auditor's document, the auditors are quite brutal in their assessment of the traffic modelling done by the SIMTA modellers. From their earlier work for the RMS, these auditors knew this part of Sydney's network well: it is severely capacity constraint.

For further information on traffic and other issues, we like to refer you to our two books:

'Moorebank Intermodals Key Assumptions Require Closer Scrutiny'

http://lcit.com.au/wp-content/uploads/2013/06/Intermodals_Book_Web_V19.pdf

Moorebank Intermodal, Better Options

www.transportmodelling.com.au/Intermodal/MoorebankIntermodal_BetterOptions.pdf

For traffic issues, please refer to Pages 11 and 12 in our second book: Moorebank Intermodal, Better Options. It contains the list of 34 road network improvements as documented in various sources (referenced).

We are not costings engineers however, I often quote the cost of the roundabout built near where I live. The T intersection was changed to a roundabout. It needed some bitumen, some concrete (for the roundabout itself and the curb-and-guttering) plus and some grass. Liverpool Council has signs to inform the public that this upgrade cost \$3 million of rate-payers money.

Now imagine the cost of 34 network improvements!

As an example, RMS has costed \$500 million for the access to the M5 – see item 6 in our list. This access to the M5 is only one of the 34 items – it is not even the most expensive item on the list.

See item 7 in our list: the NSW Government has stated that the Bridge would have reached capacity in 2016. After seven years of agitation, Infrastructure Australia has finally acknowledged that item 7, the merging and weaving on the M5 Bridge over the Georges River is a problem – and the solution is still being investigated.

Summary so far:

- Technical people have acknowledged that the Moorebank Intermodal Terminal will need a vast amount of transport investment.
 - We have many PowerPoints showing the many issues with the Moorebank Intermodal Terminal. In summary: based on traffic, Moorebank Intermodal Terminal is not going to work.
- In the meantime, the NSW publicity machine continues to produce advertising material about
 - taking 3,000 trucks off the road (the words “M5 between Port Botany and Moorebank” have now fallen off, and also, the SIMTA’s figure for 2,700 truck movements, and the Federal Government’s figure of 3,300 truck movements, has been averaged to 3,000 truck movements)
 - Moorebank is ideally situated near the M5 M7 and Hume Highway (and many people have pointed out that the NSW Government has “forgotten” to mention the traffic congestion described in its own NSW Ports and Freight Strategy – See Figure 8)
 - Moorebank has compatible surrounding land use (when the intermodal was planned about 45 years ago, a green belt was kept and it was incorporated as part of the Army land. When the plan of the intermodal changed to a technology park, the green belt was sold off and developed into what is now known as the Wattle Grove suburb. The planning of the Technology Park plan has reverted back to an intermodal, and the result is that the Intermodal’s 24/7 operation is now a mere stone throw from the residential area. See our submission in Appendix B).

Newcastle – existing freight

Mr Craig Kelly MP, asked us to show him where the Port Botany containers are going to -see our second book (see Page 6 of our second book). We produced Figure 10 – while it is now old, it is still indicative.

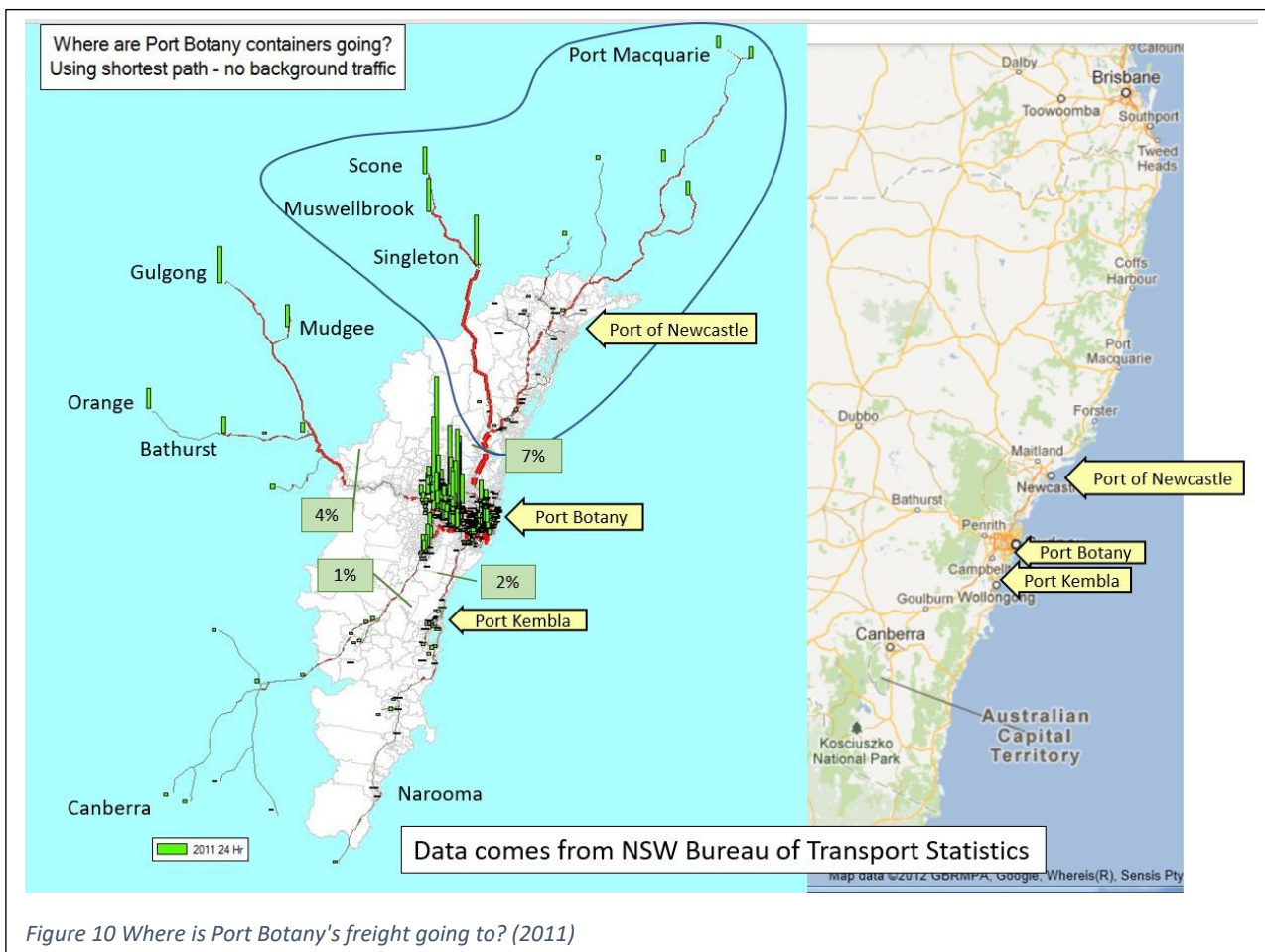


Figure 10 Where is Port Botany's freight going to? (2011)

Using the NSW Government freight data, which at that time was publicly available, in 2011 about 7% of Port Botany's freight crossed the Hawksbury River. (Many planners use that natural boundary for planning purposes).

If this freight was relocated to Port Newcastle, then the 7% would come from Newcastle, rather than Port Botany. Further, Figure 11 shows that the destinations of that freight (the height of the bars represents the freight volume).

A representative catchment area has been drawn on this image. This shows that many destinations are long-distance which are ideally suited to rail transport.

Newcastle – future freight

Figure 11 shows the expected growth in future freight traffic. However, this data is old.

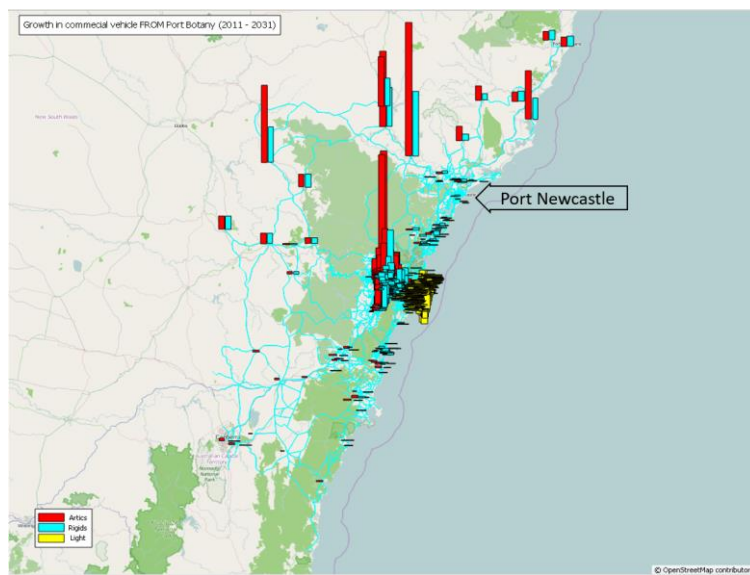


Figure 11 Growth in freight between 2011 and 2031 (old data - NSW TDC)

This shows that according to this old data set, the “secondary growth” area is near Singleton and Muswellbrook.

We emphasize, that this data set is old.

We have agitated the NSW Government for proper planning in for the Western Growth Centres. Hopefully, this is now reflected in the freight data – which we do not have access to.

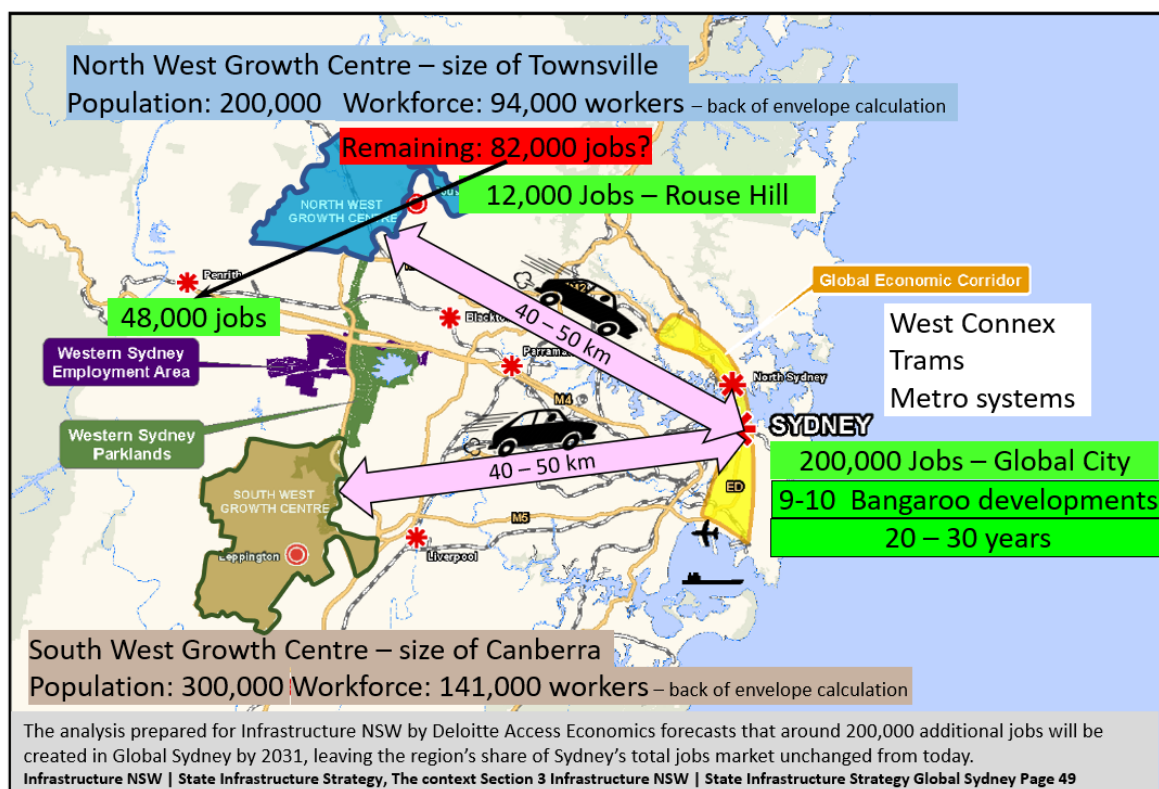
Where from here?

Recommendation: Face facts – rather than fanciful ideas

Infrastructure NSW, First things first 2012-2032 (see Figure 1) was received with great fanfare in the NSW Government, because it gave them direction.

We spent a great deal of energy agitating the NSW Government into taking the development of Western Sydney more seriously. See Figure 12 below.

Figure 3 Map of Sydney's network of existing and new centres



Source: Current NSW Metropolitan Plan.

Figure 12 Until very recently, this was the NSW Government Blue Print for urban development

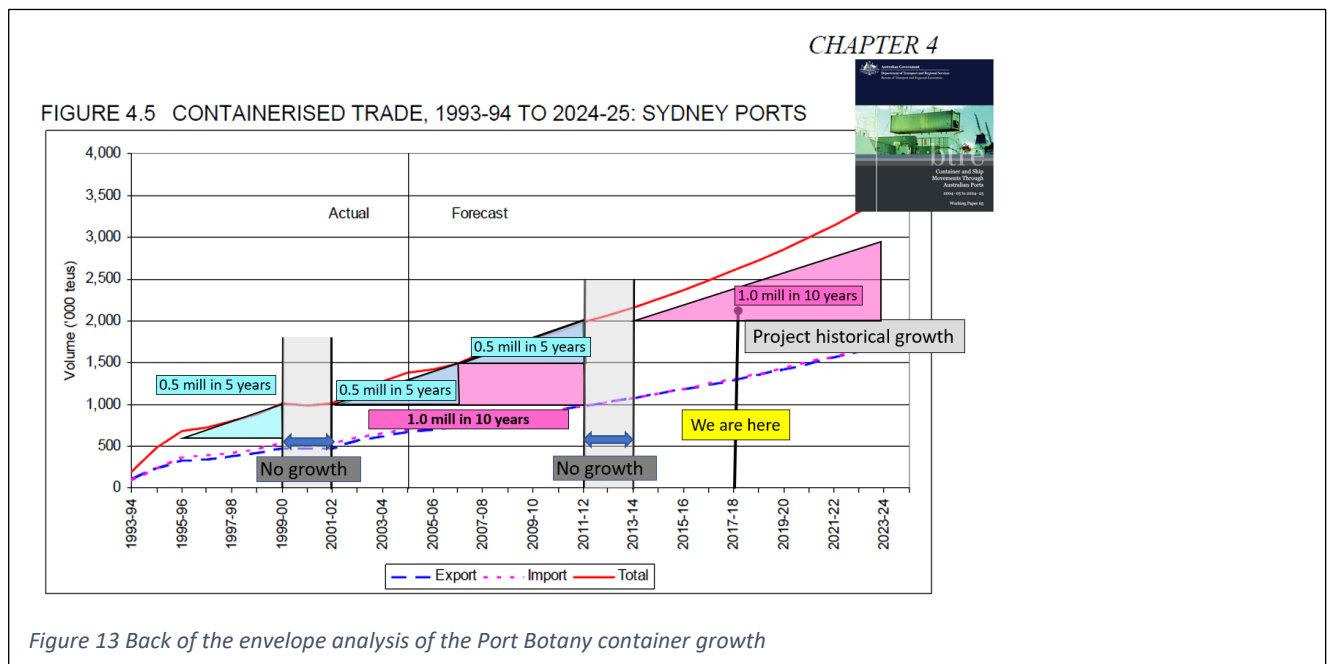
This idea of placing workers 40-50 km from their work place goes against all planning principle taught at every university on this planet. The Universities are finding ways and teaching students how to reduce the distances travelled.

It is a shocking, callous and self-serving proposal from the authors, who have/had links to toll roads, to make this a Government Policy.

Our agitation was successful, and now The Western Growth Areas will become a City, about twice the size of Brisbane.

Recommendation: Examine spreadsheets, not publicity

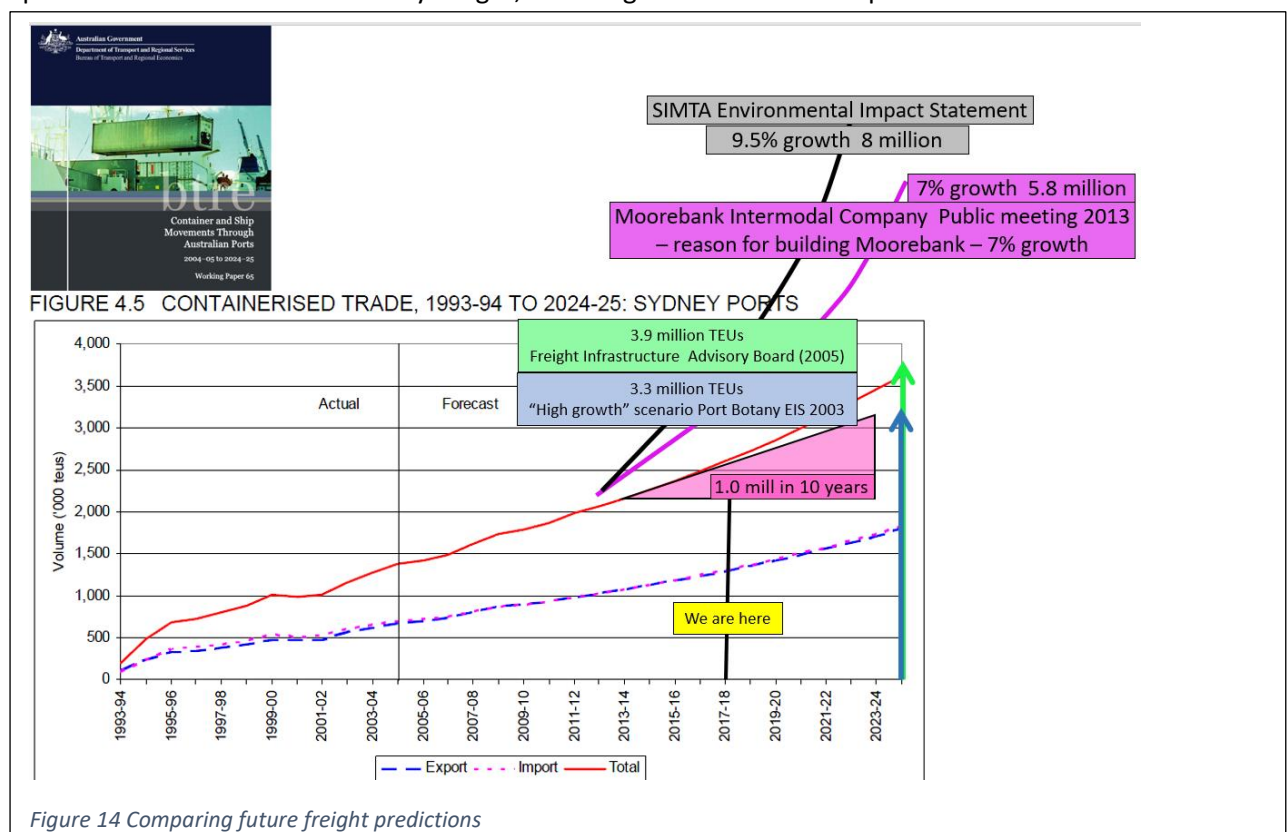
Figure 13 shows a quick back-of-the-envelope analysis of the historical container growth. This work is now a little old, but the trends remain unchanged.



Notes:

- the two periods of “no growth”
- the 5-year growth spurts
- The 1.0 mil TEU growth in 10 years

We were to use this simple back-of-the-envelope figure for forecasting. Figure 14 compares various “predictions” of future Port Botany freight, including the back-of-envelope.



- The “1.0 million TEU in 10 years” compares well with the “High Growth” scenario for the Port Botany EIS 2013. (Blue arrow)
- The Freight Infrastructure Advisory Board 2005, (green arrow) is a little higher than the Australian Government prediction.
- The public was told that the reason for building Moorebank Intermodal was that Port Botany was growing at a rate of 7% (MICL).
- The SIMTA EIS took the growth figures from Sydney Ports at 9.5%

The last two predictions are literally “off the chart”.

Recommendation: Be weary of panic merchants

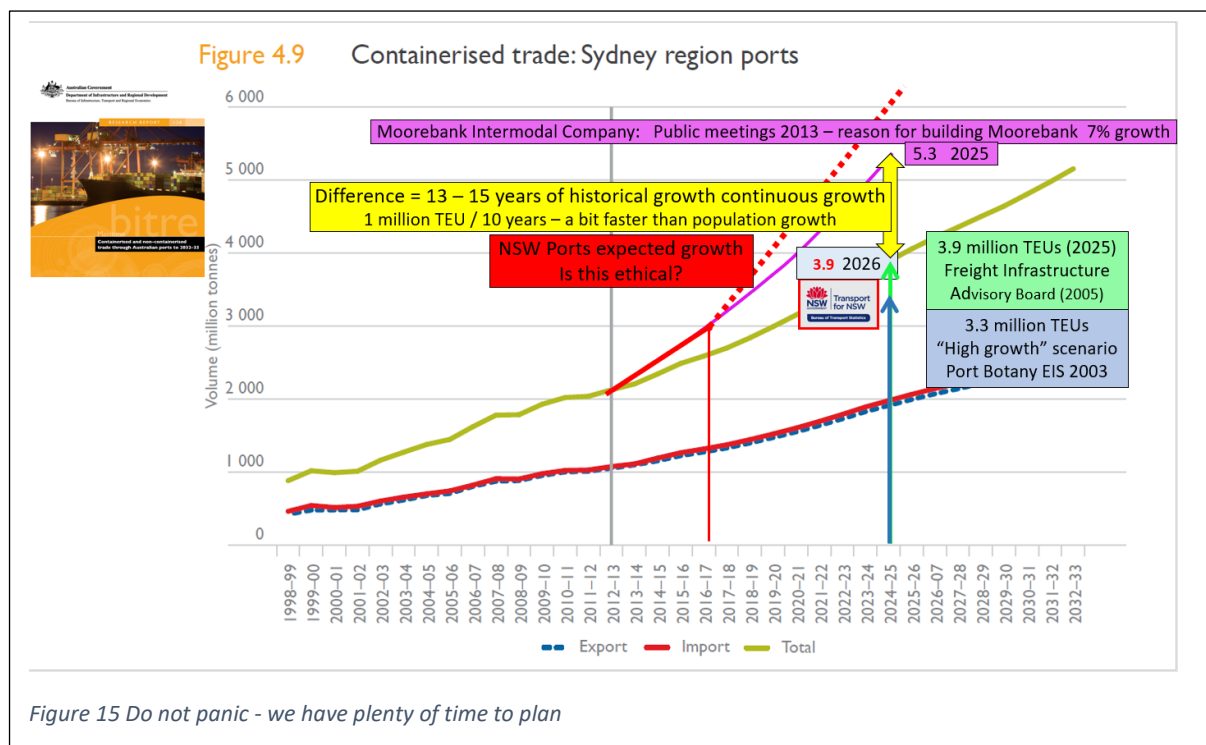
It is a long story, but after the public meeting, Mr Ian Hunt CEO, MICL + entourage, came to our home where I showed them a broader view of the Moorebank Intermodal Terminal.

On the surface, the technical people appeared to do a decent task. However, if we were to delve into it more deeply, see can observe the counter intuitive results. (See Figure 8). All that technical information was hidden deep in the EIS documents.

I also pointed out the “panic” situation of 7% growth and 9.5% growth.

Based on the back-of-the-envelope calculation, the actual expected freight volumes will not appear for another 13-to-15 years + additional “no-growth” periods.

That gives us a good time frame to plan things properly.



Recommendation: Face facts – existing economic climate and immigration policies

It is unlikely that in the existing climate the growth in freight will be 9.5%, or even 7% growth - despite Sydney Ports publicity, or even the NSW Government’ publicity.

History has shown that there are periods with no growth. That may happen again.

Final recommendation: Let us do proper planning

The NSW Government and Federal Governments are building a City **twice the size of Brisbane** in Sydney's West.

Return to focus on "future freight" in the simplest sense, and work backwards:

- The NSW Government together with the Federal Government are building a city, twice the size of Brisbane, in Western Sydney.
 - It can be safely assumed that the new City will need freight – its freight quantity would be approximately twice the size of Brisbane.
- Again, for simplicity, assume that all (*in reality most of*) the freight growth will be required for this new City.

Now that the future freight destination is established, we can pose the obvious question: "what is the best mode of transport for freight to this new City?".

Is the NSW Government (and Federal Government) approach still the most appropriate? That is, freight is

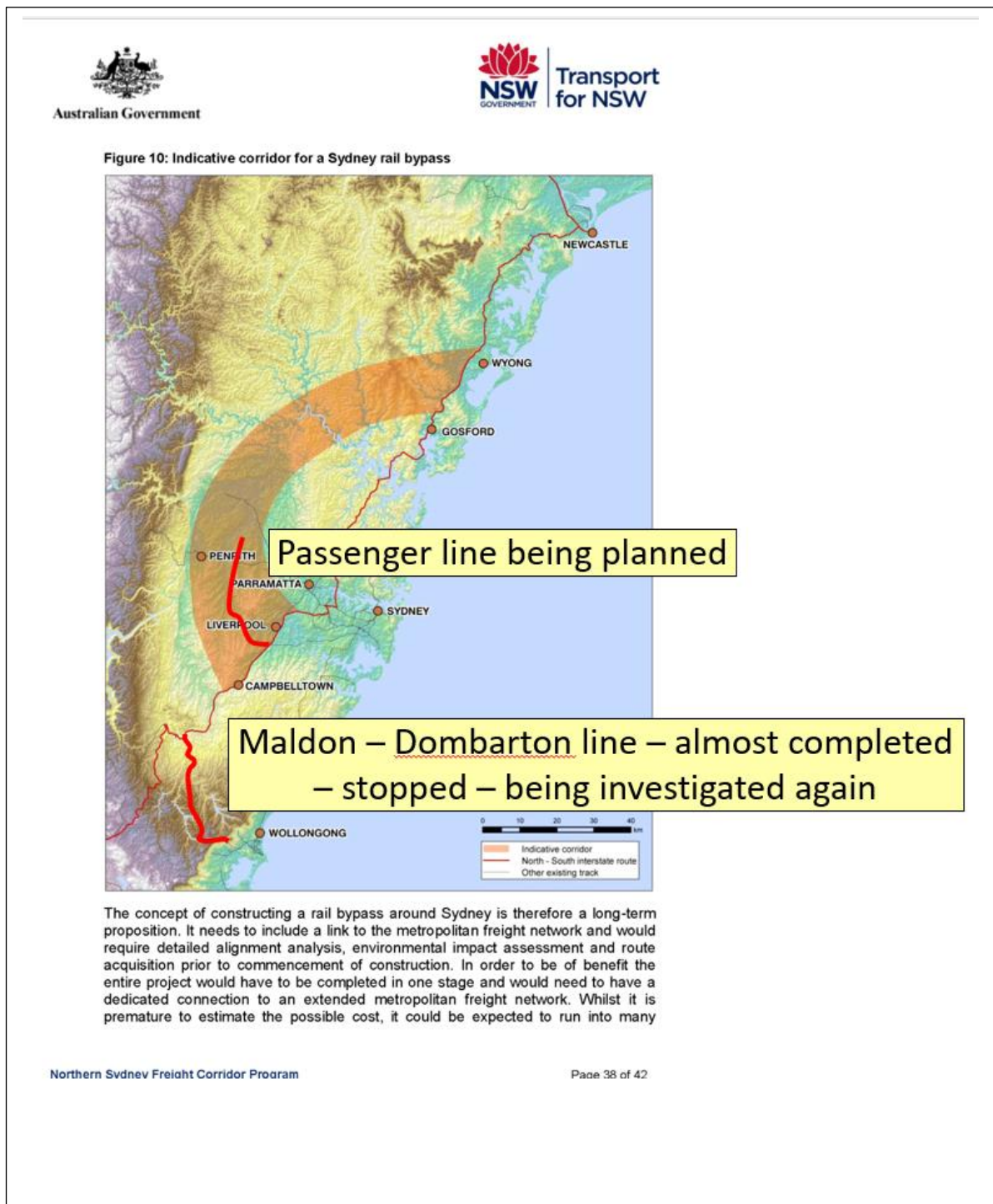
- railed to Enfield, and then trucked from there, and
- railed to Moorebank and then trucked from there

The exiting work above shows that this policy is half-baked.

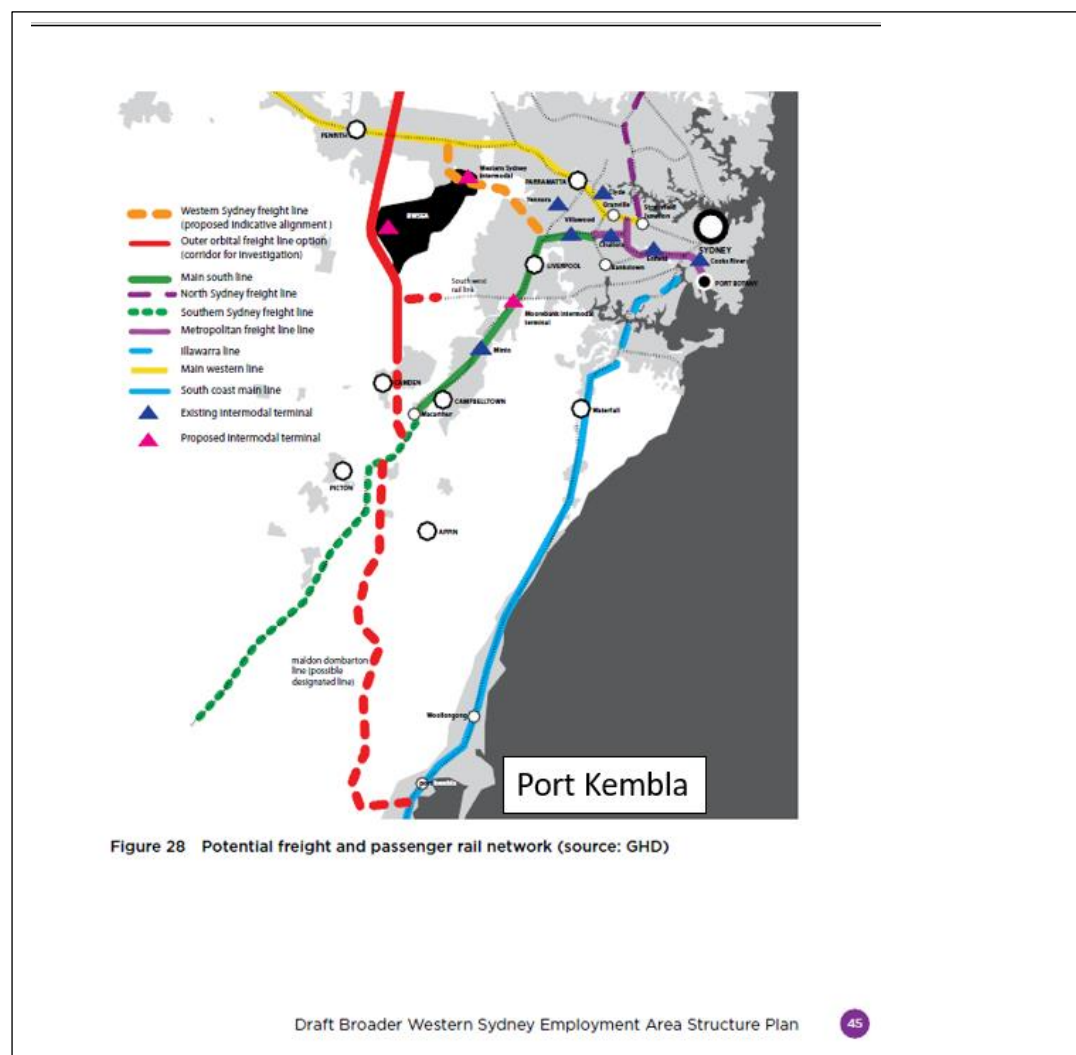
This is where we need a wider-vision of what is required.

Both "land-use planning" and "transport planning" are intricately related, and therefore requires a "whole of government + community" involvement, because it covers every aspect from the environment to issues relating to how, where and when the tax-payer's money is going to be spent.

The alternatives are shown in this image.



Greater detail of the freight line from Port Kembla as shown in this image.



I made a trip to the Port of Newcastle people, in Newcastle, to give a Presentation on why Moorebank will not work, and left them with a strong message: “just do not get caught with traffic issues like Enfield and Moorebank”.

My experience is that just as we have day-dreamers who think all the transport issues can be solved by using public transport, we have day-dreamers who think that all freight can be carried by rail.

Kind regards

Narelle and Paul van den Bos

Appendix A – Port Botany EIS + flaws in the modelling

Port Botany – cap of 3,000,000 TEU

The 3,000,000 TEU cap was calculated by traffic and transportation engineers, based on the existing infrastructure capacity.

See: <https://www.nswports.com.au/assets/Uploads/Port-Botany-Expansion-EIS-Appendix-C-and-D.pdf>

See

- Chapter 4. Trade Forecasts – Unconstrained - (around 3,000,000 TEU by 2024-25)
- Chapter 5. Container Port Capacity Analysis – (5,004,000 TEU under “High Productivity” + proposed development scenario)
 - Observe Figure 5.11 Scenario C – capacity with high productivity improvements (High growth = around 2,800,000 TUE in 2024-25)
- Section 6.3 Land Transport Network and 6.4 Transport Costs and Assumptions

The foundation of these calculation is described in section 6.4.1: quoted below:

“For both road and rail, unit costs have been determined in this study in terms of a kilometre and a time component for the years 2002 and 2010. The travel time and travel distance between each inland zone and alternative port were developed using time and distance ‘skims’ from Maunsell’s Sydney Travel Model. This model also estimates these parameters for future years – in this case 2010 - thus including the effects of the Western City Orbital and enabling the costs of increasing congestion on the road network to be modelled and costed. The “skims” covered peak hour morning travel to and from the port. In our calculation of travel costs, we have taken the average of the time and distance journeys in and out of the port. Due to the complexity in analysing rail capacity, as it is inherently a managed system, a constant cost into the future was applied (all costs are measured in 2001/02 dollars).”

The Mausell’s Sydney Travel Model (Paul has worked with it, although not on this study) is designed to determine future network issues. It is not designed for economic analysis.

In traffic engineering, Fundamental diagrams, used to illustrate complex principles. Fundamental Diagrams have the same status and “rules” in mathematics, and “laws” in physics.

The traffic flow is plotted on the X-axis, and the average speed of the traffic flow is plotted on the Y-axis.

- In the “uncongested” region, traffic flows “close to the sign-posted” speed (green curve)
- In the “congested” region, traffic travels much slower than the speed limit (red curve)
 - In reality, if more and more traffic is added, the speed reduces (because cars are too close together), and the traffic volume decreases

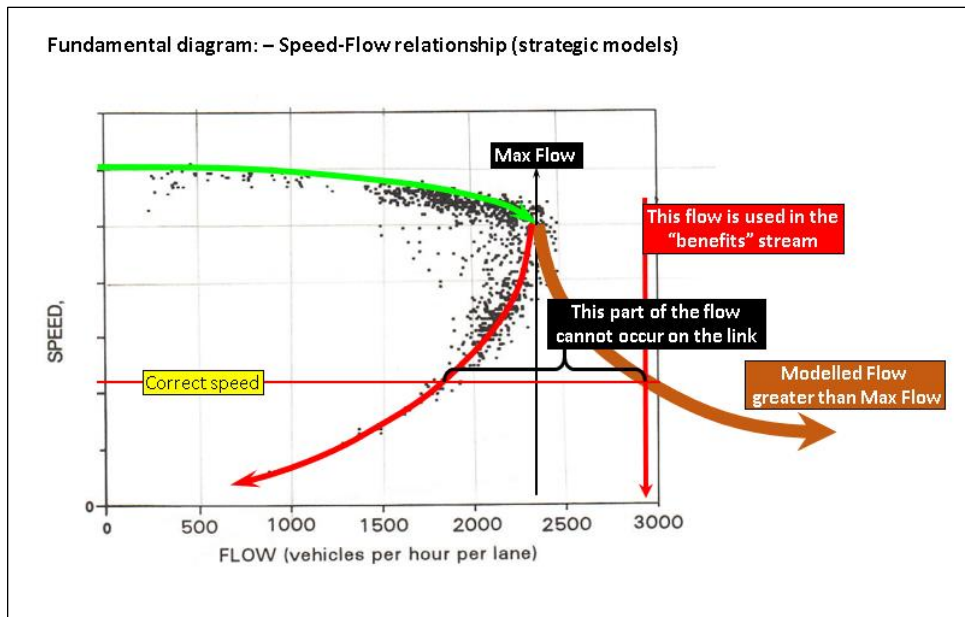
In strategic modelling, which is designed to pinpoint the future network issues, has to overcome this constraint. In all strategic models, the brown curve is used in strategic modelling – with the capacity overwritten.

Therefore, interpreting results from strategic modelling requires careful analyses.

- If the results are all on the green line, that is, traffic flows freely and close to the speed limit, then the results can be used without any issues.
- If, however, the “modelled volume is greater than network capacity” (requires a special calculation) then extreme caution need to be taken in interpreting the strategic values.

- The network capacity is given by the red curve
- The modelled flow is given by the brown curve
- The difference between the capacity and modelled flow cannot occur on the link.
Therefore, this traffic needs to be re-distributed on the parallel paths. Chances are, that those parallel paths are also congested.

In these cases, it makes sense to use models that reflect the “red” curve. In these (mesoscopic) models, vehicles occupy road space, and driver behaviour is reflected. If a network becomes congested, queues form. If even more traffic is added, queues become so long, that traffic speed reduces as shown in the diagram.



Appendix B — our submission to the NSW Government regarding Moorebank Av

Dear Sir/Madam

We are writing in response to the Planning Agreement between the RMS and QUBE regarding the Moorebank Avenue re-alignment.

First, we have deep concerns about the operation of the Moorebank Intermodal. Our own modelling shows that this is not going to work. We are not alone with this concern. This fact that it is not going to work, is fully documented in their own EIS traffic reports.

Amenity

One of the concerns about the Moorebank Avenue re-alignment relates to basic amenity principles. After years of publicity from both the NSW Government agencies and proponents, about noise abatement programs, this realignment puts all the noise in people's back yard.

This, is in stark contrast to the NSW Government image of projecting its grand world class urban and city planning approach. This re-alignment looks more like a dictatorial action found in third world country. "People in the west, do not drive cars, and they do not matter. It is profits first".

Moorebank Avenue traffic

Another issue is traffic flow on Moorebank Avenue.

Roads/ Locations	AADT – all vehicles						
	2002 ⁽¹⁾	2005 ⁽¹⁾	2009 ⁽¹⁾	2012 ⁽²⁾	2010 ⁽³⁾	2014 ⁽⁴⁾	2015 ⁽⁵⁾
M5 Motorway, at bridge over Georges River	91,849	98,194	113,759	119,800	128,500	n.a	n.a
Moorebank Avenue, north of Cambridge Avenue	14,348	15,903	14,098	n.a	16,500	16,460	16,760
Moorebank Avenue, south of Anzac Road	n.a	n.a	n.a	n.a	17,500	16,900	17,200
Anzac Road, east of Moorebank Avenue	n.a	n.a	n.a	n.a	9,500	10,230	10,410

Note: n.a= Data is not available.
Source: RMS count data, 2010 and 2014 traffic survey data
(1) AADT obtained from RMS.
(2) AADT obtained from RMS <http://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/map/index.html>. The M5 West Widening project commenced in August 2012.
(3) ADT obtained from 2010/10 traffic survey for MPE Concept Approval.
(4) 2014 ADT obtained from 2014 November traffic survey for MPE Stage 1 Proposal traffic assessment.
(5) 2015 ADT traffic volumes have been estimated from 2014 actual ADT traffic counts and traffic count data sourced from the Roads and Maritime's wider Liverpool Moorebank Arterial Road Investigations (LMARI) traffic model.

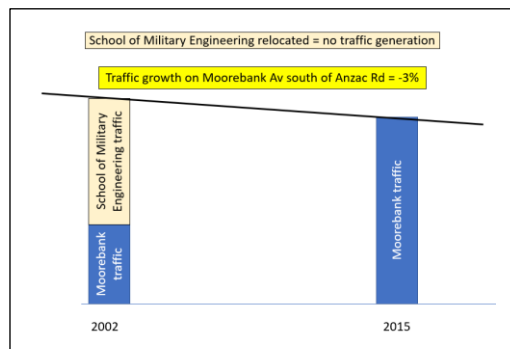
Roads/Locations	Annual Average Growth Rate (%)		
	Between 2002-2009	Between 2002-2010	Between 2010-2015
M5 Motorway, at bridge over Georges River	n.a	▲4.3%	n.a
Moorebank Avenue, north of Cambridge Avenue	▼0.3%	n.a	▲0.3%
Moorebank Avenue, south of Anzac Road	n.a	n.a	▼0.3%
Anzac Road, east of Moorebank Avenue	n.a	n.a	▲1.8%
Average for all roads (last 13 years)	▲1.3%		

Note: n.a= Data is not available.

31

The proponents state that the growth on Moorebank Av is -3%. See Table 2-3 Historical Traffic Growth between 2002 and 2015.

During this time the Military School of Engineering was relocated.



Only the most inexperienced traffic engineer could calculate a -3% growth in traffic.

Moorebank Avenue traffic issues

The proponents have modelled Moorebank Avenue – both with and without the Moorebank Intermodal, for the existing and future years.

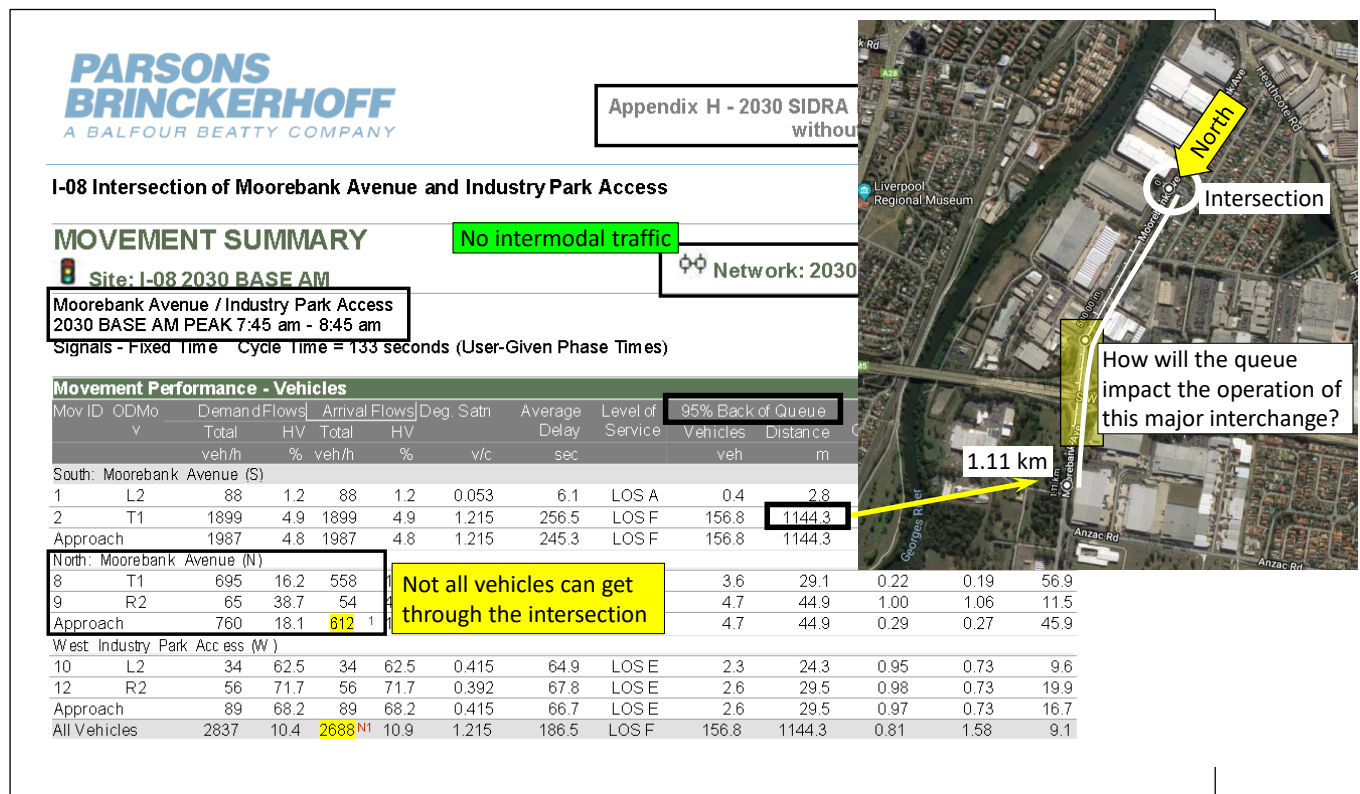
The software is designed to model all the intersections as a “network”, in which queues impact other intersections. However, for the EIS, the proponents modelled each intersection as an isolated intersection. This raises obvious question relating to the modellers inexperience, or deliberate approach.

Examining the outputs as provided by the proponents: - this image comes from the proponents EIS.

I-08 Intersection of Moorebank Avenue and Industrial Park Access

For the 2030 AM – no Intermodal traffic – the queue from the Moorebank Avenue and Industrial Park Access extends 1.11 km, that is, right across the Moorebank Av / M5 interchange.

For purpose of visualisation, this queue has been plotted on a Google Map image.



The things to note are:

- The Proponent's modelling shows that not all the traffic could get through this intersection
 - See the row with yellow numbers: 760 vehicles want to get through this intersection (Demand column), but the software only allowed 612 vehicles through the intersection (Arrival Flows column).
 - Intuitively, if those "missing" vehicles were to be forced through the intersection, the results would be different.
- Recently, the local press carried articles declaring the great benefits to our community because Amazon will locate its warehousing in Church St, which is just south of this intersection.
 - Once can assume that the Amazon warehousing will generate additional traffic, and therefore, impact this queue length
- With the queue extending across the Moorebank Av / M5 interchange, any person who drives a car, would assume that such a queue would impact the operation of that interchange.
 - Since the proponents modelled that interchange as an isolated intersection, it expects that this intersection will function better that it currently does.

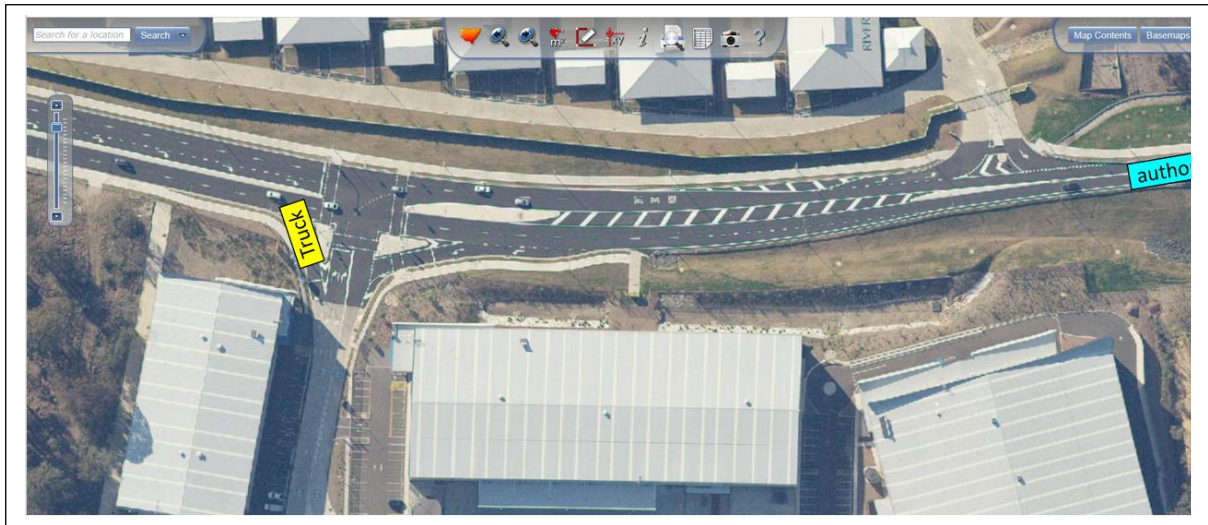
However, intuitively, if the queue from the Moorebank Av / Industrial Park Access is as long as 1.1 km, and the Amazon traffic is added, the operation of the Moorebank Av / M5 Interchange would be impacted, and the queue may extend well past the Anzac Rd.

Observation of Warehousing operation

Recently, the warehousing along Governor Macquarie Dr were opened, and there is still little traffic from the warehousing.

The access from the warehousing onto Governor Macquarie Dr is a signalised right-hand turn, and a slip-lane for the left-hand turn.

It was well after the AM peak hour, when I drove over the bridge (see blue box - author), as I observed a truck wanting to make that left turn (yellow box - truck).



While the roadway was not busy, because there are two lanes in front of the access point, and traffic had distributed itself over the two lanes, it was clear that the truck driver had waited long enough, and forced the truck into the traffic stream.

I could see the brake-lights go on of the cars in the curb side lane, with the lead car wanting to sneak into the second lane – but had to abandon that movement – with some brake-lights turning red.

Having spent my early years working as a Research Engineer in the NSW Traffic Accident Research Unit in Rosebery, I could see that there is scope for additional safety measures.

This location may be a good spot to experiment with possible safety measures. It is noted that for the warehousing along Moorebank Avenue, the traffic conditions will vastly different:

- Any intelligent person will understand that the traffic on Moorebank Avenue background traffic will not grow at -3% per annum – despite what the Proponents have calculated
- The Moorebank warehousing will generate traffic that is significantly higher than the proponents estimate

6.5 Truck traffic generation - what the response to submissions should provide

TfNSW considers that the estimated truck traffic generated from the SIMTA proposal (approximately 2,600 daily truck movements) appears low. TfNSW considers it more likely that an intermodal terminal with 1 million TEU from Port Botany and a 1.0 million TEU rail operation from Inter State will generate approximately 20,700 daily truck movements. This is 10 times more than the truck generation estimated for the SIMTA proposal.

In addition, Point 2 of the RMS letter dated 7 November 2011 (copy attached) requested sensitivity testing for truck movements associated with empty containers. The proponents consulted (Hyder) has previously advised that this sensitivity testing will be provided. To date, RMS has not received this information.

It is noted that total inbound and outbound trips to the site during AM peak hours (7-9 am) is 1496 trips and the report estimates that these trips will be evenly distributed throughout the two hour AM peak. However, the report states that the shift will commence at 8 am and therefore, it is likely that the majority of the total trips to the AM peak (7-9 am) will occur between 7-8am. The assumptions and the percentage of employee trips in different time periods in Appendix B should be clarified.

6.6 Deterioration of key intersection performance outside the core area as a result of SIMTA proposal

Appendix C – Future Road Network Capacity of the TAA states “the results show that outside the core area, there is no significant adverse impact on key roads following the introduction of the SIMTA proposal”. However, the output data from the traffic models illustrates that the SIMTA proposal will have a direct impact on the performance of a number of existing intersections outside of the core area as follows:

- The delay at the interchange of M5 Motorway with Heathcote Road is predicted to increase in 2031 AM peak from 69 to 90 sec/veh (+42%) and in 2031 PM from 106 to 131 sec/veh (+21%).
- The delay of Heathcote Road/Nunawarra Road intersection is going to increase in 2031 AM from 94 to 120 sec/veh (+29%) and in 2031 PM from 79 to 108 sec/veh (+42%).
- The delay of Newbridge Road/Nunawarra Road intersection will increase in 2031 AM from 50 to 75 sec/veh (+50%) and in 2031 PM by 13%.
- The 2031 AM delay of Hume Highway/Os Meyrick Avenue intersection is expected to increase from 177 to 220 sec/veh (+24%).
- The 2031 AM delay of Hume Highway/Kurajong Road intersection is going to increase from 239 to 294 sec/veh (+23%).

What the response to submissions should provide

The response to submissions should comprehensively address all the above issues.

Response from TfNSW to first EIS

In addition, given that the proponents have estimated that the traffic queue from **Moorebank Avenue and Industrial Park Access** will extend past the Moorebank Av/M5 interchange, the re-alignment will need to consider the more realistic, expected, traffic conditions.

The one factor that will be common, is that the driver behaviour will be the same: – after all, most drivers are paid to deliver goods “on-time”. Drivers may force their trucks into the traffic stream. The consequences may not always be, as what was witnessed on General Macquarie Drive.

Conclusion

Before the NSW Government decides to spend so much of taxpayers’ money, we hope that as intelligent decision makers, it is fruitful to consider the science and consequences of this decision.

We are happy to supply more detailed facts.

Kind regards

Paul and Narelle van den Bos