# Dogs breakfast for all

This article arose from two reported comments from the NSW Government:

* The Premier claiming new technology could increase the capacity of Sydney Trains’ system;
* The Minister for Transport giving the Western line being ‘overwhelmed’ as reason for rejecting $3bn funding offer.

On hearing these the jade beagle required its so-called master to review recent statements about NSW rail policy.

The jade beagle invites corrections and clarifications - provided they are on the public record.

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**An inquiry with judicial powers is needed to investigate the dogs breakfast of rail policy in Sydney.**

## 

## 1. Introduction

Readers know the author’s scepticism about the NSW Government’s Sydney Metro theology.

However, given the scarcity of facts – we are only fed propaganda – there needs to be a public inquiry the outcome of which could perhaps make me a believer.[[1]](#endnote-1)

One concern is Metro has fewer seats per line than the existing Sydney Trains system. This is a problem for or anybody on a train for more than 20 minutes – who generally want seats.

Another concern is Metro reduces the capacity and jeopardises the future of Sydney Trains. It is taking over key parts of that system – like Epping-Chatswood and the Bankstown line.[[2]](#endnote-2)

It is possibly also preventing Sydney Trains expansion by e.g. taking alignments in the CBD necessary for proper services in Western Sydney.[[3]](#endnote-3)

These concerns mean Metro threatens to divide Sydney – it will become very difficult to travel other than short distances.

Contrary to the spin of the NSW Government’s Greater Sydney Commission - that Metro is a part of a ‘three cities’ plan providing jobs in the west - it needlessly reduces the ability of people in Western Sydney to access opportunities elsewhere, is unlikely to add a single job west of say Glebe Point Road and undermines the prospects of development and new jobs in Western Sydney.

Cost so far; in the order of at least $60bn. $20bn for the Sydney Metro. $15-$20bn for the Parramatta Metro. $20bn for the Western Sydney rail lines.[[4]](#endnote-4)

Instead of facing up to real issues, the public is treated to increasingly outlandish Metro-boosting fantasies. These include:

*‘it will move 46,000 people an hour with driverless trains showing up every four minutes. The entirety of the current Sydney train network can move just 24,000 people an hour’.[[5]](#endnote-5)*

Who believes there will be an average of 3,067 people on a Metro train, 2,700 of whom will be standing? And how does Sydney Trains manage to move more than a million people a day if it can only carry 24,000 people an hour?[[6]](#endnote-6)

It is argued ‘global’ cities have metro railways, so if Sydney gets one it will be like London, or Paris, or New York, or Moscow, or Hong Kong.

Familiar reasoning for those following the SSsS – Sydney Stadiums Saga – aka the search for the ‘Twickenham of the South’, or the urgent need to deal with ‘safety issues’.[[7]](#endnote-7)

Anyhow, the beagle warned you about a barrage of bullshit as the clock runs down to e-day; the State election next year. Incidentally, before a Metro line opens in Sydney.[[8]](#endnote-8)

## 2. Breakfast?

### 2.1 Entree?

Behind the smokescreen are gross failures by Governments and advisers – at least by what is in the public domain.

Apparently neither the NSW Government nor Infrastructure Australia considered the obvious option of enhancing the Sydney Trains system in giving Metro a premature tick.[[9]](#endnote-9)

Nor apparently did the advisers twig to this in the Western Sydney ‘city deal’. The authors of which would have you believe: single-deck and double-deck trains can’t run on the same tracks; a complicated $20bn option for rail to the airport, sans business case and unlikely to ever be fully delivered is better than a simple option at 25% of the cost. The deal where the wrong rail line goes to the airport.[[10]](#endnote-10)

And those are mere blemishes if some more recent reports have any truth.

### 

### 2.2 Main course

The reports imply it is possible to enhance the Sydney Trains system such that it outperforms Metro on every transport criteria, including the only criteria on which Metro supposedly was better. The criteria used in presented assessments skewed in Metro’s favour - trains per line per hour.

According to the ABC, with some enhancements, Sydney Trains could run trains every ninety seconds; 40 trains per hour.[[11]](#endnote-11)

According to the Daily Telegraph, Sydney Trains could run trains every two and a half minutes; 24 trains per hour.[[12]](#endnote-12)

These might be compared with claims the North West Metro: can operate a train every second minute; will be operating a train every four minutes; 15 trains per hour for the peak. At most times Metro will operate one train every 10 minutes.

Such comparisons have Metro’s train capacity far less than an enhanced Sydney Trains system. Fewer trains than some parts of the Sydney Trains network might already do.

The ABC’s report implied Metro is unambiguously worse than an enhanced Sydney Trains system.

The Telegraph claimed Metro train capacity is 6 per hour better than Sydney Trains. So, there might be some ambiguity – and a coincidence.

Who is right? The ABC quoted someone who should know – the redoubtable and undeniably capable Mr ‘Tube Man’, Mr Howard Collins OBE.[[13]](#endnote-13)

The pedigree of the Telegraph’s claim is less clear.

## 3. Credence

### 3.1 Door stop

Among the many remarkable things about the reports is the claims were made without reference to doors. Or to what train buffs call ‘dwell time’. The very thing the State Government et al was at pains to tell us was the problem with double-deck Sydney Trains.

Trains that Mr Tube Man, after arrival in Sydney, ‘*warmed to*’. Even if he could envisage the Sydney network having both single and double-deck trains operating on it at the same time.[[14]](#endnote-14)

Is this an admission that whoever helped out Mr Ron Christie AM in the only proper study of Sydney rail in the last 25 years was right about double-decker dwell time being a canard? Or in his words:

*‘If people seriously want “metro-style” operations on a suburban railway system, they need*

*look no further than the Paris RER, which runs high capacity “heavy rail” trains, both double deck and single deck, at close headways, right through central Paris. With only five lines so far, it already carries over twice as many passengers as the Sydney system.’*[[15]](#endnote-15)

And does it mean the information provided by the State Government, starting with then Premier O’Farrell from 2012 onwards, has been inexact?

Does it support those who reportedly contradicted Premier O’Farrell on the two reasons he offered in one article for what led to Metro?[[16]](#endnote-16)

The first reason, international practice, can be gleaned from the comment:

*“One of the decisions I think state governments got wrong decades ago was to move to double-decks, instead of matching what's happening in Paris, in London, where single-deck were retained"*

To which the cynical press had - in the same report - Mr Tubeman saying:

*"Double-deck trains – go to Paris – see how the RER pounds those trains at 24 trains an hour. The design is different, they're still double-deck, but there are solutions"*

The Premier’s second reason – the capacity to carry passengers, got a flat refutation from another authoritative source. The Premier said:

*‘Single-deck ... can carry more people*,’

The expert said:

*‘double-decker trains could carry between 20 per cent to 30 per cent more people than single-decker trains….."I know that because we had a look at it in Melbourne and I’ve seen the numbers in Melbourne," Professor Currie said.’*

### 3.2 Terminology

It is possible the reports did not pick up terminological exactitudes of Mr Tubeman who reportedly referred to 90 second ‘headways’.

The ABC may have interpreted this gap between trains as directly translating to train frequency. However, in some thinking headway time might need to be supplemented by station dwell-time etc. to calculate maximum possible frequency.

Dwell time may explain the difference between the ABC and Daily Telegraph’s version of Sydney Trains maximum frequency. The Daily Telegraph may be assuming a dwell-time of one minute at CBD stations – a common supposition - accounting for the 60 second lower potential frequency than reported by the ABC.

A more cynical view might be that the Telegraph’s frequency avoids the embarrassing situation of Sydney Trains having greater trains per line capacity than Metro.

Who is to know. Neither the ABC nor Daily Telegraph has issued a clarification.

What we do know though is proper rail analysts regard ‘dwell-time’ as part of ‘headways’:

*‘In Sydney, the planned headway is three minutes which is based on a signalling clearance time of two minutes plus a station dwell time of one minute.’[[17]](#endnote-17)*

That one-minute comment at the end of the quote is coincidental. Add a minute to the ABC’s take of 90 seconds and we have the Telegraph’s estimate of 150 seconds.[[18]](#endnote-18)

### 3.3 Dwell-time

Proponents of single-deck trains claim the time they need to stop at stations to allow passengers to board and alight is less than double-deck trains. This means more single-deck trains can be run through a station platform during a given period than double-deck trains.

The obvious question is: how many? That is: what is the difference in dwell-times?

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Dwell-time needs to enable the train to stop unload and load. Many factors affect train stopping time including train layouts, station layouts and passengers. Necessary train stopping time will vary by train, by station, by time of day/week and most likely will include random factors.

Dwell-time, a scheduling concept, should enable all trains on the relevant line to maintain schedule to an acceptable level given stopping patterns. A poorly running schedule – too few trains for the given demand, or a bunching of trains - is likely to increase necessary stopping times and require excess dwell-time.

For this reason, dwell-time often exceeds the normally observed range of stopping time. This difference is often supplemented by an operating margin at the station and/or a ‘recovery margin’ to allow trains to exactly meet schedule on entry to areas where stations need high stopping times e.g. to prevent bunching.[[19]](#endnote-19)

There are formulae for dwell-time and recovery margin calculation. However, as dwell-time will be influenced by human factors, it is a matter to be observed and inferred – statistically modelled and included in simulations – rather than a purely mathematical construct.

Against this, information presented to the public by the Government about Sydney Trains and Metro dwell-time is simplistic and inaccurate.

The question of passenger crowding on Sydney Trains’ double-decks is often raised – that so many people are on the train that it is difficult to move towards the doors and thus necessary stopping time is high, and in some case, trains are unable to stay to schedule.

An indicator is said to be used to assess this; the ‘crowding standard’ or ‘maximum train load’. For Sydney Trains this is taken to be 135% of seats; that is all seats are occupied and there are 35% additional passengers are standing.

Did Infrastructure NSW assume this in its 2012 *State Infrastructure Strategy* which had Sydney Trains double-deck fleet reliably carrying 1200 people per 8 car set – 135% of 890 seats?[[20]](#endnote-20)

The idea of a relation between 135% and dwell time is probably wrong. The author’s understanding is the 135% is an arbitrary – not modelled – ratio imported to NSW from British Rail in the early 1990s to form part of the then (fashionable) Community Services Obligation contract.

As support for this understanding, Sydney Trains (then RailCorp) sought to change the indicator from a percentage to a number of people per square metre of carriage floor or non-seating space; four. It was unable at the time to convert the 135% to such an indicator.

However, the 135% appears to have been later converted to two people per square metre. Four people per square metre – reportedly an international standard – is 197% train load, which is ‘practical’ capacity. Around 1,750 people, some 550 more than Infrastructure NSW’s estimate.

One inference is that at least before 2012 train load indicators were not associated with scheduling.

Another inference is that like-for-like comparisons of total passenger capacities need to take into comparable people per square metre, with line capacities taking into account simulated dwell-time.

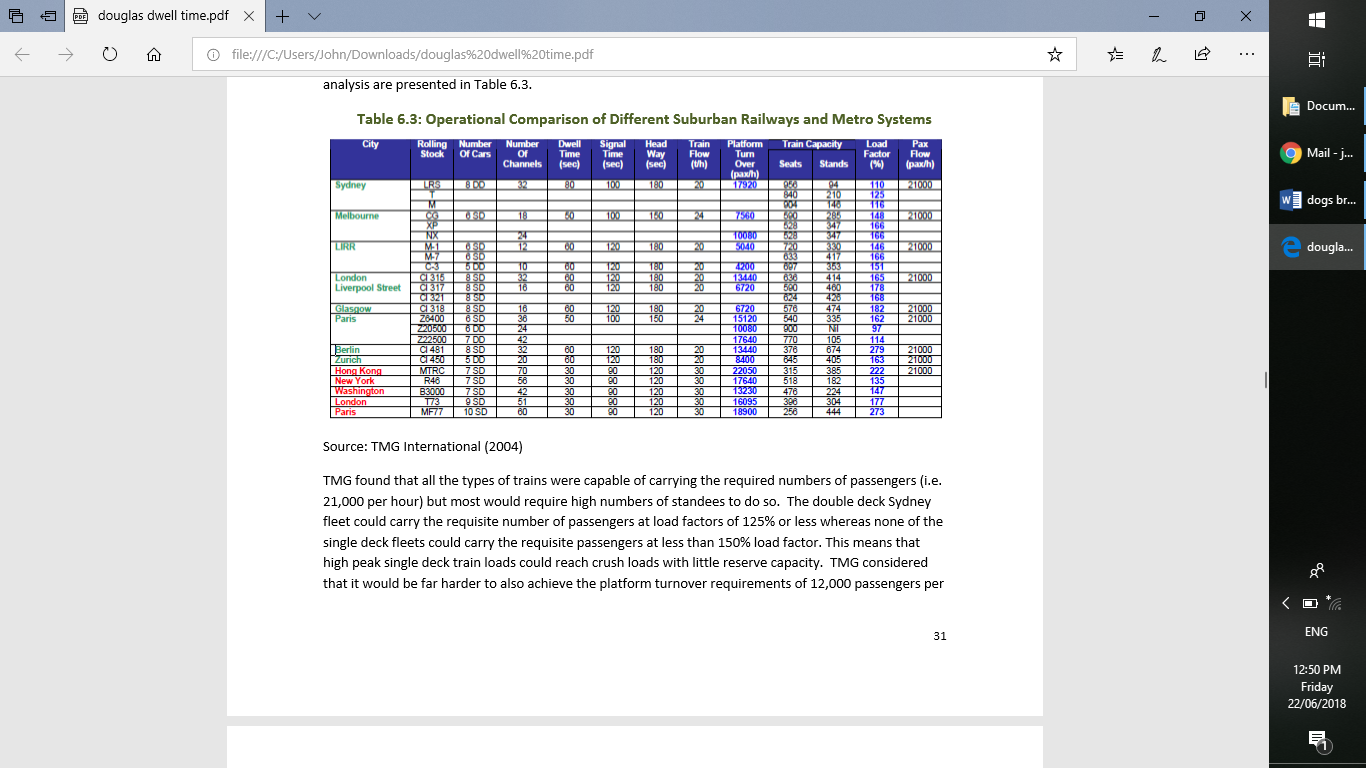
For commuter tasks, the relevant capacity indicator is simpler and incontrovertible - seating.

Let’s turn to an expert engaged by Transport for NSW in October 2011 – *apparently* prior to the decisions to ‘go Metro’ - to look at dwell time.[[21]](#endnote-21)

The expert’s report observed average stopping time more than 60 seconds at Town Hall and Central stations. It noted simulations conducted for the NSW government in 2011 by PB-CHA which included a difference between double-deck and single-deck dwell-times of 10 seconds.

It further cited TMG (2001) comparisons of various rail systems. This is in Figure 1 below.

**Figure 1: Transport for NSW commissioned expert report (2012) - railway comparisons**



In Figure 1 the green cities (railways) are commuter systems, the red are rapid transit or metro systems. The metro systems had a 30 second dwell time – superior to the single and double-deck trains then in use. At least in part this is due to a higher number of ‘channels’ – doorways.

The doorways? Door size was not in the expert report except for Sydney – 1.7metres. This might be compared with other reports of new Paris RER double deck fleet having 2.0metres width which would contribute to a claimed eventual headway of 108 seconds.[[22]](#endnote-22)

The double-deck effect? Compare London CI315, Berlin CI481 and Sydney all with 32 channels; the difference is apparently 20 seconds.

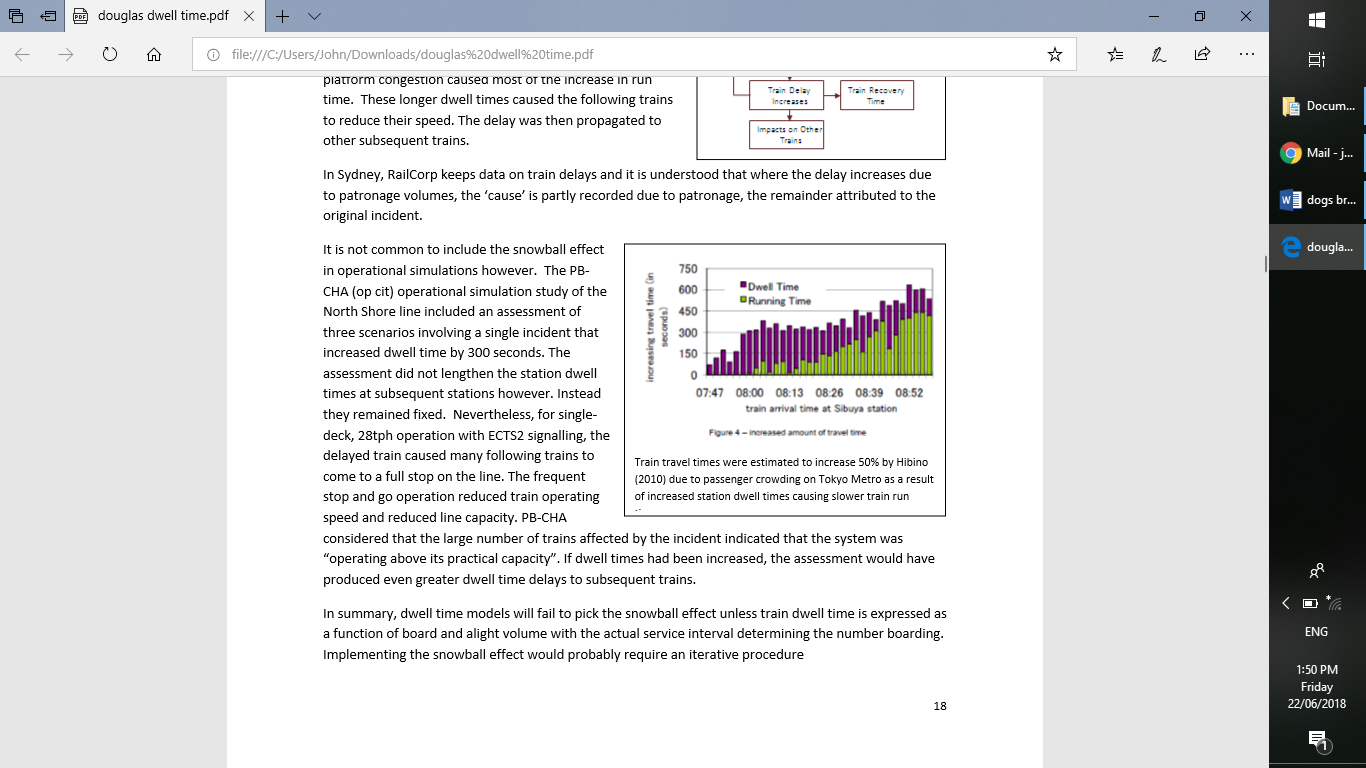
However, the 80 seconds for Sydney is higher than observations reported by the expert report. It is 11 seconds higher than the peak maximum observations for Sydney in 2011 – possibly due to improvements reported in the preceding decade. Accounting for this would support the PB-CHA difference of 10 seconds noted above.

The expert and others provided some cautions:

*‘TMG found that all the types of trains were capable of carrying the required numbers of passengers (i.e. 21,000 per hour) but most would require high numbers of standees to do so. The double deck Sydney fleet could carry the requisite number of passengers at load factors of 125% or less whereas none of the single deck fleets could carry the requisite passengers at less than 150% load factor. This means that high peak single deck trains could reach crush loads with little reserve capacity.’*

With growing demand single-deck and Metro stopping time could blow-out more quickly than Sydney double-decks. The effect at a single platform with 2-minute planned headways would quickly cascade and trains would lose schedule. This is shown in Figure 2 from Tokyo metro.

**Figure 2: Transport for NSW commissioned expert report (2012) - delays at Tokyo metro**



The technical implication: when there is a requirement for precise scheduling or exact calculations of maximum capacity, dynamic modelling of comparative and alternative systems – including dwell time - is necessary. So, is there public evidence of relevant comparisons done by NSW?

The practical implication: if Japanese mass transit gets problems from crowds on railways, anyone can! Ergo claims about rapid transit / metro systems need to be very carefully assessed.

The expert included another caution:

*‘PB-CHA (op cit) considered that 20 [Sydney double deck] trains per hour was the “practical train capacity”. They calculated a higher “theoretical” capacity of 22 trains per hour…… running 22 trains per hour ‘passed’ their simulation tests.’*

This speaks of a part-simulation of the existing, unenhanced, Sydney Trains system running more trains than the *State Infrastructure Strategy* represented.

Anecdotal observations confirm it is possible to run 22 or more double-deck trains for an hour on the existing system but that leads to delays - the rate subsequently falls to 20 or slightly below.

This is one reason for the scatter diagram depicting increasingly degraded peak operations reported by the Independent Transport Safety and Reliability Regulator in its assessments of Sydney Train (then CityRail) on-time running in 2006-2007 and 2007-08. The Regulator’s assessments pointed to some issues regarding stopping exceeding dwell time *after* a new timetable which reduced and slowed services as well as increased some dwell times.

Another issue it pointed to was a propensity to run more trains at the early part of ‘peaks’ – in fact before the highest rate of passengers – presumably to improve ‘on-time’ running statistics before people, and dwell time, interfered.[[23]](#endnote-23)

The expert’s reported PB-CHA simulation was of advanced signalling - ETCS Level 2 - for single-deck trains, not double-deckers. Was a similar one undertaken for double-deckers?

The PB-CHA result appears to support the view that replacement of double-decks with single-decks on the simulated line section (lower North Shore) would be sub-optimal if total passenger capacity was the criteria – which the author repeats should not be the criteria.

At a broad level, it appears dwell-time differences between double-decks and single-decks matter, but not that much. The expert agrees:

*‘The small reduction in dwell time would be offset by a reduction in carrying capacity however. With……25% lower single deck capacity would require 28 trains per hour to match the current capacity provided by 20 double deck trains per hour.’*

### 3.4 Does it matter?

In the absence of clarification, there is a question as to whether the difference in ABC and Daily Telegraph reports – the one minute - matters.

Would running Sydney Trains at the lesser rate claimed by the Telegraph – one every two and a half minutes instead of the ABC’s every one and a half minutes - change a comparison with Metro?

Figure 3 provides an indication using equal on-board crowding standards for Metro and Sydney Trains.

Metro performs worse on all passenger criteria. Much worse if the ABC is correct. Between 4% and 68% worse – depending on criteria – according to the Telegraph.

Perhaps some further adjustment is necessary, yet the indication is clear.

**Figure 3: ABC v. Daily Telegraph – does it matter?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Metro capacity** | **Enhanced Sydney Trains capacity** | **Metro comparable capacity** |
| **ABC**  Trains per hour  Seats per hour (a)  Total passengers per hour (b)  Total passengers per hour (c) | 30  11,333  27,000  40,500 | 40  35,200  48,000  70,000 | -10  -23,867  -21,000  -29,500 |
| **Daily Telegraph**  Trains per hour  Seats per hour (a)  Total passengers per hour (b)  Total passengers per hour (c) | 30  11,333  27,000  40,500 | 24  21,120  28,800  42,000 | +6  -9787  -1,800  -1,500 |

a. Seats per train: Metro 378, Sydney Trains 880.

b. Capacity per train at 2 people per sq. metre: Metro 900, Sydney Trains 1200.

c. Capacity per train at 4 people per sq. metre: Metro 1350, Sydney Trains 1750 (Douglas).

*Source: Derived from authors submission to Future Transport November 2017.*

### 3.5 No chip?

The episode – more Sydney Trains promised - was a surprise. There were more than a few who felt the State Government had a chip on its shoulder about Sydney Trains.

This episode commenced with a report claiming the NSW Government announced the starting of the enhancements which would see Sydney Trains being able to outperform Metro. At a supposed cost of $880m. Ergo, no chip on shoulder. Or at least not anymore?[[24]](#endnote-24)

## 4. Train Magic

### 4.1 Train Magic; ATP/ATC/ATO

The Train Magic, as reported by the ABC and Daily Telegraph relates to Automatic Train Protection, Automatic Train Control and Automatic Train Operation.

The acronym for the particular technology suite is ETCS. It is a type of train control system, originating in Europe to address ‘interoperability’ on high speed railways that cross country borders. It has various levels of sophistication. The one referred to in the articles is Level 2 - ETCS-2.

ETCS-2 provides a degree of automation of trains. Drivers are not always needed. Just like the NSW Government’s boast about Metro.[[25]](#endnote-25)

If the reports are to be believed Sydney Trains could basically operate the same way as the Metro being constructed in Sydney. Just better. Even without counting seats. Or looking at cost.

And how credible is the claim? There are always issues with adopting new technologies to ‘legacy systems’. But Mr Tubeman should know – the reports infer something similar was used in London when he ran the Tube prior to arriving down under.

There is an Appendix on this.[[26]](#endnote-26)

### 4.2 The point?

Principles of the Train Magic were well known well prior to the NSW Government’s decision to progress Metro. The NSW history goes back nearly a decade and a half to recommendations of the Waterfall crash inquiry – recommendation 32. There is also quite some history in the UK.[[27]](#endnote-27)

Since the Waterfall crash inquiry there have been regular reports to the NSW Government on progress with trialling such a system.

Limited trials of at least precursors to the relevant system were conducted on the Sydney Trains system (then CityRail) from 2007-08 including in the Blue Mountains.[[28]](#endnote-28)

Note the PB-CHA simulations in section 3.3 above - prior to mid-2012.

Infrastructure NSW’s *State Infrastructure Strategy*, October 2012, apparently referred to it as:

*‘using technology that is proven in service overseas.’[[29]](#endnote-29)*

Perhaps drawing on the following from an expert report commissioned by Infrastructure NSW?

*‘Improvements in signalling (ETCS or similar on key sections of the network) would be expected to reduce headways….. We believe that this should enable another of the 24tph planned service to be operated, giving 23tph in practice by 2016.’[[30]](#endnote-30)*

Also known prior to the Metro decision were claims regarding the increase in London rail capacity due to ETCS alone compared with best practice lights – in 2010 by at least 10%.[[31]](#endnote-31)

In 2016 Alstom claims to have successfully trialled a Sydney pilot project.[[32]](#endnote-32)

The most recent reports had the Premier claiming the magic enhancements are based on ‘Paris and London’ technology. Presumably her Government doesn’t doubt the Train Magic.[[33]](#endnote-33)

There are reports the better technology is to be installed on Paris’ RER – with a target of trains every 108 seconds – better than Sydney Metro. Another point: Paris RER uses double-deckers.[[34]](#endnote-34)

Not (publicly) known until very recently was the claim ETCS-2 for Sydney Trains is superior to Metro.

### 4.3 A curio

The claims about Train Magic make some other claims interesting.

For example, the double-deck trains per line capacity claimed in the Telegraph in 2018 – effectively a conservative 24 trains per hour - looks remarkably close to the ‘*pounding*’ already going on in Paris.

And remarkably close to published claims about the Train Magic made in 2014 by the ABC, referencing the expert commissioned by Transport for NSW.[[35]](#endnote-35)

With a difference – the ABC’s comparison has been misplaced. The ABC compared 24 double-decks trains with 26 single-decks, not the 30 single-decks now bandied about. Figure 4:

**Figure 4: ABC Fact Check comparison made in 2014**

| **Double-deck v single-deck train capacity, peak load per hour** | | |
| --- | --- | --- |
|  | **Existing signalling** | **Enhanced signalling** |
| **Double-deck** | 20 trains, 28,000 passengers | 24 trains, 33,600 passengers |
| **Single-deck** | 22 trains, 25,000 passengers | 26 trains, 29,200 passengers |
| *Source: Douglas Economics* | | |

<http://www.abc.net.au/news/2014-04-11/barry-ofarrell-sydney-trains-claim-doubtful/5371446>

Did Transport for NSW’s expert have anything to say about this say in his report two years earlier?[[36]](#endnote-36)

**Figure 5: From Transport for NSW commissioned expert report (2012)**

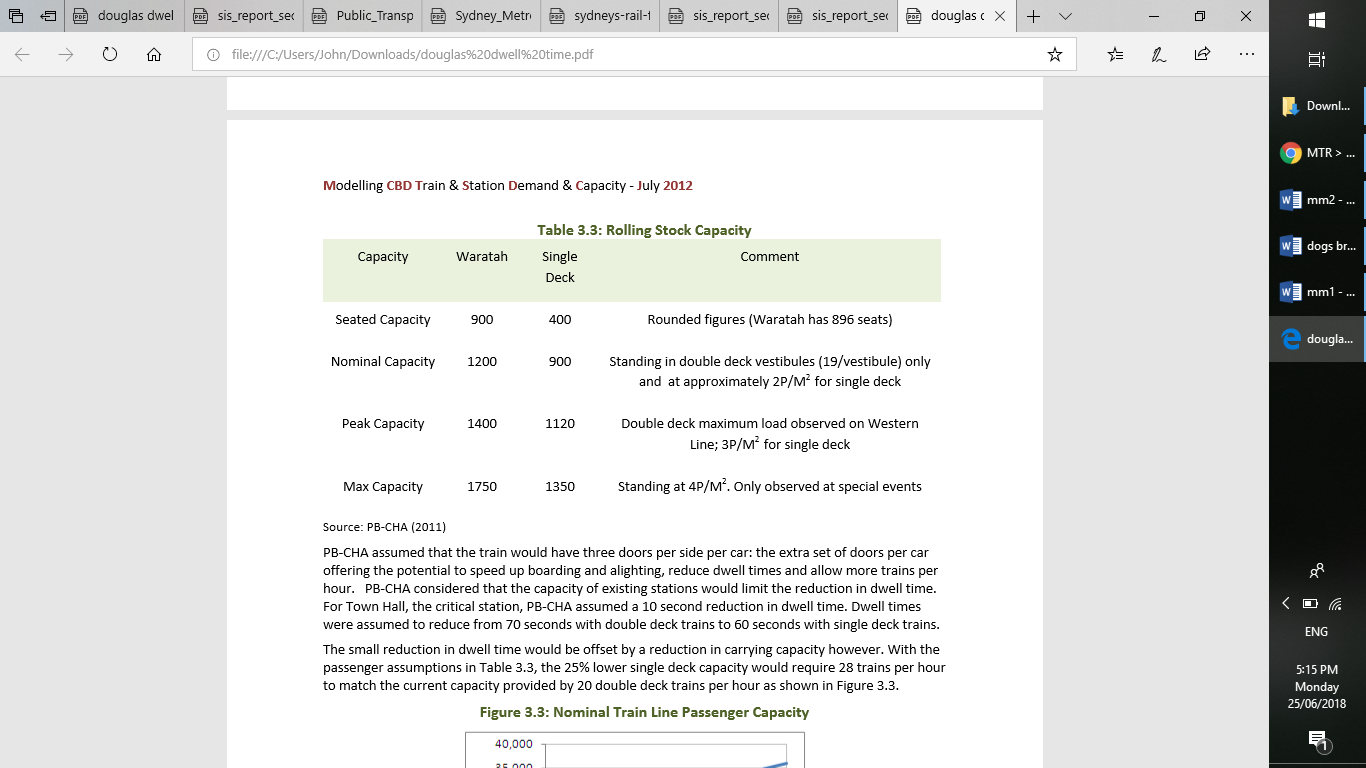


Figure 5 might better explain the earlier comment regarding the total passenger capacity of double-deck trains. Unsurprisingly, the first – most important – row in the table is seating.

The text in Figure 5 (above) referred to a Figure 3.3. Here that is:

**Figure ‘3.3’ Transport for NSW commissioned expert report (2012)**

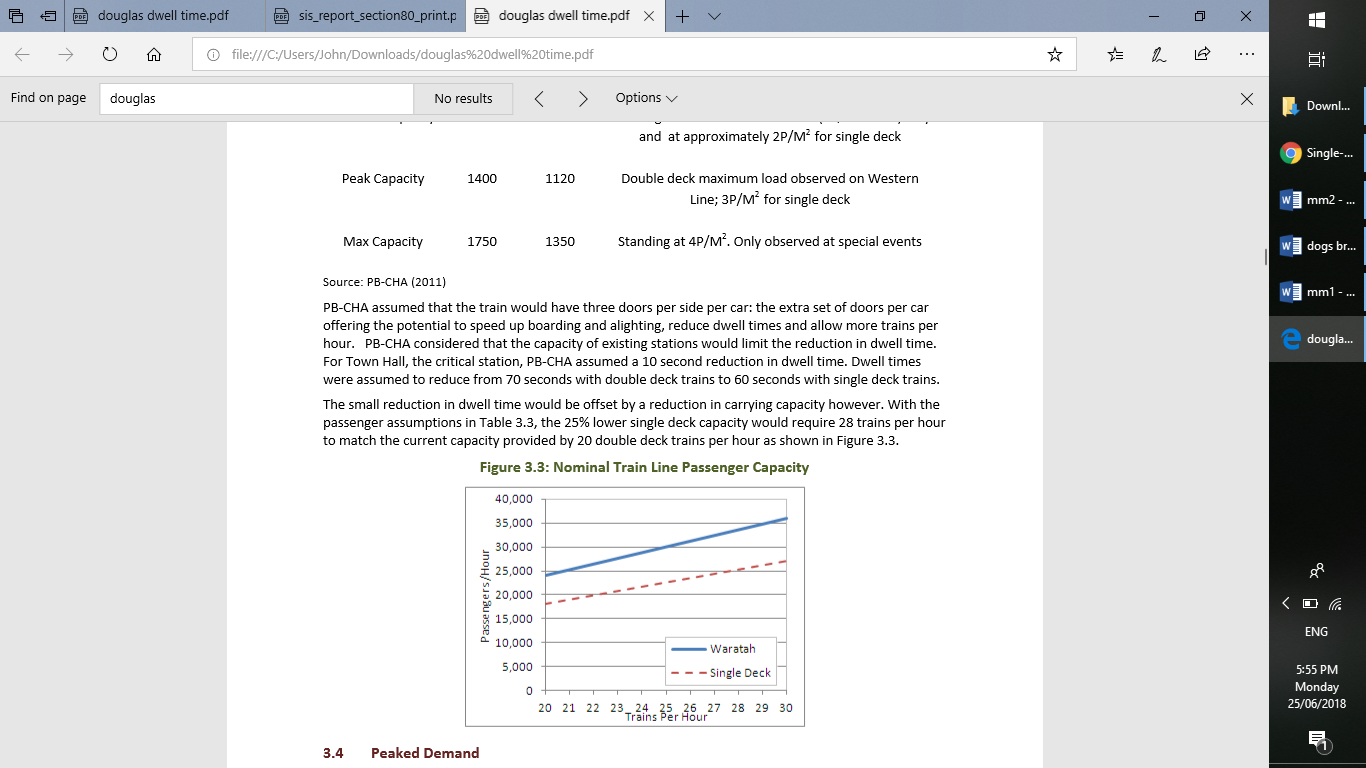


Figure ‘3.3’ suggests the (then) modelling showed single-decks to be inferior to Sydney Trains’ nominal capacity to carry people - sitting or standing – even at 30 single-decks per hour.

This is also shown for Metro in the worked example provided in the author’s submission to the Western Sydney Rail Scoping Study - for the Bankstown line – Figure 6 below.[[37]](#endnote-37)

**Figure 6: Indicative train capacity comparison, Bankstown line**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Metro** | **Sydney Trains** | **Difference** |
| EIS (a)  Trains per hour  Seats in 3 hours  Total 3 hr pax. capacity | 15  17,000  40,500 | 10  26,400  36,000 | +5  -9,400  +4,500 |
| Potential (b)  Trains per hour  Seats in 3 hours  Total 3 hr pax. capacity (b)  Total 3 hr pax. capacity (c) | 15  17,000  40,500  60,750 | 12  31,680  43,200  63,000 | +3  -14,680  -2,700  -2,250 |

1. From Environmental Impact Statement with 2 people per square metre
2. From EIS (above) and for Sydney trains text above with 2 people per square metre
3. From EIS (above) and for Sydney trains text above with 4 people per square metre

Note here claims the current Sydney Trains system can deal with 22 double decks per hour, not just the 20 in ABC Fact Check (Figure 5) or in Figure 6.

Figure 7 shows what another expert commissioned by an NSW agency reported.[[38]](#endnote-38)

**Figure 7: Infrastructure NSW commissioned expert report (2012)**

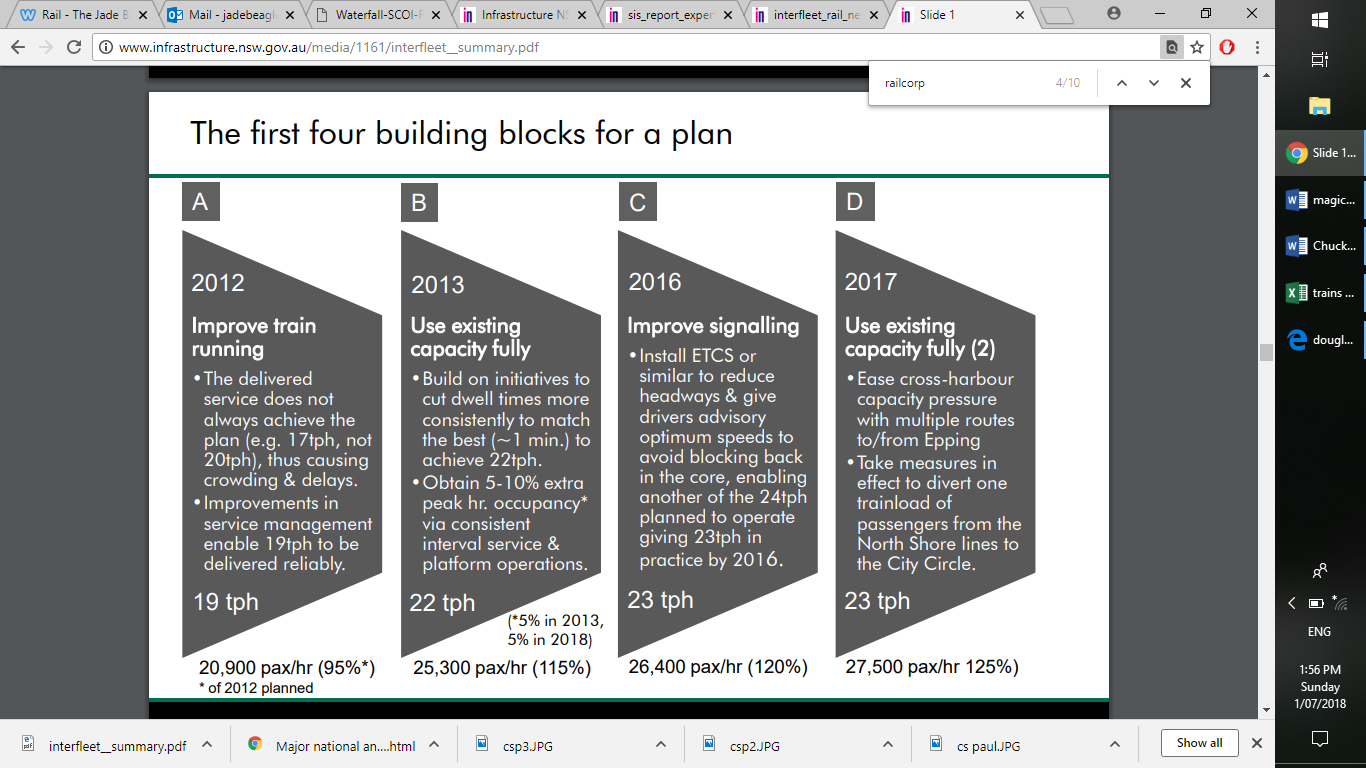


Figure 7 also says it is possible to run 22 double-deck trains per hour without Train Magic.

Per hour per line comparisons of 40,000 (or 46,000) Metro passengers versus 24,000 Sydney Trains passengers are unsupportable on at least 6 grounds:

1. The correct capacity comparison would include – or perhaps be – seating;
2. The correct capacity comparison would have more people on each Sydney Train e.g. 1,400 rather than 1,200;
3. The misleading capacity comparison - of Sydney Trains without Train Magic and Metro with Magic – would have more Sydney Trains e.g. 22 rather than 20;
4. The correct capacity comparison – both Sydney Trains and Metro with Train Magic would have more Sydney Trains per hour – with magic e.g. 24 rather than 20;
5. The correct capacity comparison would prima facie have fewer Metro trains per hour e.g. 26 rather than 30;
6. Estimation of the correct capacity for Metro trains requires a simulation.

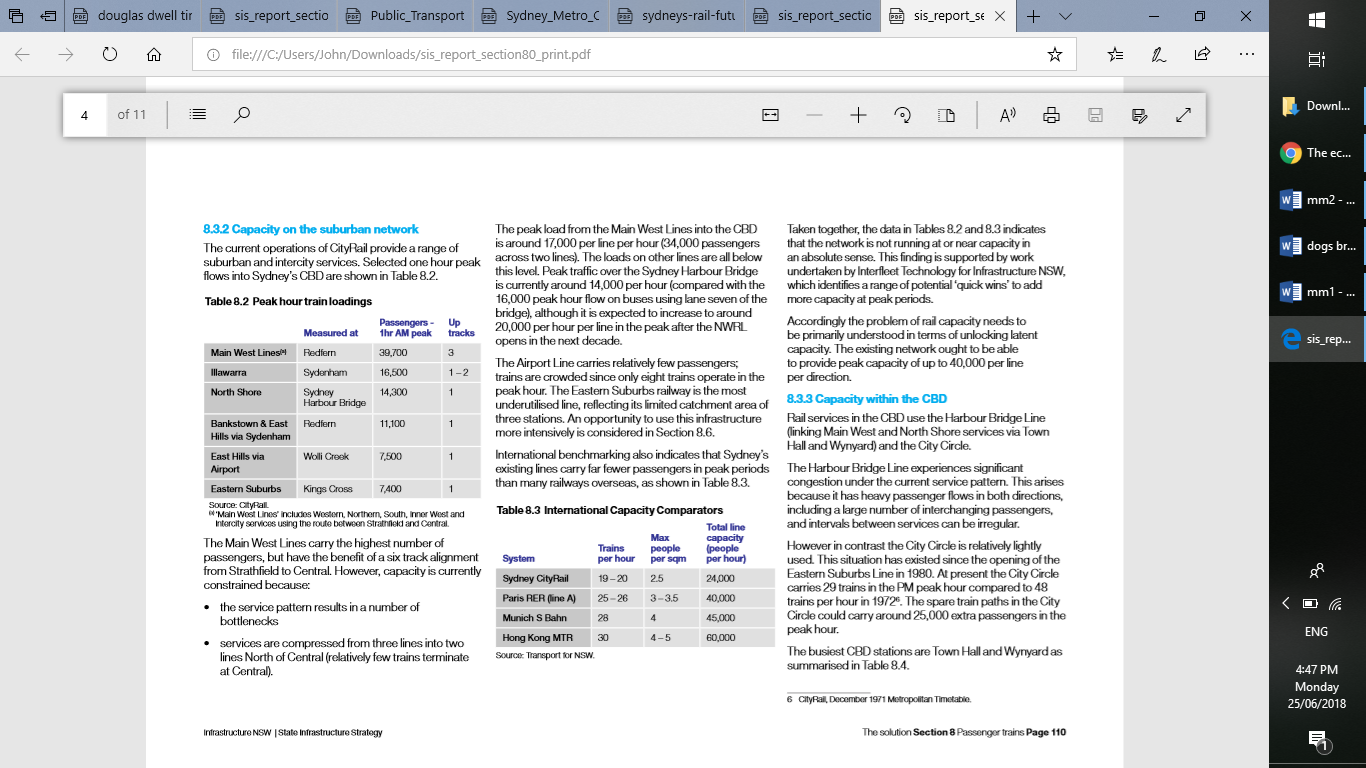
ABC Fact Check, and Transport for NSW’s expert, assumed Train Magic could only achieve 24 double-decks per hour – that the existing Paris RER operation was the upper limit. They were seemingly unaware of the Magic’s potential to achieve 30 or more double-decks per hour – 33 is implied by the reported RER target noted earlier.

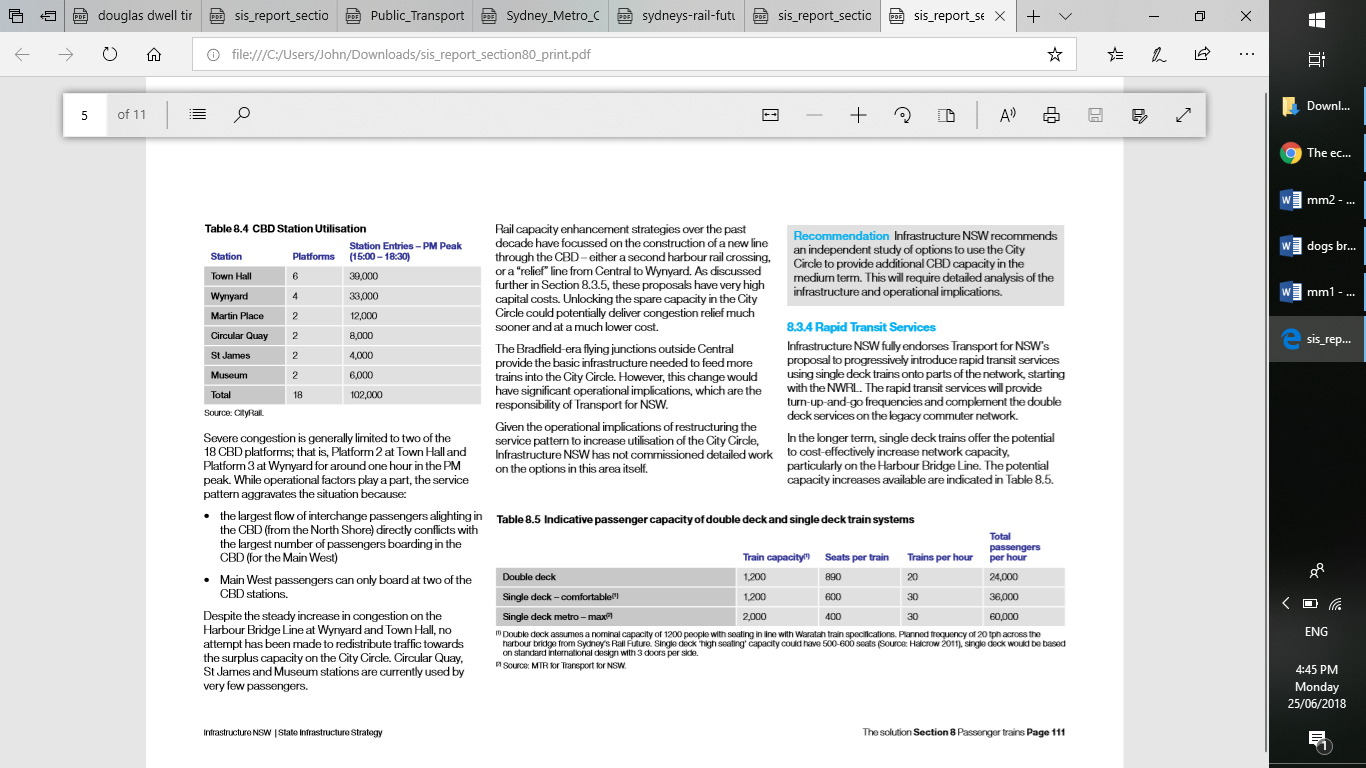
### 4.4 Thirty trains from provenance?

What is the provenance of numbers such as 30 Metro trains.

Infrastructure NSW’s October 2012 *State Infrastructure Strategy* produced some tables to support its view of a ‘three tiered’ railway with a rapid transit/metro tier; Figure 8.[[39]](#endnote-39)

**Figure 8: Tables from State Infrastructure Strategy October 2012**





Transport for NSW appears to be the provenance for these numbers.

The 30 single-deck trains per hour does accord with the international experience reported in Figure 1 (earlier). Yet see Figure 9.

**Figure 9: Infrastructure NSW commissioned expert report (2012)**

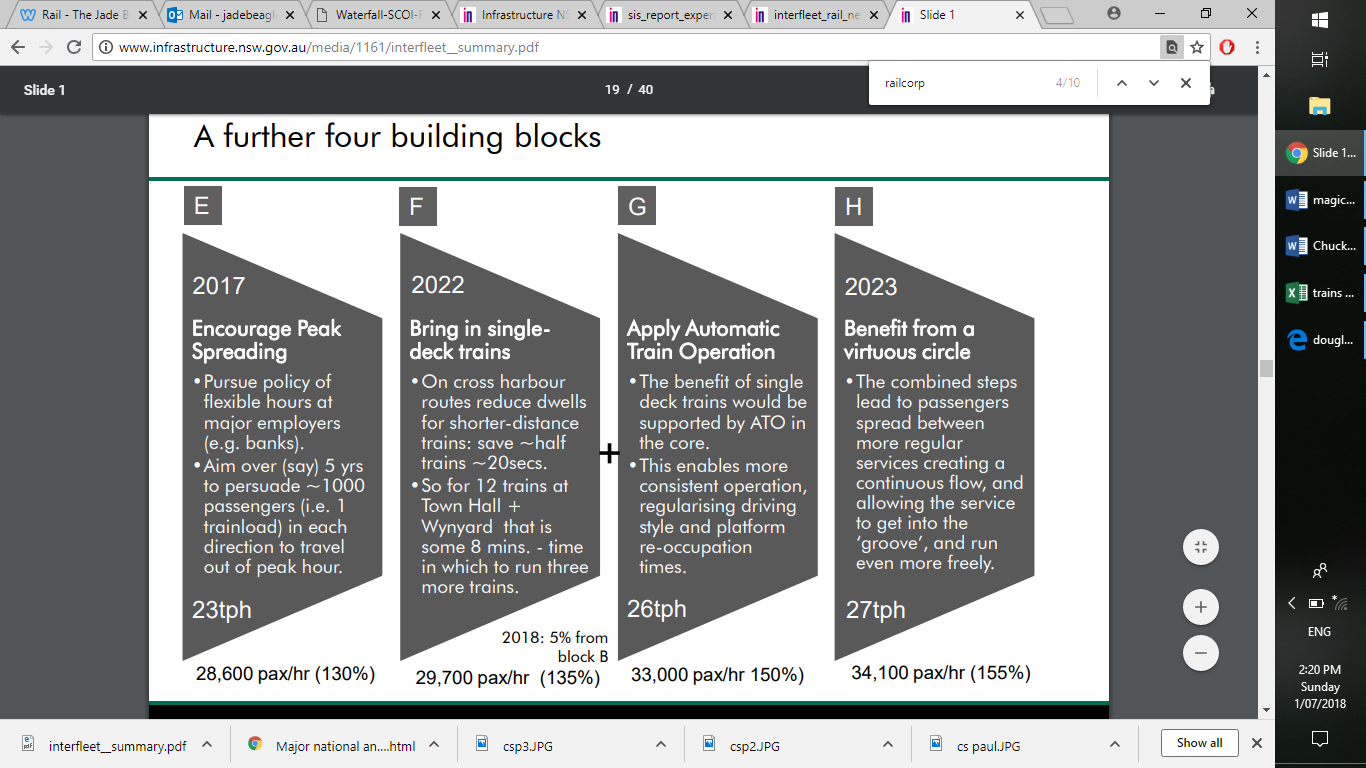


Figure 9 points to 27 single-deck trains per hour. Carrying 34,100 people. Less than in Figure 8 as:

*‘ATO enables a smoother operation of all trains at more consistent speeds and headways…..CityRail‟s trains are all 8 cars, ….That generates a benefit of over 3 minutes compared to the London example, which is certainly sufficient to run another train. ATO supports an extra 3 tph being achieved with single deck trains.’[[40]](#endnote-40)*

The capacity per single-deck train doesn’t line up either; around 800 seats and 1260 passengers per single-deck train – but Figure 8 cites Halcrow a highly respected rail advisory firm.

The *State Infrastructure Strategy* 2012 capacity numbers (Figure 8) do not readily align with those from the expert it commissioned (Figure 7) nor with those from the expert commissioned by Transport for NSW (Figure 5).

To repeat, for example, its expert claimed 22 Sydney Trains per hour capacity at present yet the

*Strategy* claims 20 trains per hour.

Another example of difference between Infrastructure NSW and experts is Table 8.5’s 600 seats per single-deck ‘comfortable’, some 200 more than in the Transport for NSW expert report, and 220 or so more than reported for the actual Metro trains.

Another example: Table 8.5’s double-deck Train capacity of 1,200 is 200 less than the Transport for NSW expert’s report peak Waratah (double-deck) capacity.[[41]](#endnote-41)

Yet another example is Table 8.3’s 24,000 double-deck passengers per hour on existing signalling etc. some 4,000 short of ABC’s Fact Check (Figure 4 above).

Similarly, while Infrastructure NSW’s Table 8.5 shows the capacity of double-deck and single-deck to be equal at 1,200, none of the rows in the Transport for NSW’s expert report supports that.

In summary, the comparison presented by the *State Infrastructure Strategy*, Table 8.5, is unsupportable and would have been rejected by the Transport for NSW expert report on at least the six grounds mentioned in the preceding section. It also is inconsistent with advice from the expert commissioned by Infrastructure NSW.

### 

### 4.5 A magic target

The 2012 *State Infrastructure Strategy* also said, without (other) evident support:

*‘the existing network ought to be able to provide peak capacity of up to 40,000 per line per direction.’ [[42]](#endnote-42)*

Later 40,000 became one of the numbers for maximum Metro capacity – another was 46,000. The 60,000 single-deck metro max. fell by the wayside.

We are led to believe 40,000 passengers equates with 30 Metro trains. There is support for a target of 30 Metro trains - Figure 1.

But isn’t the only passenger target cited in the Transport for NSW expert’s report somewhat less? 21,000?

Infrastructure NSW’s expert report did comment on capacity targets. It said:

*‘for instance, in Britain, “capacity” is defined as seats + up to 35% standing (depending upon train type) ….. Broadly, CityRail is carrying an average 1000 passengers/ train in the peak hour on trains with a notional capacity of 1200 (an appropriate capacity for a major wealthy country such as Australia).’*

The expert’s assessment of 27 trains per hour – Figure 9 - is 32,400 passengers per hour. At 30 trains per hour it is 36,000 passengers per hour. It is not 40,000.

A new train system – Metro – might be ‘designed’ to take say 40,000 passengers per hour. However, the question here is was the number arrived at? Or was the target derived from a design of a train?

Leading to the chicken and egg question. What came first: Metro or the transport task / target.

From the contents of the *State Infrastructure Strategy* 2012 it appears Infrastructure NSW relied on – perhaps only on - Transport for NSW for ‘information’ on the pivotal issues of capacity and capacity criteria (as defined by the Government - again with which this author does not agree).

Yet this information does not include that contained in the expert report for Transport for NSW. Nor does it include all information and views from an expert commissioned by Infrastructure NSW.

Transport for NSW is the proponent of the Metro projects yet Figure 8 above; note [2] Table 8.5 is:

*‘Source: MTR for Transport for NSW.’*

It is unclear what this is intended to convey. Nonetheless, MTR is the acronym of the Mass Transit Railway of Hong Kong – a metro operator. It runs Melbourne’s passenger railway and now has a 60% holding in the company to operate the North West Metro in Sydney.

### 4.6 Timing

When was the decision made to initiate ‘Metro’ by turning the North West Rail Link into rapid transit?

Not by 7 April 2011 if reports quoting the now Premier are to be believed. An April 2011 Sydney Morning Herald article included the following:

*‘Since the demise of the CBD Metro, Mr Staples* [the Former cited Metro chief] *is known to have been examining ways of converting part of the CityRail grid to a single-deck, high-frequency metro-style system.*

*Ms Berejiklian, however, confirmed that standard double-decked trains would run on the new rail line. ''This is a heavy rail link,'' she said.’*[[43]](#endnote-43)

Or according to Infrastructure NSW’s experts:

*‘We recommend that under the current CityRail train specification NWRL passengers are given the choice of direct trains to the city centre both via Chatswood and via Strathfield.’[[44]](#endnote-44)*

A 3 December 2011 article in the Sydney Morning Herald said it was unclear how the idea of private sector train operations of the North West Rail Link would interact with Sydney Trains; implying a lack of awareness of a change in the position stated by Ms Berejiklian in April.[[45]](#endnote-45)

Mr Sandy Thomas suggests the decision was made after June 2012. He argues there was ‘kite flying’ in the media about metro trains in October 2011.[[46]](#endnote-46)

A North West Rail project definition report - November 2011 – is of interest.[[47]](#endnote-47)

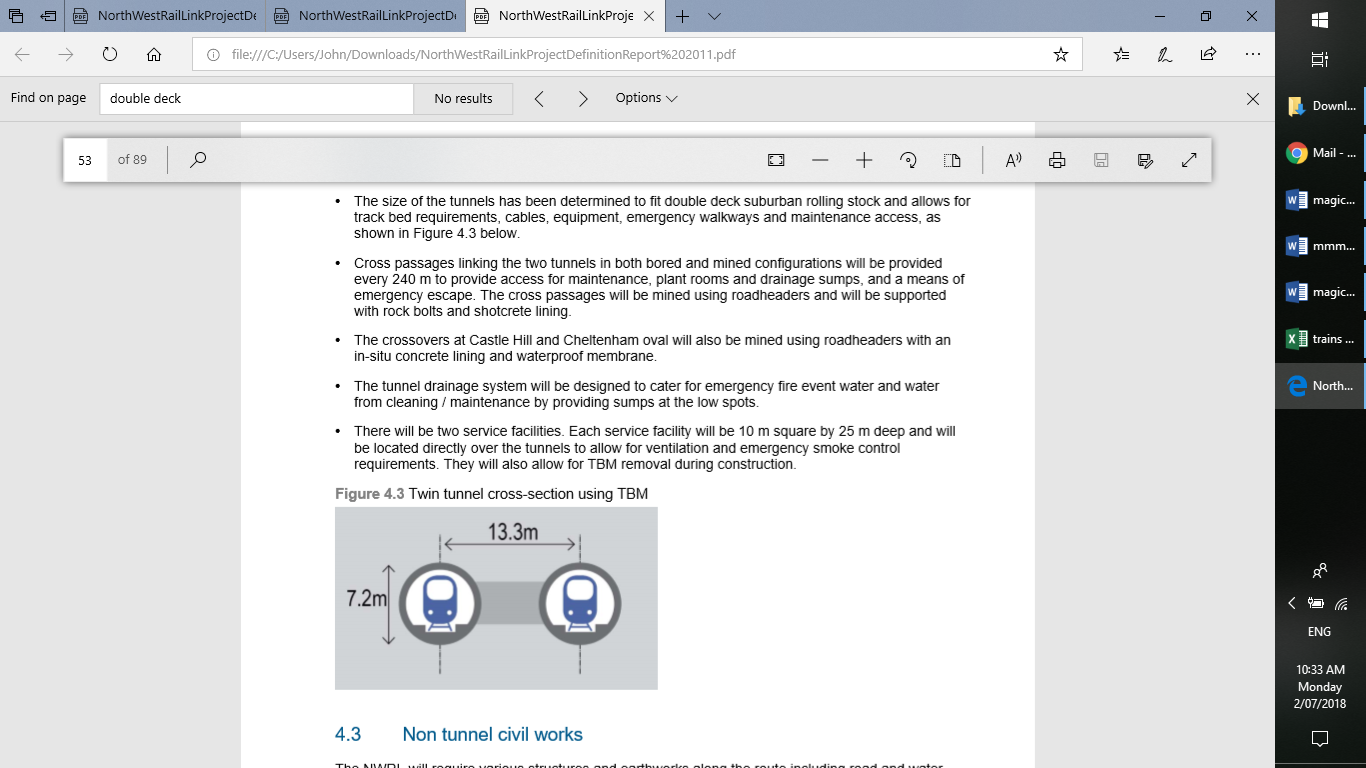
It did not mention Metro or rapid transit – rather it noted challenges of connecting the North West Rail Link with Sydney Trains (then CityRail) at Epping and said ‘*modern 8 car double-deck*’ services will operate on the new link. Yet it included this single line among its 85 pages:

*‘Tunnel dimensions • 15.5 km of twin 5.7 m internal diameter segmentally lined tunnels.’*

Does this refer to the small tunnel diameter that is a central matter of contention?

Figure 10 is something from the report.

**Figure 10: From North West Rail project definition report November 2011**

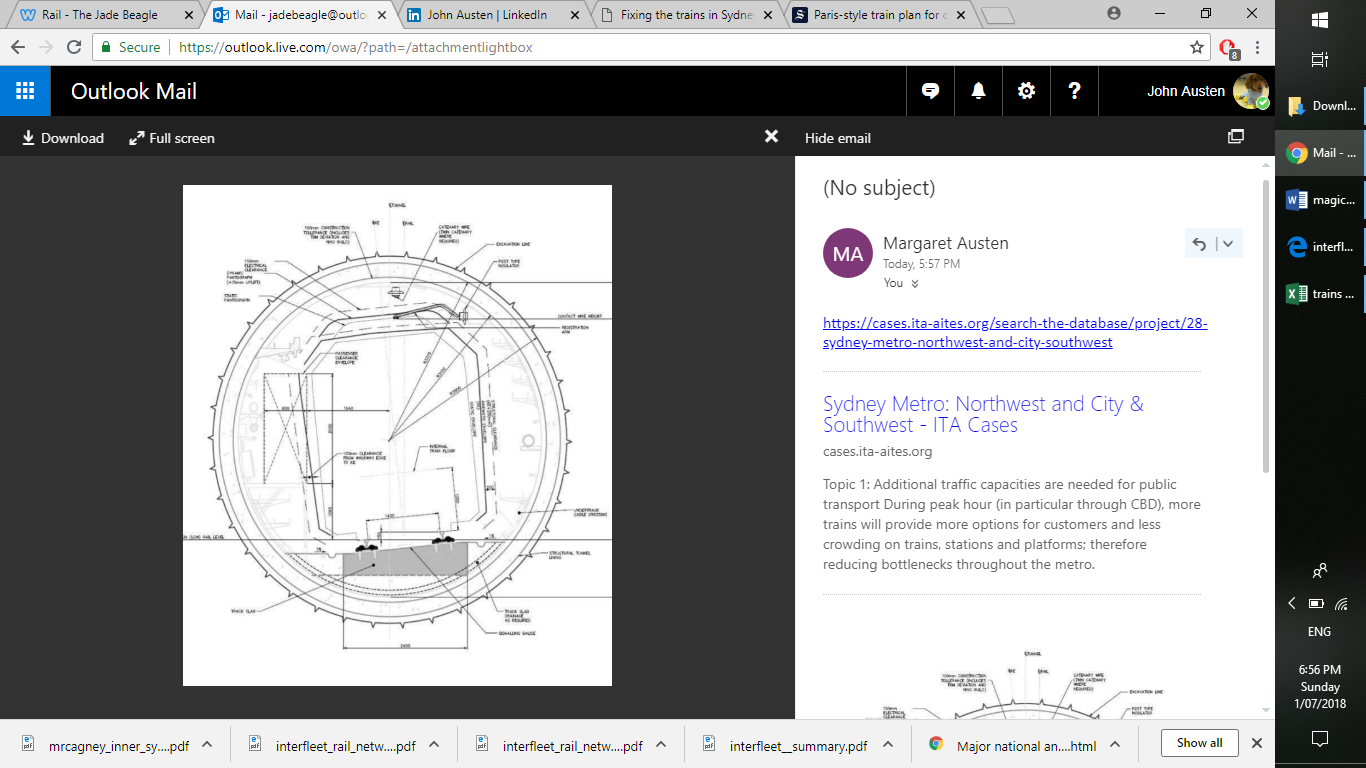


*‘The size of the tunnels has been determined to fit double deck suburban rolling stock and allows for track bed requirements, cables, equipment, emergency walkways and maintenance access, as shown in Figure 4.3 below’* (actually, above).

Further, it referred to construction methods for the Epping-Chatswood segment, to which the North West Rail Link would link (!) citing their 7.2m diameter tunnel widths.

Size? Given the Government wanting to interest us in tunnels, here is something from the Association Internationale des Tunnels; Figure 11.

**Figure 11: Sydney Metro NorthWest and City & Southwest**



*‘Diameter: OD: 6.7m; ID: 6.13m; clear opening: 6m’*[[48]](#endnote-48)

The 5.7m (or 6.0m) interior tunnel diameter is not mentioned in the publicly available expert reports commissioned by Transport for NSW and Infrastructure NSW cited in this article.

The issue and implications of tunnel size came to the fore in 2012-13. The claim being they are too small for Sydney Trains double-decks.[[49]](#endnote-49)

If the 6.0m is now too small, presumably 5.7m is also too small for Sydney double-decks. In that case, 5.7m might point to a decision prior to December 2011 to introduce rapid transit.

Which wouldn’t sit well with this from a 13 December media release from then Minister Berejiklian:

*‘The project will link with Sydney’s CityRail network.’*[[50]](#endnote-50)

Of course, this is an ‘if’.

### 4.7 Magic – a disappearing act?

And what of Transport for NSW’s expert report? The above discussion refers extensively to it as among the very little expert commentary in the public domain.

That expert report is not incorporated or referenced in the November 2011 project definition report. This is not surprising since it (the former) claims to have been commissioned the previous month.

However, an inference open from the above is the basic Metro decision was made without the benefit of advice sought on what was claimed to be the critical capacity issue.

*Sydney’s Rail Future*, dated June 2012, also does not refer to the Transport for NSW expert’s report. Nor does it provide capacity tables. It does make a claim of 30 rapid transit (metro) trains per hour.

Some seven months after commissioning the expert and one month before the final expert report was issued for distribution to contributors, would the client Transport for NSW have consulted a final – or a draft – to inform its own *Sydney’s Rail Future*?

The Transport for NSW expert report is not referenced in Infrastructure NSW’s 2012 *State Infrastructure Strategy* published in October 2012, some months after the report was signed-off for distribution to contributors. This is curious for three reasons.

First, the *State Infrastructure Strategy* cites Transport for NSW – who commissioned the report - as its principal source in the relevant chapter.

Second, Infrastructure NSW’s own expert report dated April 2012 - which incidentally refers to meetings with ‘key stakeholders’ in March - are in part conflict with, and in part apparently unaware of, matters in the expert’s report.[[51]](#endnote-51)

Third, Infrastructure NSW should be aware of the expert in question – it commissioned him to do a report on a different topic*.[[52]](#endnote-52)*

Perhaps the expert report vanished. What then of:

*‘The report says that the consultant MTR, which operates the train network in Melbourne, will review work by other consultants on Sydney's future rail needs.’[[53]](#endnote-53)*

Does this mean they were to review the expert work commissioned by Transport for NSW? For Infrastructure NSW? Presented to Infrastructure NSW?

An indicative timeline of this and other unusual matters is at Appendix 2.

### 4.8 Merde?

Two different railways operate in Paris – A and B. One is Metro.

According to Wikipedia they are

Paris A:

*‘a major social impact. By bringing far-flung suburbs within easy reach of central Paris, the network has aided the reintegration of the traditionally insular capital with its periphery.’*

Paris B:

*‘designed to provide local, point-to-point service in Paris proper and service into the city from some close suburbs. Stations within Paris are very close together to form a grid structure, ensuring that every point in the city is close to a metro station…… but this makes the service slow 20 km/h….. The low speed virtually precludes feasible service to farther suburbs’*

Here is A on a map.

**Figure 12: Paris map showing system A**

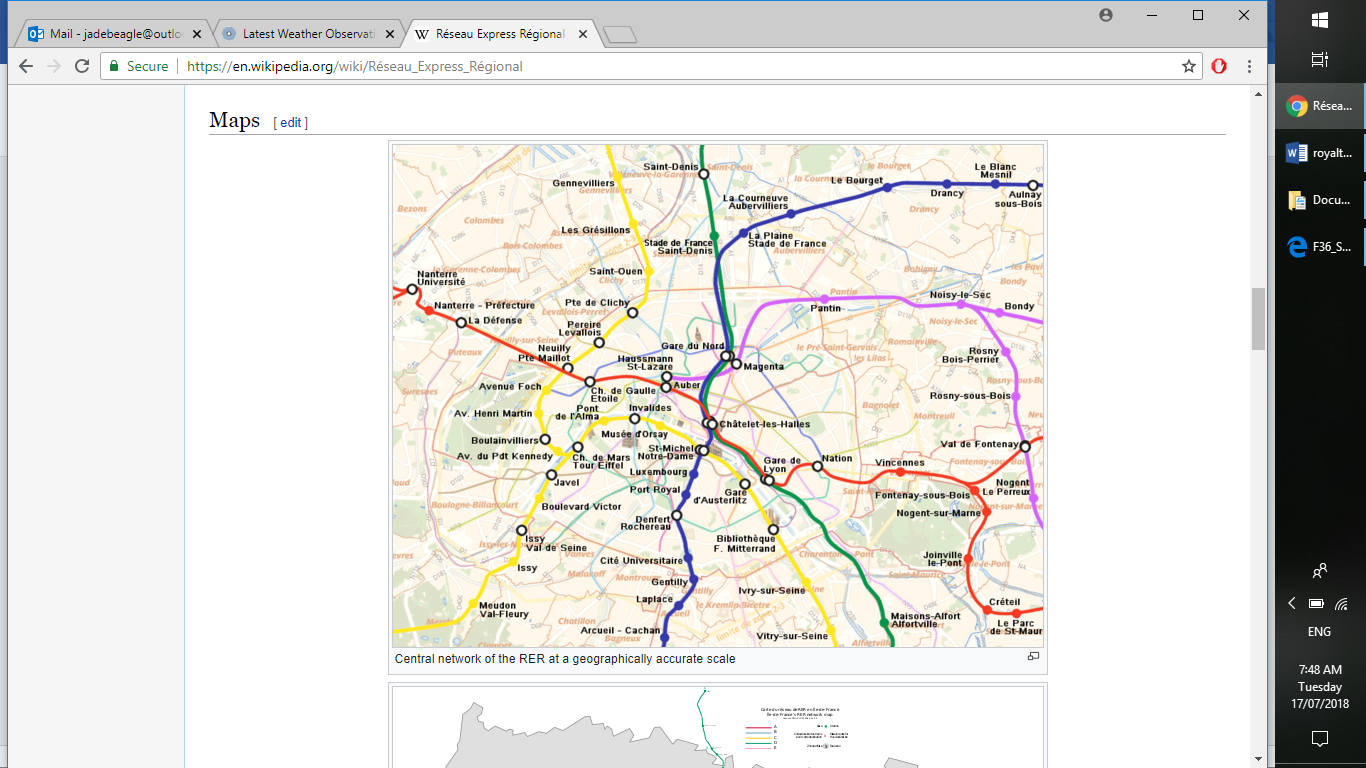


Figure 13 shows how Sydney Metro compares.

**Figure 13: Truth in labelling – Metro[[54]](#endnote-54)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Paris A** | **Sydney Metro** | **Paris B** |
| Average line length (km) | 123 | 66 | 15 |
| Average distance between stations (km) | 2.3 | 2.1-2.5\* | 0.6 |
| Line layout | Through city to suburbs | Through city to suburbs | Within city |
| Max. train frequency per line (per hour) | 30 | 30 | >30 |
| Max. passengers per line per hour | >55,000 | 46,000? |  |
| Journey speeds | Commuter rail | Commuter rail | Slow |
| Tunnel diameter | 6.3m single to 8.7m double. | 6.0m single. | Too narrow for mainline trains. |

\* Excluding Bankstown line stations

A is Paris RER. B is the Paris Metro.

It looks as if Sydney Metro is based on an RER type railway.

But Sydney Metro has a very important difference from the real RER. RER’s (actual) 55,000 passengers per line per hour is attributable to the use of double-decks. Yet the last line in Figure 12 – tunnel size – shows Sydney Metro precludes this.

There is some history in Wiki about the creation of the Paris Metro:

*‘the city's concern about national interference in its urban rail system. The city commissioned renowned engineer*[*Jean-Baptiste Berlier*](https://en.wikipedia.org/wiki/Jean-Baptiste_Berlier)*……*

*Berlier recommended a special*[*track gauge*](https://en.wikipedia.org/wiki/Track_gauge)*of 1,300 mm (4 ft 3 3⁄16 in) (versus the*[*standard gauge*](https://en.wikipedia.org/wiki/Standard_gauge)*of 1,435 mm or 4 ft 8 1⁄2 in) to protect the system from national takeover……The issue was finally settled when the Minister of Public Works begrudgingly recognized the city's right to build a local system on 22 November 1895, and by the city's secret designing of the trains and tunnels to be too narrow for main-line trains, while adopting standard gauge as a compromise with the state.’[[55]](#endnote-55)*

By the 1960s Metro - RAPT - was becoming overcrowded. To alleviate this the French Government considered extending its railway - SNCF- through Paris, rather than terminating trains near the city.

The main problem was whether operators as different as RAPT and SNCF could run mixed traffic, a problem originating in the 1895 decision Metro to have small Metro tunnels:

*‘Might trains of RAPT and SNCF one day use the same tunnel and would it be feasible to interconnect their networks?*

*A committee visited Japan to confirm .. the feasibility of through operations of different operators in the same tunnels…’[[56]](#endnote-56)*

Japan? Rapid transit tunnels through Tokyo big enough to take mainline trains? And take different trains from multiple operators? Like some through New York and Boston?

The French nearly 60 years ago decided to build big tunnels:

*‘RER's tunnels have unusually large cross-sections. This is due to a 1961 decision to build according to a standard set by the*[*Union Internationale des Chemins de Fer*](https://en.wikipedia.org/wiki/Union_Internationale_des_Chemins_de_Fer)*, with space for overhead*[*catenary*](https://en.wikipedia.org/wiki/Overhead_lines)*power supply to trains.’*

Just like Cross Rail in the UK is now doing – its tunnels are larger than those of the original Tube.

Since then RER has been migrating to a double-deck fleet enabled by the big tunnels. It is moving towards Train Magic and even higher capacities per line than noted here; reportedly up to 1860 seated (!) passengers per train, at least 72,000 passengers per hour.[[57]](#endnote-57)

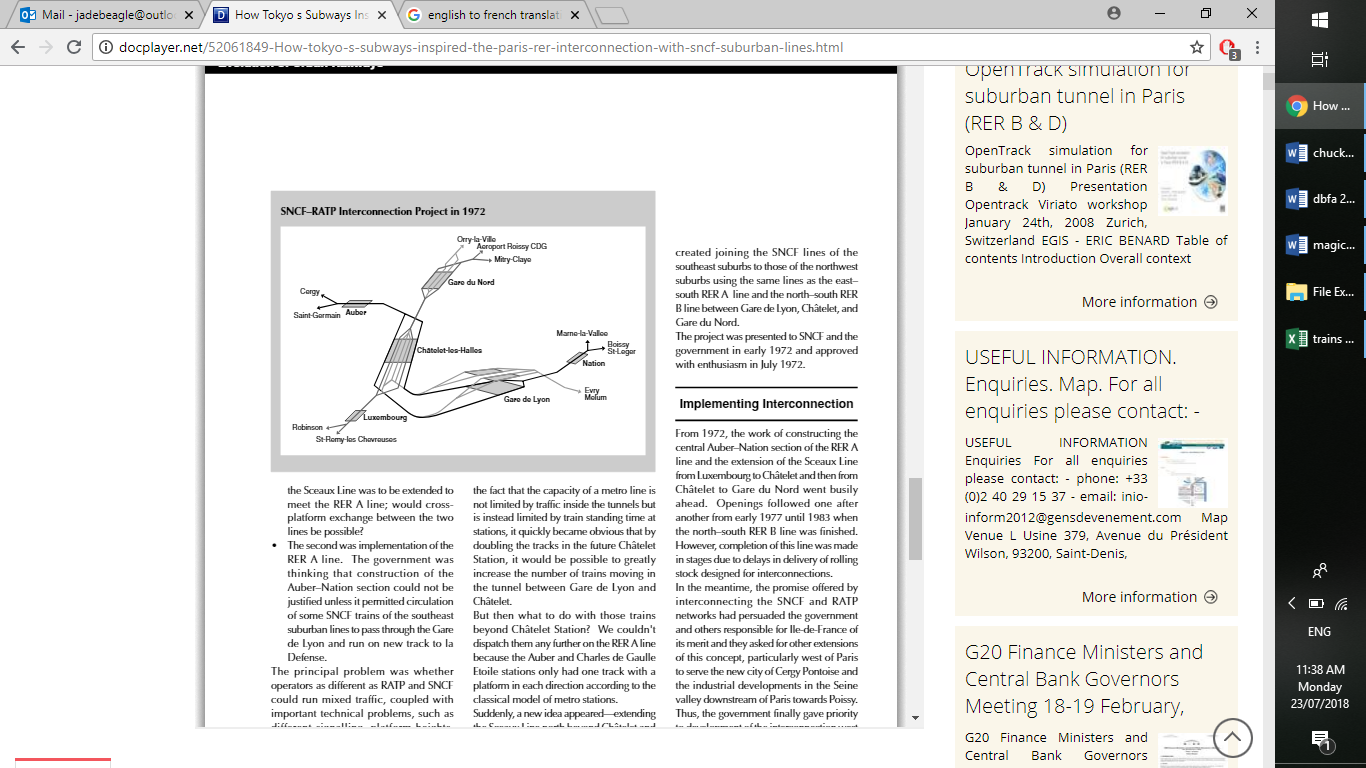
Practically the only thing Sydney Metro has in common with Paris Metro – other than the name - is replication of their decision 123 years ago, subsequently reversed in Paris practice roughly 60 years ago, to have small tunnels that preclude efficient fleet. The result in Sydney is Metro having lower capacity less than the adjacent Sydney Trains commuter system.

But what about dwell-time? The discussion in section 4.3 referred to station platforms, not just stations. As the French put it:

*‘the fact that the capacity of a metro line is not limited by traffic inside the tunnels but is instead limited by train standing time at stations, it quickly became obvious that by doubling the tracks in the future Châtelet Station, it would be possible to greatly increase the number of trains moving in the tunnel.’[[58]](#endnote-58)*

Not obvious to all. Un petite diagramme?

**Figure 14: Un petite diagramme**



There seems to be one last little difference between Paris and Sydney: significant changes to the Paris rail system are considered in public inquiries.[[59]](#endnote-59)

### 4.9 Less than magical properties

The ETCS system may not be fully compatible with the Australian Rail Track Corporation’s automatic train control system, or with other trains that use some main Sydney Trains lines – like freight trains to Brisbane, Port Botany or Port Kembla. That would be a very, very big new problem for Australia, not just Sydney as many – maybe even most – interstate freight trains are affected by Sydney transits.

## 5. Magical assessments

### 5.1 Magical assessments – Infrastructure NSW

First, Infrastructure NSW and its October 2012 *State Infrastructure Strategy*. This is:

*‘…. central to Infrastructure NSW’s purpose as it provides the Government with independent advice on the infrastructure needs of the State.’*

The *Strategy* said:

*‘the passenger rail system will have three tiers: rapid transit, suburban and intercity. The North West Rail Link (NWRL) will introduce the rapid transit model to Sydney.’*

It endorsed Transport for NSW’s new idea of a three-tier railway.

Well maybe not so new. Despite then Transport Minister Berejiklian’s claim in 2012 Sydney already had a three-tier railway; local, express and inter-urban services. Short, medium and longer distance urban services. This can be seen in the three track pairs Strathfield-near Redfern. The medium and longer distance services skipping some stations in inner areas.

Infrastructure NSW was not talking about a three-tiered railway. It was talking about two different railways separated by gauge. A separation more permanent than the 19th century folly of different track widths - by tunnels 20km or longer.

The ‘plan’ initiated in 2012 is not for one rail network – or passenger rail system - with three tiers. It is for several rail networks – several different systems - separated by gauge breaks. At last count there will be at least four: freight, Sydney Metro, (at least) another Metro in Western Sydney and Sydney Trains. And Sydney Trains will continue to have three tiers!

Metro, because it involves a break of gauge, is an independent transit system.

Or did Infrastructure NSW not understand that in 2012?

Perhaps not. Because it failed to spot the other obvious flaw in the proposed ‘three tiers’ – irrationality. Two of the tiers – suburban and intercity – refer to locations. The other – rapid transit – refers to a particular technology.

The appropriate and logical tiers would be either:

* Rapid transit / Commuter rail / Higher speed rail

Or

* City / Suburban / Intercity.

In any event, Metro is not a typical rapid transit system like Paris Metro. It is more a commuter railway operating in suburbs and the city - like Paris RER. However, unlike commuter railways it lacks seats.

**Figure 15:** **Is Sydney Metro a Metro/rapid transit system?**

Section 4.8 considered which of the two Parisian systems Sydney Metro was more like. The section concluded it was more like the Paris commuter railway RER than the Paris Metro due to: line length; distance between stations; location; line layout; train frequency; journey speeds; purpose.

In addition to those aspects other factors demonstrates its purpose to be commuting rather than rapid transit:

* It is taking over two commuter lines in Sydney’s suburbs;
* It is seeking to compete with Sydney Trains on transit time, especially in inner areas;
* Transit time in those inner areas is lowered by fewer stations; between Chatswood and Sydenham (including the CBD)
* Less than half the stations of Sydney Trains – 5 compared with 12;
* Transit time for some Sydney Trains in those inner areas is to be increased;
* New stations are significantly further apart than - around 1km or 62% - the existing older stations;
* There is no significant difference in distances between outer and inner suburb stations;
* Peak train frequency – at 15 per hour – is less than some areas of Sydney Trains;
* There is to be a substantial reduction in off-peak trains to 6 per hour.[[60]](#endnote-60)

The only characteristic of a rapid transit system it has is few seats in single deck cars.

If Infrastructure NSW understood the difference between commuter and rapid transit railways it didn’t let on in the *State Infrastructure Strategy*. The *Strategy* said Infrastructure NSW:

*‘considered what other options may exist to bring the benefits of rapid transit to more customers, sooner and at lower cost.’*

That reads like: ‘Sydney is to have a Metro – let’s look for a place to put it’.

Infrastructure NSW’s experts, who liked the idea of rapid transit, gave some blunt warnings e.g.:

*‘we see this desire to plan and construct large rail projects as problematic, since……The technical, financial and operating risks associated with these larger schemes are yet to be fully understood but have, until recently, been pursued as an immediate priority.’*

That is: engineering – technical and operational risks of big schemes, with Metro by far the biggest – had not been adequately addressed by April 2012 – two months before *Sydney’s Rail Future*. In this context the following comment from the experts should have been met with some alarm:

*‘Investments tend to form a package of indivisible solutions that must be brought forward in a pipeline rather than a pool of flexible solutions that can be brought forward as necessary.’*

Did the experts perceive an intention of a particular scheme to impede flexibility?

The content of these expert cautions does not appear to have been fully reflected in the *State Infrastructure Strategy*. Infrastructure NSW accepted introduction of rapid transit:

*‘Sydney’s rail system has developed as a single entity, without the tiered network of infrastructure of many world cities. It lacks a second level of rail network - the equivalent of the New York Subway, the Paris RER and Metro, or the London Underground; It fails to provide interchange possibilities that give a network flexibility and convenience for passengers and operational robustness.’*

This statement is curious for a number of reasons. First, it is essentially that a city cannot be considered world class unless it has a rapid transit train.

Second, it belies Infrastructure NSW’s misunderstanding of the difference between railway service tiers and infrastructure.

Third, it refers to passenger interchange as adding to network flexibility. This is wrong. Network flexibility and robustness is a function of design and train operating plans. The only way interchange could increase flexibility is for multiple routes between places – as recommended by Infrastructure NSW’s experts for introduction of rapid transit; Hornsby to CBD via Chatswood or Epping.

Fourth, to demonstrate its idea of a ‘second tier’ Infrastructure NSW refers to the two Paris tiers - Metro and RER – the latter is not a rapid transit system.

More important than these is failure to understand Metro’s break of gauge - ‘independence’.

Did Infrastructure NSW believe the following and assume there was no proposed break-of gauge?

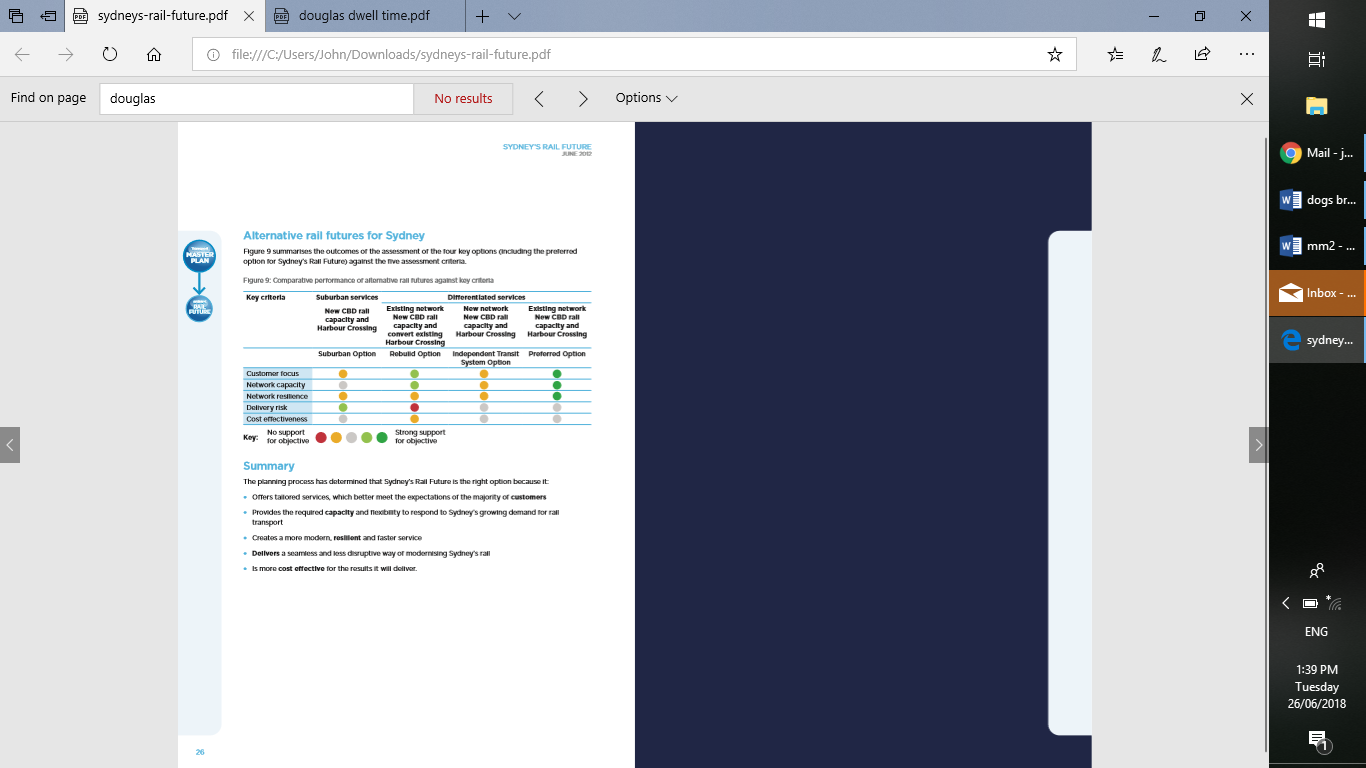
*‘Delivery of a dedicated metro system, independent from the existing Sydney rail network, including a new Harbour Crossing and CBD line.*

*• The Independent Option would deliver the benefits of rapid transit services to customers only on new lines. It does not deliver significant benefits to the wider rail network.*

*• In the Sydney context an independent metro system would deliver few benefits in terms of service enhancement, capacity improvements or better operating efficiency on the existing rail network. A dedicated metro-style system would not maximise the use of the existing rail assets. It would create a separate system that would divert funding away from service improvements on the existing rail network and only provide benefits to customers who use the new lines.’[[61]](#endnote-61)*

Perhaps it looked at the Government’s ‘assessment table’ shown in Figure 16.

**Figure 16: *Sydney’s Rail Future* assessment table**



The independent transit system option doesn’t fare well - even on the strange key criteria supposedly used by the Government. Together with sure knowledge Infrastructure NSW was aware of the notoriety of the break of gauge issue in Australia - and of Mr Christie’s warning which we will get to – this would reinforce an assumption that a break of gauge was not proposed.

Moreover, in such circumstances if a matter as serious as a break of gauge was proposed, presumably someone would say something about it or at least tell Infrastructure NSW?

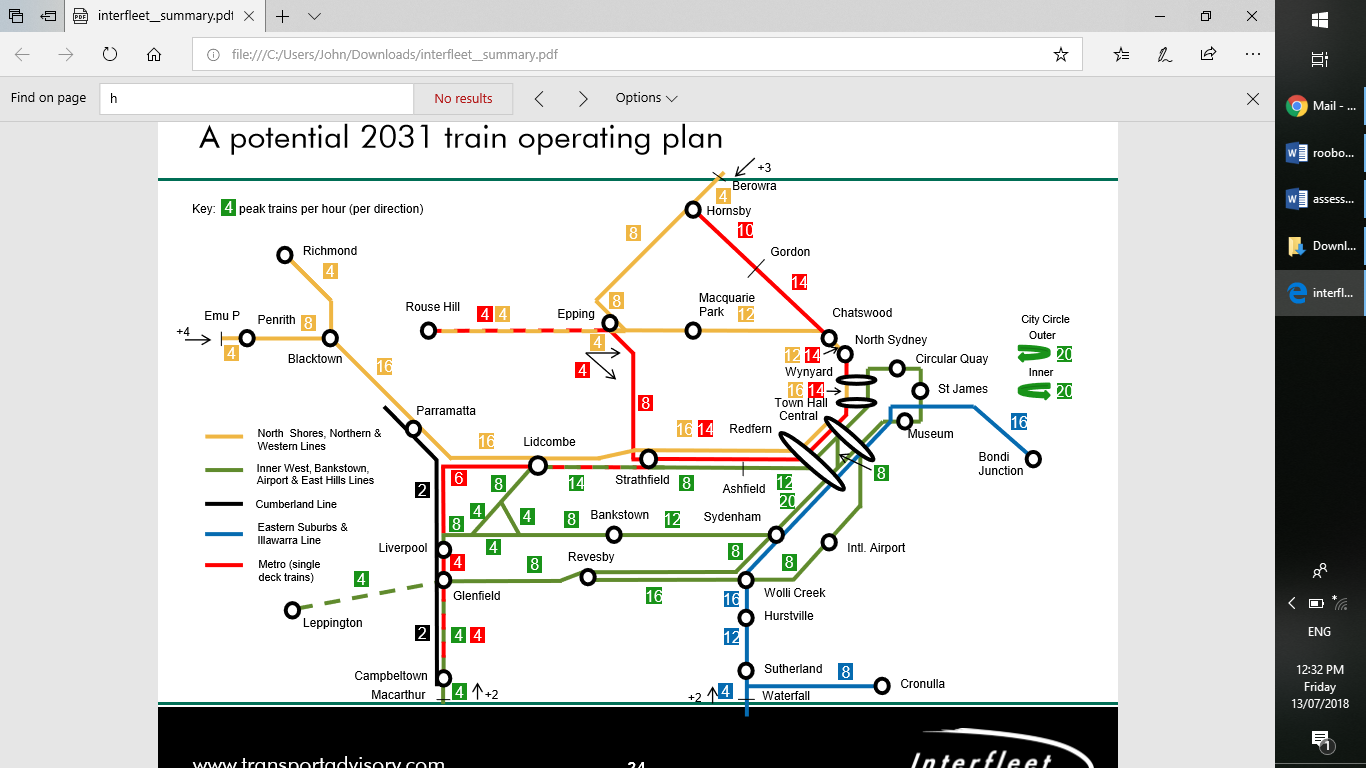
What did Infrastructure NSW do to assess the proposals of Transport for NSW? It hired an expert who came up a plan - Figure 17.

Four features are worth comment.

First, where is the Western Sydney Airport? Nowhere. This is consistent with the Government’s and (then) Transport Minister’s opposition to a second Sydney airport at the time.[[62]](#endnote-62)

Second, the rapid transit route to the left (south/west) of Central is not to Bankstown but through Strathfield.

**Figure 17: Infrastructure NSW expert indicative view**



Third, the rapid transit route above (north) of Central goes to Hornsby; 19 stations in around 24km. It also goes west of Central with a similar number of stations in a similar distance. Compare the Metro route which has 10 stations in a similar distance. Infrastructure NSW’s experts clearly understood the difference between rapid transit and commuter rail – and suggested more appropriate places for introduction of rapid transit than those chosen.

Four, rapid transit segments for example Rouse Hill-Epping have single and double-deck trains on the same lines. Infrastructure NSW’s expert was unaware of the intention to have small Metro tunnels. That is, as per *Sydney’s Rail Future*, Infrastructure NSW’s expert was of the view rapid transit would not be independent of the Sydney Trains system.

### 5.2 An interlude – on Metro break of gauge / independence

Metro’s small tunnels create the first real break of gauge in Sydney’s history.

The colonial break of gauge is Australia’s transport shame. John Bradfield sought to ensure there was no break of gauge in Sydney.[[63]](#endnote-63)

For those not so historically minded – Sydney’s most respected railwayman, the man they recalled to save the Olympic Games – issued this warning in 2010:

*‘the last thing we need is a 21st century version of different gauges.’[[64]](#endnote-64)*

This comes from a report of an independent public inquiry into public transport in Sydney – 2010 for the Sydney Morning Herald. The inquiry and report appear to be quite concerned about the then shenanigans and distortions associated with the Labor version of Sydney Metro – introduced while Mr Iemma was Premier and Mr Costa Transport Services Minister/Infrastructure Minister/Treasurer, modified under Premier Rees – famously depicted on 4 Corners.[[65]](#endnote-65)

Until canned by the next Premier Keneally in 2010. Just before Mr Christie’s report.[[66]](#endnote-66)

Canned, as foretold by then opposition transport spokesperson Ms Berejiklian, who called the (then) metros ‘doomed’. Reported in an article which also alleged:

*‘bureaucrats and political fixers inside the state's transport agencies altered official reports as part of a widespread government effort to suppress criticism of the controversial $5.3 billion CBD Metro.’*[[67]](#endnote-67)

Ms Berejiklian, with then Opposition leader Mr O’Farrell, later promised a North West Rail Link that basically couldn’t work. On becoming Transport Minister, she reiterated it would be part of the existing Sydney Trains system. Before changing her mind to – ‘make mine metro’.

The pre-2011 Labor period shenanigans included a few secrets. Such as Metro possibly wrecking the future of Sydney Trains (then CityRail) by taking a peculiar route through the CBD. A route looking like the one the current Metro is taking. No talk of tunnel sizes – but Mr Christie’s reference to break of gauge means he thought something was up.[[68]](#endnote-68)

Another little thing in fine print was an idea to turn back trains from Western Sydney at Central – so the CBD Metro might be used.[[69]](#endnote-69)

Is it a sense of shame about such seeming subterfuge that prevents people – Governments, advisers, even ‘independent’ reviewers like Infrastructure NSW and Infrastructure Australia – to not mention Christie’s report? No matter, it was conducted in public and lives in the public domain.

The current situation has some …… history. And the author gathers a little sensitivity too – given attempts to challenge facts at Wikipedia.[[70]](#endnote-70)

### 5.3 Back to Infrastructure NSW 2012

None of this little interlude is referred to by Infrastructure NSW.

Perhaps it was overlooked? Just like the possibility of *‘using technology that is proven in service overseas’* for the Sydney Trains system?

Or can only Metro use such technology?

In later years Infrastructure NSW gave an answer contradicting the implicit assumption made in 2012. In fact, there is a good probability of contradiction in its 2012 Strategy – since the above map has Train Magic-fitted Metro trains on the same lines as Sydney Trains. Indeed, section 4.3 showed Infrastructure NSW’s experts recommended fitment of Train Magic to Sydney Trains to boost trains per hour to well beyond the 20 ‘limit’.

### 5.4 Infrastructure NSW – 2014 update

Infrastructure NSW updated the *State Infrastructure Strategy* in 2014. The update said:

*‘Sydney Rapid Transit …. has strategic merit.’ [[71]](#endnote-71)*

The 2014 update recommended:

*‘Sydney Rapid Transit extending from Chatswood to the CBD via a second Harbour rail crossing and out to Bankstown.’*

It claimed the significant issues:

*‘relate to the precise timing and sequencing of the project, the rate at which peak period demand will increase and the ability of lower cost measures to spread demand or otherwise mitigate these impacts.’*

It did not provide a reason for changing its proposal for extension to Strathfield, other than the Premier had identified the Bankstown route.

It did suggest some ‘incremental’ - i.e. straw-man – alternative options were considered by Transport for NSW. There was no mention of consideration of options by Infrastructure NSW. Indeed, it implicitly relied on Transport NSW’s assessment by careful wording:

*‘Transport for NSW’s assessment of alternative, incremental improvement options is that alternatives to SRT (Metro) would be costly relative to the marginal additional capacity provided.’*

Source references in the 2014 *Strategy* refer only to Transport for NSW or associated statistical data.

As for 2012, the only suggestion of an assessment by Infrastructure NSW is of demand forecasts i.e.:

*‘Infrastructure NSW has viewed the rail demand forecasts and, on balance, considers them reasonable.’*

It appears this was based only on consideration of a ‘business case’ document supplied by Transport for NSW. This document is not publicly available. A later business case that became public - ‘considered’ by Infrastructure Australia - included no relevant options, and there was no qualitative or quantitative assessment of the irrelevant options proposed. Apparently, a decision to go ahead had been made before the business case was completed.[[72]](#endnote-72)

Was Infrastructure NSW still unaware of the gauge break / tunnel size issue in 2014? There were widespread reports that break of gauge was a major issue.[[73]](#endnote-73)

Did it not consider break of gauge to be a strategic issue? How could it form any view about ‘strategic merit’ without knowing and commenting on this? Then again, its failure to understand what rapid transit is and is supposed to do might not make this entirely surprising.

The 2014 update did venture:

*‘there is potential for the rail transit network to be extended to parts of the metropolitan area currently underserved by rail and further into key growth centres (such as the South West Growth Centre and the North West Growth Centre).’*

A word for this is: ‘cute’. As in ‘cute wording’. Are readers supposed to notice the difference between a rail transit network and a rapid transit network? Perhaps. For then there was this:

*‘North West Rail Link extension to St Marys/Mt Druitt via Marsden Park*

*South West Rail Link extension to St Marys via Second Sydney Airport and from Bringelly to Macarthur via Narellan.’*

The North West Rail Link is not usable by Sydney Trains. It has small tunnels.

The South West Rail Link is usable by Sydney Trains. Is this usability to be extended through the Western Sydney Airport? And what is to happen at St Mary’s?

The statement is significant for another reason: it admits to a second Sydney Airport (at Badgerys Creek). Yet the *Strategy* does not make the obvious connection; the Metro extension proposed by Infrastructure NSW two years earlier to Strathfield and towards that airport makes a lot more sense than an extension to Bankstown.

### 5.5 Infrastructure NSW 2018 update

Infrastructure NSW published a further update of the *Strategy* in March 2018.[[74]](#endnote-74)

Apparently again solely reliant on Transport for NSW, Infrastructure NSW made no mention of the gauge break etc. issues. Almost – it touched on these issues indirectly and revealingly.

The 2018 *Strategy* referred to a ‘SmartRail’ program from Transport for NSW as:

*‘a series of network-wide investments that will deliver additional capacity, reduce the complexity of rail operations and better connect the network. SmartRail will transform the rail network by utilising world-class technology to enable automated high-capacity turn-up-and-go services.’*

It seems safe to assume SmartRail refers to Train Magic - the touchpaper for this entire episode. Infrastructure NSW’s misunderstanding of rail becomes apparent in its commentary.

Train Magic – such as ETCS-2 - is incapable of reducing the complexity of rail operations. Complexity can only be reduced by changing operating plans – the timetable e.g:

*‘Best of all was universal agreement and great media exposition of the culprit – a fiendishly complicated, ‘tangled’, Sydney Trains network. Which would be all good if true, but it isn’t so it isn’t. And neither thinking nor public relations makes it so.*

*None in the press twigged that the pattern of operating trains across a network is the timetable. The network isn’t tangled! Rather the timetable tangled trains on the network – which is all too predictable being written by those without responsibility for the network or its operation.’[[75]](#endnote-75)*

It is questionable whether the ETCS-2 version of Train Magic will deliver additional capacity. ETCS-2 does deliver more capacity than ETCS-1. However, ETCS-1 has lower capacity than a non ETCS system – that is its safety feature.

Turn-up-and-go services are not a function of technology or service frequency but of a single operating plan for – a single stopping pattern for trains from - each station/platform. Which means the following from 2012 is a mistake:

*‘Recommendation Infrastructure NSW recommends that Sydney Trains operate an express train service between the CBD and Parramatta across the day, with a turn-up-and-go frequency level.’*

It also is an admission that turn-up-and-go service levels are not a function of Metro but of timetables – it is possible for Sydney Trains to operate such services.

If Infrastructure NSW really meant to say there should be more frequent services it is implying a lower efficient level of capacity per service; more trains meaning fewer people per train and therefore smaller trains.

What NSW actually proposed for most of the time - off-peak - is ‘turn-up-and-wait’. For up to 10 minutes – apparently missed by Infrastructure NSW.

Infrastructure NSW continued:

*‘Stage 3 would complete the reconfiguration of the network in central Sydney, deploying automation and providing the transformative programs needed to separate inner urban and intercity services on the T1 Western and Northern line and the T4 Eastern Suburbs and Illawarra line.’*

This reveals a grave error. It confuses an operating plan – a timetable for infrastructure use – with infrastructure. The mistake was compounded by further observation:

*‘deliver significant customer benefits by transforming the network into a more efficient and reliable rail system that allows more trains to run per hour in peak times and helps separate longer distance intercity, suburban and freight services from suburban operations.’*

Train Magic does not lead to a more reliable rail system. A fully automated rail system may be less reliable than a less than fully automated one. A big issue is what occurs in the event of a system failure – an ‘incident’ in railway parlance. In the present railway, manual interventions – e.g. by drivers – keep the system going albeit more slowly - at a degraded state. In a railway without drivers what is to happen? Is there a lesson from the following apocryphal technology anecdote in blue.

**Figure 18: Apocryphal technology anecdote in blue**

There has long been tension between management and workers in NSW railways. When the opportunity for a ‘get square’ presents itself – why not use it.

New technology is a preferred opportunity for management. In the early 1990s ticketing presented itself as a battleground on which to smite the real foe – the enemy within…….

Magnetic stripe tickets from vending machines and checked by automatic gates were to replace many station staff. The practice of people going to a railway station to get a ticket needed to be preserved, just the staff could be dispensed with.

The tickets, vending machines and gates were introduced to a fairly short line near the city. Soon there was an apparent boom in senior citizen etc. train travel.

The boom in concession ticket sales was accompanied by a remarkably similar reduction in full-price ticket sales. Due, apparently, to the vending machines neither being able to ask prospective purchasers about their concession entitlements nor being able to detect the touch of the senior on machine buttons.

In a light bulb moment in (then) State Rail: put an orange light on the automatic gates. If a concession ticket is used the light will shine. An idea that stood the test of time – they still can be seen today!

But as they say: if a tree falls in the forest……

Who from State Rail will be there to see the orange light illuminate? Oh, we will have to rehire the people we just sacked…….

Infrastructure NSW’s assertion of customer benefits being related only to train frequency rather than normal measures, such as seats, is also wrong.[[76]](#endnote-76)

The 2018 update to the *Strategy* continues:

*‘SmartRail will allow the independent operation of rail lines across the system, improving the capacity, frequency and reliability of the network and permitting the conversion of lines to provide high-frequency all-day services in the future, with the T4 Illawarra Line as the top priority for transformation.’*

The claims of fact in this are completely mistaken. Nonetheless, this implies a technological capability of high frequency etc. without further conversion. That is, Metro is unnecessary. If so, Metro is about single-deck trains instead of double-deck trains.[[77]](#endnote-77)

Then:

*‘Sydney Metro is at the heart of the Government’s agenda for the rail system. New links being procured and built, including Sydney Metro North West and Sydney Metro City & South West, will increase coverage of 30-minute rail catchments across Sydney and provide high frequency connections between the three cities.’*

Wrong. Creation of ’30-minute rail catchments’ is not a proper objective of a rail system. It might be the type of thing to consider for road based public transport such as buses - it is much easier to change bus than train routes. Again the ‘reasoning’ behind the 30-minute catchment appears to rest on a fundamental misunderstanding of the difference between infrastructure and operations.[[78]](#endnote-78)

To conclude the survey of the 2018 *Strategy* update consider:

*‘The development of a sustainable and compact urban form in the Western Parkland City will ultimately require the provision of mass public transport services. Transport for NSW has identified the backbone of this network, involving a new north-south link between the North West Growth Area, T1 Western Line and the new Western Sydney Airport that will ultimately continue south to Campbelltown and beyond, as well as new links to Parramatta, and to Leppington.’*

Wrong. How will the incompatible rail lines – like those in the North West, or to the T1 – be linked?

To summarise, in 2018 Infrastructure NSW dished up a load of bad mistakes. It failed again to mention any of the real issues like Metro being an independent system and introducing rapid transit in the wrong place – the former contrary to its previous assumptions. It showed it has no understanding of the Western Sydney Airport. It apparently forgot its own work. It was totally reliant on Transport for NSW.

Its claim SmartRail allows independent operation of lines is equally a claim that infrastructure characteristics – such as small tunnels - are not necessary for such independence.

An implication: Infrastructure NSW views at least aspects of Metro to be mistaken.

### 5.6 Magical assessments – Infrastructure Australia

The author has already commented, extensively, on Infrastructure Australia’s public assessment of Sydney Metro. Not favourably, so there is no need to repeat it here – apart from the fact that Infrastructure Australia did not assess the full Metro or the ‘plan’ but just the extension from Chatswood south.[[79]](#endnote-79)

**Figure 19: Interesting anecdote in blue: an echo?**

Infrastructure Australia did not assess the NSW ‘plan’. It assessed only a half-project; the extension to the North West Metro – the City and South West Metro. This is like assessing only a left-hand rail. The inference yet to be rebutted is the extension only looks ok to the extent that the North West Metro is bad and provided tunnel diameters or CBD route are ignored…..[[80]](#endnote-80)

Was the current North West Metro ever assessed? There is nothing in the public domain but a former North West Metro proposal – down to Labor Premier Iemma in 2008 – was assessed.

There are reports the present North West Metro is basically the same as that of Mr Iemma’s time – ‘*uncannily in keeping with the vision’*, to be funded from electricity privatisation.

The old review might be worth a look - especially by those saying the frustrating thing is the ‘plan’ could have started in 2008.[[81]](#endnote-81)

Sadly, it seems to not be publicly available. Happily, some press reports about it are.

The review was of Sydney Transport conducted by a ‘*world-leading transport consultant’* Mr Jim Steer for the NSW Treasurer. At the time – July 30, 2008 – the press said it was not even provided to Parliament on request:

*‘In May, the report was missing from a box of documents provided to the NSW Parliament's upper house that had used legislation to "call for papers" on the project.’[[82]](#endnote-82)*

Then, as today, somehow the media got hold of a copy. The Sydney Morning Herald declared the Metro idea to be a ‘*disaster*’ told of in a ‘*buried*’ report that ‘*demolishes*’ the proposal with lines like (press report in *italics, review underlined*):

*"As it stands, it would seem that more harm than good would accrue to Sydney and its economy from proceeding with the project"*

*‘the Sydney Transport Review report says the planned 38-kilometre Euro-style subway … is too long to be viable as a metro, is predicated on a poor business case and will do little to alleviate the CityRail congestion crisis.’*

The review offered that more appropriate metro options would be radial lines of perhaps 15km in each direction from the CBD (below). It tackled some other doubts that can be heard to this day:

*"The journey times achievable by metro are acknowledged by [the centre] to be somewhat ambitious, with journey speeds of 62 kmh over the route"*   
*" [There is also] an assumption of a very high frequency - three-minute intervals throughout. It is acknowledged that this would not be achieved in practice over the whole length of the route … It is likely that these assumptions are leading to modelled estimates of transfer to metro over an unrealistically broad area, especially from car."*

It summed up:

*"In such circumstances, there would have to be good reasons not present in the appraisal work to date that create the case for proceeding to implementation."*

The Herald report which had Mr Iemma pushing ahead with the Metro proposal in spite of:

*‘it* [the review] *strongly criticised the proposal's inferior network planning, and warned that Mr Iemma's transport agenda might be leading Sydney in the wrong direction’.*

What of Transport Minister the Hon. John Watkins MP?

The Herald also had this:

*‘Crucially, the centre for transport planning and product development, the government agency responsible for the metro, recognised there were serious flaws.’*

But the flaws recognised by that centre were apparently limited to demand – usage. But it didn’t recognise Mr Steer’s much more serious issues of network planning or Sydney being led in the wrong direction.

And the *centre for transport planning* etc? Part of the Transport portfolio?

In 2005 Premier Iemma established an Infrastructure Development unit – a ‘*powerhouse at the centre of government’* - *‘reporting’* directly to him.*[[83]](#endnote-83)*

The rival Sydney newspaper, the Daily Telegraph, soon afterwards muddied the waters:

*‘The Iemma Government's transport supremo David Richmond has shafted plans for a high-speed rail link to western Sydney because it doesn't fit his dream of a European-style metro system.’[[84]](#endnote-84)*

Professor Richmond, like Mr Christie, is widely acknowledged to be one of the heroes in delivering the Sydney Olympic Games. He also was a chairman of the State Rail Authority – CityRail the predecessor to Sydney Trains.

His European-style metro dream? Is it related to the later – 2010 - exploration by Mr Christie’s inquiry of the different rail systems appropriate for European-style and Asian-style cities?

And what type of European system might have been in the dream? Presumably not Paris or London whose lines are much shorter, stations are much closer together and whose average train speeds are lower?

Indeed, people from those cities might soon be puzzled to see Sydney Metro operating single-deck services with few seats between what seem to be commuter stations while Sydney Trains’ double-decks with many seats operate at metro speeds between stations with metro and Tube style spacing.[[85]](#endnote-85)

A puzzle that could have been avoided if Infrastructure NSW’s 2012 advice was heeded.

Premier Iemma resigned in early September 2008. He was replaced by the Hon. Nathan Rees MP, who with Professor Richmond’s support, featured in *that* 4 Corners episode. His different Metro ideas – including a CBD Metro which would ‘need’ commuter trains to be terminated at Central, and which raised *that* query from Mr Christie – were proposed 7 weeks after taking office.[[86]](#endnote-86)

Three things need to be added to the earlier comments about Infrastructure Australia’s assessment.

First, the endorsement of the project – in the light of Train Magic being known, which would weaken or destroy the only public argument for Metro, ‘capacity’ - now looks even stranger.

Was there a duty to take care about information from proponent NSW, such care including testing whether there were reasonable alternatives to the proposal – of which application of Train Magic to Sydney Trains is one? Was there also a duty to check whether the proponent had provided proper information? This brings us to the second matter.

Infrastructure Australia was on notice about questionable information from State Governments about their favourite projects – including NSW and Metro.

What did it make of public reports – such as in part 3 - in which experts and others contradicted the NSW Government?

Mr Christie’s report should have been viewed as a warning about Metro information from NSW. Then there was the claim of alteration of official reports in a previous Metro episode. And – in Figure 18 - a report of a critical review not being given to Parliament. Even if not believed should these have made Infrastructure Australia alert?

Infrastructure Australia previously looked at Metro proposals including from the pre-2011 Labor administrations. An October 2008 episode is not easily forgotten – the tail end to the anecdote in Figure 18:

*‘Four Corners has been told that when no one could answer the simple question - "how much would it cost?" - an advisor was despatched back to the room where discussions with Infrastructure Australia were still going on. He asked "any idea what this will cost". The reply came back - "about 4 billion".*

*Later that afternoon the Premier issued a press release, the CBD metro would cost $4 billion. When they learned of the plan, some experts had concerns.’*

It is no surprise Infrastructure Australia’s first report to the Council of Australian Governments shortly afterwards was cautious about metro schemes. Its caution went well beyond not knowing the financial cost:

*‘significant developments have been made in the adoption of automated ‘metro’ style railways. ………..*

*The strategic policy choice facing Australian governments is whether, and under what circumstances, new urban rail systems should adopt such technologies. However, a move towards these technologies raises many issues. To avoid a repetition of the rail gauge problem from the nineteenth century, decisions on these matters need to be made with national input and intergovernmental collaboration.*

*……..However, even if a decision is taken to make such a strategic shift, the existing rail networks will be a fundamental part of Australia’s urban transport networks for decades to come.’* [[87]](#endnote-87)

A repetition of the gauge problem?

Caution continued in the 2009 report to the Council of Australian Governments:

*‘Whilst the metros are promising projects, particular issues, e.g. alignments, service patterns, and integration with surrounding development and other transport networks, need to be considered further in conjunction with the NSW Government…….’* [[88]](#endnote-88)

Alignments? Like a route to Bankstown? Or through the CBD like Mr Christie would soon have a big problem with?

Infrastructure Australia’s 2010 report to the Council of Australia Governments was more bullish. It said metro systems should be considered as initiatives in capital cities.[[89]](#endnote-89)

Its 2011 report referred to a potential harbour crossing and a trial of Automatic Train Operation (Train Magic) on a Sydney Trains line.[[90]](#endnote-90)

The 2011 report also said:

*‘It is disappointing that a number of projects have not moved to the right on the Infrastructure Priority List……*

*Infrastructure Australia has reflected on whether it is ‘setting the bar too high’. Our conclusion is ‘No’ based on the fact that:….*

*A number of projects not recommended as ‘Ready to Proceed’ have encountered significant difficulty (e.g. Sydney’s CBD Metro) as a result of the projects failing to clear basic hurdles.’*

The National Infrastructure Plan of 2013 - the year before Infrastructure Australia was ‘reformed’ to be ‘independent’ - offered the less cautious but still not ‘bar’-lowering:

*‘An efficient metro style public transport system across the metropolitan area is needed to provide mass transit between high density population centres and economic activity centres, …….. metro lines serving higher density development will need to be part of the city’s future.’*

Between high density areas? Preferably within them as Mr Steer suggested. Across the metropolitan area? But isn’t Sydney characterised as having low density areas at its metropolitan edge? Nonetheless the National Infrastructure Plan added:

*‘Sydney Harbour second crossing: Population and employment patterns mean that Sydney needs a second crossing of Sydney Harbour. A second crossing will address a major pinch point in the network and ensure that inner Sydney remains accessible to everyone, regardless of where people live. In planning for the project, thought will need to be given to whether and how such a link might also connect with Kingsford Smith Airport….*

*passengers will be travelling to and from locations in Sydney’s ‘global arc’ extending from the central business district, through North Sydney and Chatswood to the business parks in Sydney’s north-west.’[[91]](#endnote-91)*

A pinch point in the network? Presumably this means the Sydney Trains network. And thus, a city/harbour crossing for commuter trains? Like RER in Paris?

Also, store in mind for later the comments about keeping inner Sydney accessible to people regardless of where they live and the comment about Kingsford Smith Airport.

For now, know Infrastructure Australia by then had considered over a number of years, but never recommended, several Metro projects in Sydney. It was as if NSW was looking around for a place to put its idea of Metro, much as admitted by Infrastructure NSW and introduce-a-metro plan’ of Premiers Iemma and Rees. In Infrastructure Australia’s parlance: a solution looking for a problem.

The 2016 (second!) Australian Infrastructure Plan had this to say:

*‘Infrastructure should be tailored to each community’s particular needs, its demographics, and what is affordable. Not every community needs a metro-rail system or an extensive bus network, nor expects one. Understanding how service levels differ between fast-growing and slower growing regions, and between our most urbanised regions and remote communities, will help inform investment decisions. Currently, there is insufficient information to fully inform such decisions.’ [[92]](#endnote-92)*

Presumably meaning a rapid transit/metro system is not suitable everywhere. Perhaps not suitable to lower density metropolitan outskirts and thus ‘across’ a metropolitan area? Just like Mr Steer said in Figure 18 (above). No sign of ‘the bar’ being lowered here.

One point of this history – and of other matters in the public domain mentioned elsewhere - is Infrastructure Australia should have been ‘alert’ to the possibility of not receiving the whole truth about Metro from NSW.

Perhaps even alarmed given a previous case in which Infrastructure Australia was publicly told of deception by a State Government withholding important information. That case is the East-West link in Melbourne. In April 2014, Infrastructure Australia’s acting Chief Executive referred to that project as ‘*meritorious*’ etc. in April 2014.[[93]](#endnote-93)

The context, the need to make such a pronouncement, is not readily apparent. It may have something to do with political controversy – there was some debate about the project among parties vying for Government in the State election to be held in November that year.[[94]](#endnote-94)

It later emerged the Victoria Government had withheld the original business case from Infrastructure Australia. It included information that:

*‘may be used as a justification for not supporting the project.’*

One version of the business case, it is not clear (to the author) which, was later called *‘outright lies’ -* part of a contentious episode earning epithets such as *‘fraud on an epic scale’.*[[95]](#endnote-95)

The cost of the East West link ‘epic’ was $6.8bn, around 10% of projected outlays on Metro projects in Sydney (so far). If care was needed for the East-West Link what about Metro?

Moreover, it is not strictly possible to compare the East-West link with Metro estimated outlays endorsed by Infrastructure Australia, because the latter were ‘*pending*’ at the time of getting the green light.

Leaving that aside, there are new questions about Infrastructure Australia’s assessment – and not merely its acceptance that no relevant options were properly examined which, along with other matters, would seem to mean ‘the bar’ was lowered for the project.

For example, how might Infrastructure Australia’s support for what it called a *‘standalone’* system sit with the reference to former Transport Minister Berejiklian’s *Sydney’s Rail Futures* document which seemingly condemned such a scheme?[[96]](#endnote-96)

The ‘when’ Infrastructure Australia knew what – and what it should have known – are questions.

Its assessment was nearly five years after the first Infrastructure NSW *Strategy*. It was after ABC Fact Check and other public material which disputed or refuted the Government’s claims. And after Infrastructure NSW’s (expert’s) suggestions of a joint rapid transit/commuter system – like RER – extending to Strathfield.

It was after reports about break of gauge (tunnel) issues, reductions of access of Western Sydney residents to the city, the potential ability of Sydney Trains to use similar technology being known and the jade beagle’s extensive comments on strategic issues arising from Metro – including asking why the extension was to Bankstown rather than Kingsford Smith. All topics Infrastructure Australia had earlier brought to the attention of the Council of Australian Governments – as problems.

Then there are its claims of independence and expertise. Infrastructure Australia likes to be considered independent. Some might think its NSW namesake to be part of the NSW Government. Certainly, the namesake wasn’t the subject of Commonwealth trumpeting of its post-2014 reform to ‘independence’, membership including infrastructure experts and highly experienced engineers.[[97]](#endnote-97)

And then there is the question: why the rush? NSW claims its business case was completed over a year earlier.

Is the timing of Infrastructure Australia’s decision – the summary evaluation is dated 14 June 2017 - associated with NSW’s aim to let infrastructure construction contracts by mid-2017? According to reports contracts were let on 22 June?[[98]](#endnote-98)

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### 5.7 Magical assessments – Western Sydney rail Study

A brief recap: The Western Sydney Rail Scoping ‘Study’ published the most magical advice of all. [[99]](#endnote-99)

The Departments conducting the ’Study’ rejected the obvious scheme which would maximise benefits for the Commonwealth and Western Sydney. Instead they favoured a vastly more expensive ‘plan’ for the wrong railway in the wrong place cut off from the rest of the world - which would undermine the future of the new airport and ‘Aerotropolis’.

The only reason the author could glean is one of the most preposterous propositions ever heard; single and double-deck trains cannot use the same tracks. ‘Reasoning’ bearing some resemblance to the grave error made by Infrastructure NSW above.

Amid the ‘reasoning’ is a claim that Train Magic would (only) lead to lines with capacity of only 24 Sydney Trains per hour but 30 Metro trains – a claim discredited in the sections of part 3.[[100]](#endnote-100)

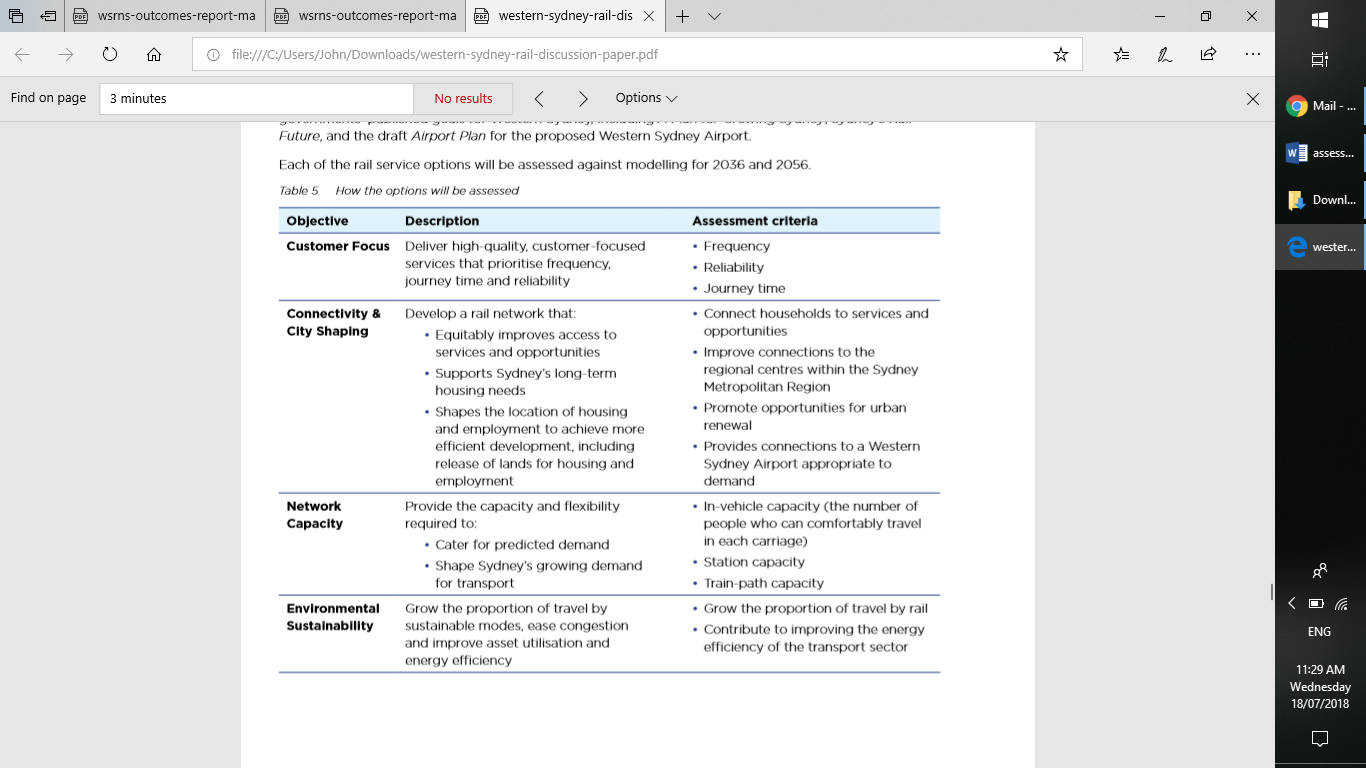
Even more strange is the ‘Study’ recommended the best potential line stop 7km short of the airport. The very line assumed by the Western Sydney Airport Environmental Impact Assessment to be the first rail connection – a connection to Sydney Trains. And there is an oddity in that Assessment too:

***‘Error! Reference source not found.*** *Broadly indicates how rail could approach the airport site.’* [[101]](#endnote-101)

Does it reflect highly respected Environmental Impact Assessment consultants not being told about how rail could approach the airport site despite their identifying an extension of the South West Rail Link and despite airport operations being ‘*reliant*’ on such a rail connection (in the longer term)?

And, almost of course, the $20billion ask for the ‘plan’ doesn’t have even the start of a semblance of a business case.

But what could be expected of a ‘Study’ that used criteria shown in Figure 19 below? A quick look shows how far off the mark these are.

**Figure 19: Criteria used in Western Sydney rail study**

First, transport influence over connectivity and city shaping in relation to Western Sydney is determined by train seating not by the factors shown.

Second, network capacity – to provide *‘capacity and flexibility’* – is not reflected in the criteria.

Flexibility depends on infrastructure interoperability, incident recovery and multiple routings. Any reasonable and competent assessment would have included these flexibility matters. However, such inclusion would embarrass NSW as e.g. small Metro tunnels and isolated lines preclude operational flexibility.

The outcome recommended in the ‘Outcomes’ paper has minimal flexibility, a result of deficient and biased criteria.

Other capacity criteria in Figure 19 are wrong. The criterion of in-vehicle capacity is simply wrong – the train load measure proposed is used to determine fleet acquisition. The criterion of train path capacity is incorrect – the correct measure combines lines and stations.

Finally, and most importantly, the key matter is customer focus because all other matters – except capacity – depend on attracting passengers. Yet the criteria for customer focus is limited to travel time - travel time being a function of frequency, speed and expectations of reliability.

Travel time is important, but so are other matters – most notably seating for journeys of over 20 minutes, such as between Western Sydney Airport and almost anywhere else. The criteria set out is inadequate and biased.

**Figure 20: Bolt in Blue – travel time**

Supposed savings in motorists travel times underpin – dominate – proposals to pump public money into roads.

There are questions about this not only because those savings often don’t happen, because the practice is theoretically inelegant, some of the claims are just bogus and because of the hypocrisy of not using the same technique for traffic calming and other measures to slow cars down.

Also, more basically, an expected permanent increase in speed will encourage some to live further away – if they spend the same time travelling they can go further. They have a travel time budget just as real and binding as any household money budget. The effect of an increase in public transport speed is to increase its catchment area ceteris paribus.

An increase in speed can occur in three ways; increased vehicle speed, increased predictability of service, increased service frequency. Each has strong and weak points. An increase in vehicle speed may mean fewer stops thereby decreasing the intermediate catchment. Increased predictability reduces the need for frequency. Frequency is subject to the law of diminishing returns.

Speed is very interesting to engineers and increasing vehicle speeds throws up fascinating engineering problems.

So pervasive are thoughts about speed other important service characteristics – and price – are forgotten. You can see this in the Western Sydney Scoping Study criteria – which is only about speed.

Transport researchers and academics, such as Douglas and Karpouzis, have looked at various service attributes and placed values on them in terms of speed – minutes of travel time.

Some ‘non-speed’ factors appear very significant. For example, for Sydney Trains in 2006 – some time ago – they concluded:

*‘a 30 minute stand* (time standing on board a train) *would add 38.7 minutes to the timetable time (1.29 x 30) to give a total generalised time of 68.7 minutes in equivalent uncrowded seating or timetable minutes.’[[102]](#endnote-102)*

Transport for NSW – one of the parties to the Western Sydney Rail study – knows this principle and of more recent estimates – its assessment guidelines have frequent citations of Douglas’ work for various NSW organisations.

This means people won’t travel for long on public transport if they need to stand-up. They will either go by car or not travel. In which case there is but one winner. Few seats on public transport would be a boon for owners of roads – including tollways – where parking at end points is not a big issue. Such as outside the inner city and CBD areas.

Even a primitive understanding of the above – of customers having interests beyond speed – would lead to realisation that people, especially those on short or optional journeys, prefer to look at scenery rather than travel in tunnels. Particularly scenery like the Harbour, the Bridge and the Opera House.

This would have led to a customer focussed Metro using the Harbour Bridge, with commuter trains – carrying those on longer less optional journeys – travelling in a new tunnel, where passengers would be reading newspapers, tablets etc. Avoiding the matter likely to puzzle people from European cities with real Metro systems. It would also have led to ensuring the harbour tunnel etc. could carry double-deck and single-deck trains.

The effect of the ‘Study’s’ advice – whether intended or not – is to temporarily hide from the public and perhaps the Prime Minister some of the possible worst effects of Metro. By ruling out any extension to the Sydney Trains system – without legitimate stated reason – the ‘Study’ did not have to address the question of whether such extension is rendered impractical by the Metro plan of small tunnels and perhaps taking the alignments needed in the CBD.

Unfortunately, the NSW Minister for Transport effectively resurrected the question. This was via his rejection of Mr Shorten’s offer of $3bn for Western Sydney Rail on the grounds of the (Western) line through Parramatta being ‘overwhelmed’.[[103]](#endnote-103)

### 5.8 Magic all round!

The Western Sydney Rail ‘Study’ doesn’t seem to be the first or only publication hiding the issues about Metro. Don’t bother looking for any of the real issues - like tunnel size, proper locations for rapid transit, break of gauge or others outlined above – in any of the above assessments. Rather, they all seem to merely transcribe the NSW Government’s superficial and lopsided Metro story – incredible as it is – and top this off with home-grown fundamental technical mistakes.

They cover-up important issues and facts. Whether this is intentional or accidental – a product of negligence - needs to be tested.

## 6. Dogs breakfast for all – on you

### 6.1 A royal doing over – by commission

The 19th century break of rail gauge was notoriously Australia’s greatest transport failure – it made the colonies a laughing stock.

Breaks among Australia’s rail gauges led to a Commonwealth Royal Commission in the 1920s - and later inquiries - about how to correct that aberration.[[104]](#endnote-104)

If reports about Train Magic are remotely true – if Metro is even arguably inferior to and/or blocks out alternatives - it is inevitable there will be a similarly empowered inquiry into how it came to be. Perhaps not now, but certainly at some time.

Then the matters raised in previous parts – a dog’s breakfast already - will be subject to a royal questioning.

Before that, let’s look at how the Minister for Transport, the Hon. Andrew Constance, MP, told us the rail policy kicked-off when his boss – the Premier – occupied his position, is royally doing over quite a number of targets. And Western Sydney as well.

### 6.2 A royal doing over – by omission

Context is Federal Opposition Leader Bill Shorten’s offer of $6bn for Sydney rail. Half is for a West Metro. The other half is for the (disgraceful) Western Sydney rail ‘plan’.

The NSW Minister’s reported response: we do not want money for Western Sydney rail because it would result in another part of the rail network – the line through Parramatta, Strathfield and the CBD - being ‘overwhelmed’.[[105]](#endnote-105)

‘Overwhelmed’ doesn’t mean a lack of resources to address the matter. It means too many people might catch trains between Western and eastern Sydney.

Is the Minister’s comment mere cover for political partisanship – he and the Federal Opposition Leader being of different parties? No. He and his boss delivered a better ready-made line – Labor never delivers. Given the ring of truth in this he could have stopped there. But he went on to say the State Government refuses $3bn for projects it identified. Which is unprecedented. And has profound implications.

Among the immediate implications: The Western Sydney Rail bit – part of the ‘plan’ started in 2012 - is intended to minimise ridership. Lest ‘the problem’ get even bigger.

Perhaps such an intention lies behind the Western Plan’s bizarre ideas such as at least three gauge-separated railways, services inappropriate for demand, the wrong line going to the airport and the best line to the airport stopping 7km short.

Perhaps such an intention also lies behind lies used to ‘justify’ these oddities such as: single and double-deck trains can’t use the same tracks; ‘customer focus’ which avoids customer needs; probable misrepresentation of feedback.[[106]](#endnote-106)

Perhaps this is why the ‘Study’ divided Sydney into two, with different colour arrows. To show public transport should not operate as a network?

Perhaps such an intention also lies behind the failure to identify ‘the problem’ lest it lead back to questions about Metro, small tunnels, city route and Bankstown – about the ‘plan’.

Another immediate implication of the Minister’s comments is the ‘three cities’ of Sydney policy - which contradicts the transport plan, is not based on any proper principle and doesn’t posit ‘three cities’ at all - seems a con job.

The problem worrying the Minister so is people from Western Sydney using infrastructure and services in the ‘River’ and ‘Harbour’ cities.[[107]](#endnote-107)

The ‘three cities’ policy is not to be pursued by jobs etc. close to home – in any event State Governments have little influence on jobs. Rather, the Minister’s comment means policy is to be furthered by something State Governments can do – affect metropolitan travel – in this case to make it difficult to get to jobs etc. further from home. And by undermining jobs in Western Sydney.

A third immediate implication of the Minister’s comments is of an unfolding disaster. What type of plan results in denial of a gift (from somebody else) to the most-needy - which is certainly what Western Sydney is transport wise? A plan with that, and the splitting of Sydney, as aims. An economic and social catastrophe no matter how well intentioned it might have been at the start.

The bottom line is the Government’s rail ‘plan’, misleadingly described by *Sydney’s Rail Futures,* was and remains fundamentally inconsistent with inclusion of Western Sydney and a Western Sydney Airport in the life of the metropolis. Even if the ‘plan’ is not designed to stop the airport it is having that type of effect.

The ‘plan’ has not been relevantly changed since 2012 or earlier. Its centrepiece – Metro - should have long been junked in line with advice from the experts.

Even if kept it should have been altered if the State Government wanted to support the new airport, ‘three cities’ jobs close to home etc. Instead - and contrary initial to statements of intention - the Government is cementing in the ‘plan’ e.g. by tunnels only big enough for Metro trains.

Similarly, a Government supportive of the Airport, ‘three cities’ – would have had the extension of the North West Metro towards the west, towards Parramatta rather than – in *Sydney’s Rail Futures* - to Bankstown. Then the Minister’s problem – lines through Parramatta being ‘*overwhelmed*’ – would not be a possibility. The option put to the NSW Government by its own ‘independent’ expert adviser, Infrastructure NSW, in its 2012 *State Infrastructure Strategy*. Then forgotten.

And at the very least – and important/inevitable for other reasons – a Government supportive of Western Sydney would ensure the CBD and Harbour rail tunnels were of an adequate size for other-than-metro-trains, which might be used some time in the next century.

As is the case in other big rail projects in cities like London - rather than aping the parochialism of the Paris local government in the late 1800s.[[108]](#endnote-108)

But what about Metro West? By allocating substantial harbour-crossing capacity to Bankstown instead of areas of greatest growth and demand, the ‘plan’ threatens its effectiveness too.

Nor can refuge be sought in the rail ‘plan’ now supposedly being based on ‘hub and spokes’ public transport. Hub and spokes are (increasingly) unusual for urban rail. Where used, trains tend to run along one spoke into the hub and out another spoke because of land cost. Figure 21.

**Figure 21: Side-track – a blunder from bus land?**

‘Hub and spokes’ are vehicle operating patterns. The claimed connection with the rail ‘plan’ means NSW is confusing a particular operating pattern with infrastructure configuration.

Comments about ‘turn-up-and-go’ - which mistake frequency for a single operating (stopping) pattern from each station - confirm this error is being made.

A fundamental aim for infrastructure – rail too - is an ability to support several vehicle operating patterns. This is the point of junctions, stations etc.

Ignorance of this principle is unforgivable but may be understandable for the transport portfolio whose history and practice is based in bus and taxi operations – which often use hub and spokes.

In this light the portfolio’s struggle to reintroduce light rail to Sydney - which once had the biggest tram network in the southern hemisphere – is ironic. The network was destroyed in the mid-20th century due to belief in ‘newer technology’ – buses. Bus and taxi backers no doubt rejoiced when tram tracks were ripped up.

The flawed ‘bus lens’ for advice and decision making in NSW transport is not new – nor is infatuation with ‘technology. You can see it at work every day – look at fares.

But before moving on, consider a particular claim which looks remarkably like ‘turn-up- and-go’:

*‘During the busiest part of the morning peak, the average wait ……. will generally be about 1-2 minutes.’*

It is from Transport for NSW. It is about inbound (towards the CBD) passengers at Chatswood station catching Sydney Trains. So, turn-up-and-go is not restricted to Metro. Nor is it new. It has been operating for many years on the Eastern Suburbs line between Martin Place and Bondi Junction.[[109]](#endnote-109)

### 6.3 Back to being royally done over

Back to the Minister’s comment – rejecting $3bn for Western Sydney because it might encourage pubic transport use – this is not a ‘negotiating’ stance to attempt to extract more funds from the Commonwealth since it rejects money.

The fact of the Minister’s comment being a reaction, rather than considered position, is also consistent with each new step of the rail plan springing an unanticipated disaster. What next?

On 9 July new clouds appeared in the form of the Independent Pricing and Regulatory Tribunal and fare rises on all public transport to cover some of the $66bn in Metro capital costs now being faced. That looks to presage an awfully big rise in maximum public transport fares.[[110]](#endnote-110)

No doubt the Government of the day will take the leaf out of former Premier the Hon. RJ Carr, MP’s book and claim to the public she/he is saving the day by overruling the Tribunal and setting fares well below the maximum.

Beyond these immediate effects are other implications. For one thing the Minister’s statement means there are monumental failures of judgement – affecting millions of people for generations – by the NSW Government starting in 2012 or earlier.

It also means there are real consequences arising from the failures of State and Commonwealth ‘independent’ infrastructure advisors – who accepted or supported the NSW Government position, engaged in verbal contortions and not mentioned the issues of greatest significance.

What for their much vaunted ‘governance’ and their Boards?[[111]](#endnote-111)

Other, less happy implications could be surmised.

Quite the result from a small comment!

### 6.4 The ‘plan’

Since the mid-1990s most have accepted Sydney’s existing rail system required big change to deal with two issues:

1. Growth in road traffic, particularly from newly developing suburbs in the metropolis; and
2. The likelihood the central areas of the network would be strangled by demand, notably from Western suburbs.

Any plan to deal with this comprises three almost universally agreed essential elements for rail:

* Automation;
* Line extensions, particularly to the North-West and South-West;
* A second harbour crossing.

The critical question has always been: in which order?

Ancillary elements have been considered important by some but not by others:

* Higher revenue;
* Greater control over costs, particularly recurrent costs;
* Greater technical efficiency;
* Separation of freight from passenger traffic;
* Simplification of operating patterns;
* Introduction of rapid transit.

External advice – usually management consulting - recommended revenue, recurrent cost control and technical efficiency measures precede the three essential elements.[[112]](#endnote-112)

**Figure 22: A reminisce in blue**

The 1996 organisational changes to NSW’s State Rail Authority were motivated in part by a view that smaller organisations would make cost control easier.

This proved true for separation of: freight from passenger traffic; metropolitan from regional tasks.

However, separation of passenger trains from infrastructure was technically inefficient in the metropolitan area. It led to more complicated operating patterns.

While there appeared to be greater exposure and NSW Treasury control of metropolitan rail costs, the ability of organisations to cost shift – without a proper dispute resolution process - led to a lower overall control of the system and substantial higher costs.

It also led to disputation among rail organisations – and Government departments. Two fields were:

* Operational matters e.g. timetables, claims/counter-claims of labour / managerial inefficiency;
* Struggles to ‘lead’ the ‘strategy, compounded by Government kudos to infrastructure builders.

One result: deferral of the essential elements. Another: kudos was sought via the others.

Technical inefficiency in the metropolitan area could not be addressed until reversal of one 1996 ‘reform’ – by reintegrating infrastructure and train operations in one entity. While the merit of reversal was clear soon after 1996, it would cause embarrassment and loss of (the illusion) of control by central agency departments. Yet reversal was inevitable and eventually formally occurred in 2003 under ‘conditions’.

In the lead up to the 2000 Olympic Games the Government agreed to de-facto integration – appointment of Co-ordinator General of Rail – Mr Christie. Given the success of the Olympics, the Government continued with a rail Co-ordinator General until formal reintegration.

In 2001 Mr Christie provided a report to the Government saying there were perhaps 10-15 years before the network became strangled and another harbour crossing would soon be needed. One implication being a harbour crossing was needed in advance of network extension.[[113]](#endnote-113)

However, it is reported the advice was unwelcome and the report suppressed. This contributed to delaying the essential elements of the strategy, which in the case of the north-west extension became a hot political issue.

Moreover, the weakening of departments’ influence over operations meant any continuation of inter-agency contests would be in ‘planning’, projects and ancillary elements – aided by avoiding the airing of the essential elements.

The longer such avoidance continued, the more likely political aspects of the strategy would advance ahead of others – because these could not be forever suppressed by bureaucratic means. The most important political element was a north-west extension.

However, such an extension would accelerate the need for a harbour crossing and automation. This could be dampened somewhat by another north-south route Epping to Parramatta, and by allowing the routing of new trains from the north-west to the CBD via both Strathfield and Chatswood.

The avoidance of accepting the three essential elements – automation, network extension, harbour crossing meant the question of ‘in which order’ – which demanded an answer – would be more subject to political-bureaucratic process with increasing risks of inadequate technical input.

An alternative view of the problem facing Sydney was put thus:

*First, the existing rail system was expensive to run….   MREP* (a Sydney Trains harbour crossing etc) *would lock in these inefficiencies.*

*Second, …. investment required to extend an all-purpose heavy rail system was beyond the state's means……*

*Third, while the need for additional extensions …. was clear- …. to work, any new rail project had to increase capacity in the CBD.[[114]](#endnote-114)*

In the mid-2000s the Premier’s Department was involved in rail planning. Its

*‘solution - supported by* (Premier) *Iemma and* (Transport Services Minister 2003-05, Infrastructure Minister 2005-08, Treasurer 2006-08) *Costa - was to sidestep the high costs and industrial risks of the existing RailCorp network and instead begin building a new rapid transit rail system in parallel. The new system would incorporate smaller, lighter rolling stock, reducing construction costs, and be operated by the private sector, reducing operating costs’.*

Only after the integration of rail policy and planning/project elements within a single department - in mid-2009 – would the three essential elements again become visible outside the railways. However, by that time considerable ‘investments’ had been made in advancing the other elements, notably metro, which had its own separate Authority.

The three essential elements of any plan can now be seen by the public. However, the sequence adopted, extension-automation-harbour crossing, is not optimal from a transport perspective.

Moreover, the sequence does not support the aims. The sequence does not address the source of the problem; demand particularly from Sydney’s west - even though that problem is larger than expected not least because of Western Sydney Airport. The Minister has attested to this by his ‘overwhelmed’ comment. Reasons for this failure are:

* The north-west extension – by Metro – does not allow routing of trains via Parramatta or Strathfield, thus creating increased pressure on the CBD and harbour;
* The new harbour crossing and CBD route is limited to rapid transit.

Before moving to a summary more recent public developments indicate the ‘plan’ has what some might politely call ‘differential elements’ for the treatment of the less well heeled – those on the Bankstown line. A final bit of blue to cover this off please!

**Figure 23: Final bit of blue – the lost chord**

The mystery of ‘why the Bankstown line’ remains to be solved. Was it an afterthought – when it was realised the flash new trains need to go somewhere south of the harbour? Who knows.

But Bankstown area locals remain agitated about what might be in store. So much so legal action is in train![[115]](#endnote-115)

They are not getting new stations. Rather their stations are to be ‘refurbished.’

In the documentation there is a small reference to mechanical gap fillers or some such thing.

Seen but once on Channel 7 news were metal grates that extend and retract from the platform edge to meet the new Metro trains.

Why are the gap fillers necessary?

Because there will be gaps! Between the platform and the train – more accurately the doors on the train.

Aren’t there gaps now?

Yes, but on Sydney Trains the doors are on top of the bogies where the gap with a concave platform is least.

One of Metro’s marvels is more doors – three sets per carriage side. The biggest gap comes into play.[[116]](#endnote-116)

It’s not a new problem and there is a solution.

Gap fillers are used on some stations in some systems overseas.

But a few pesky questions remain like: ‘will the gap fillers require extended dwell time such that 2-minute headways are no longer possible?’

Perhaps that is a needless blue comment as the promise is at most a train every 4 minutes on the Bankstown line. Presumably trains will be added somewhere between the (city) end of the Bankstown line and the CBD so the rather expensive harbour crossing can be used more intensely – say at levels approaching Sydney Trains current operations of a train every 3 minutes across the Harbour Bridge?

Can we assume the train operator is thrilled with this development?

Anyway, gap fillers are cheaper than rebuilding the stations and line.

Who said money is no object when you are out of the Hills area?

### 6.5 A summary?

The public continues to be bombarded with ‘positive’ stories about Metro.

There was a ‘successful’ trial of one of its driverless trains on the ‘skyrail’ bridge. Referred to by some as an ‘historic’ test and by the Minister as akin to the first cars crossing the Harbour Bridge.

Those with longer memories will recall the magic of the first driverless train thundering across Sydney skies – the monorail – thirty years ago almost to the day. A privately-operated turn-up-and-go service.[[117]](#endnote-117)

Matters raised in this article are more serious than that.

Metro is enormously consequential and threatens to divide Sydney via a transport system.

There is no public evidence decision makers or advisers – save for a few experts who were ignored:

* Understand this; or
* Have considered the issues with appropriate seriousness.

Instead what is available to the general public raises suspicions. The criteria on which Metro decisions were supposedly based e.g. passenger capacity per line:

* Are contradicted by Government policy statements, notably *Sydney’s Rail Future*;
* Are flawed at least for any use outside central city areas;
* Do not support any decision to introduce Metro. The public information indicates non-Metro options meet the criteria better and at almost certainly lower cost.

The public presentation of the criteria and decisions is false and misleading e.g.:

* The quoted capacity comparison between Sydney Trains and Metro is misleading;
* It uses wrong figures;
* The quoted level of Metro services and turn-up-and-go claims are misleading;
* There has been no presentation or explanation of the key issue of Metro tunnel size.

The public views of experts, including those engaged by NSW, have been ignored:

* In at least one case it is not clear the views were given to relevant decision makers;
* In another (earlier) case there were attempts to suppress these views.

Experts, and others, have:

* Queried the suburban locations of Metro – the North West and the Bankstown line;
* Suggested other options which were ignored;
* (Therefore) implicitly seen their role as finding a suitable place to put a Metro project.

The history of Labor-era Metro is worth noting e.g.:

* The present project being ‘uncannily’ similar to the North West Metro proposed by Labor;
* Failure to acknowledge alternatives, options or other opinions;
* Refusal to adapt or modify the ‘plan’ in the face of fundamental changes in circumstances.

Inferences include:

* The decisions to ‘go Metro’ were effectively made well before the official announcement;
* The reasons for those decisions are not (limited to) those given to the public;
* Nor are the reasons (limited to) speculated matters such as industrial relations or franchising;
* The reasons given to the public - capacity criteria – distract from other reasons;
* Behaviour and subsequent decisions, such as extensions, continue that distraction.

The overall picture is consistent with wanting to ‘play trains’ and using the North West Rail line – an election promise - as an opportunity to start the game e.g.:

* The history and (implicit) search by experts for a place for a Metro project;
* The project not having a rapid transit but an underlying commuter railway function;
* It not being comparable to iconic European Metros;
* Small tunnel size (and possibly CBD route) to prevent it being part of a larger train set;
* Criteria being focussed on trains rather than demand or passenger measures;
* False comparisons and estimates applied to these criteria;
* Ignoring public expert advice;
* Continued public statements about train ‘technology’.

For all the talk of Paris and technology, Sydney is not getting a Paris-style metro. It is getting the very worst aspect of Metro in Paris – small tunnels there decided on in the late 1800s to prevent another railway in or through that city.

The better Parisian analogy is RER. Yet, Sydney is not getting – and may forever be unable to get – a proper RER style system.

The problem for RER – faced up to in the 1960s – was the late 19th century Paris Metro small-tunnels decision. Since then, and with construction of larger diameter tunnels through Paris, RER operates fleet including double-deck trains with vastly more capacity per line than Sydney Metro.

The game in Sydney is out of hand.

Among the more outlandish things best suited to fantasy-land are:

* Talk of Metros 60km or more from Sydney;
* Claims of carrying 46,000 passengers per hour (forgetting that there is to be only 6 off-peak services per hour);
* Misleading comparisons which also falsely underestimate Sydney Trains capacity;
* Stupid claims of high speeds in between many stops;
* Confusion about what the ‘plan’ might be – conversion of everywhere to Metro or not;
* Ludicrous views such as double and single-deck trains can’t use the same tracks;
* Idiot results such as inner Sydney seeing Sydney Trains operating like a Metro while Sydney Metro operates like a commuter railway.

The role of advisers, especially ‘independent’ ones, cannot be overlooked.

Since 2012, shortly after the announcement of the ‘go-Metro’ decision, they – Infrastructure NSW, Infrastructure Australia and Commonwealth and State Departments have:

* Relied on the Metro proponent for almost all information;
* Failed to acknowledge the key issues;
* Failed to properly analyse Metro;
* Overlooked inconsistencies and contradictions in information and policy regarding Metro;
* Not apparently considered critical information or any alternative options;
* Published advice that is grossly deficient;
* Distracted from reasons for and consequences of Sydney Metro.

This in spite of those organisations being on strong effective notice of the need to take care about information from the Sydney Metro proponent.

The consequences are enormous for Sydney.

At the very least, reputations are damaged. Answering some questions might be the start of salvation. Some starters are in the following sections.

However, the public information from these parties to date, the nature of the starter questions and the implications for Sydney are such that only a proper public inquiry, empowered to call and examine witnesses under oath and require production of documentation can elicit the truth.

### 6.6 A few starters for the NSW Government and its agencies

The NSW Government is responsible for the current situation.

The basic questions relate to why the decision to ‘go Metro’:

* Was based on the reasons other than or in addition to those provided to the public;
* Does not reflect expert advice;
* Was misrepresented to Infrastructure NSW and Infrastructure Australia;
* Was taken in advance of assessment of the supposed reasons;
* May unnecessarily include matters which damage other parties;
* The reasons and effects of the above have subsequently been (sought to be) obscured.

It should be asked why its published documents are misleading and biased:

1. Why is there a disparity between what was in *Sydney’s Rail Future* and what has been done?
2. Why are the criteria supposedly at the heart of decision biased towards Metro and conflicts with normal, established criteria for assessments of public transport?
3. Why is the data supposedly used biased towards Metro and conflicts with advice from experts?
4. Whether there are non-disclosed criteria or data;
5. What, if any, substantive options to Metro were considered at any time?
6. What are the reasons for:

a. introducing Metro;

b. starting with the North West Rail;

c. dedicating a new Harbour Crossing to Metro;

d. Metro’s route in the CBD;

e. aspects of Metro to be ‘uncannily’ similar to that of the former Labor administration;

f. the extension to Bankstown;

g. tunnel dimensions;

h. it being more akin to Paris’ RER than Paris’ Metro with the exceptions of tunnel size and fleet?

It will be important to understand NSW’s context. Questions here include:

1. What significance was given to reports such as by Christie or Steer?
2. Whether and to what extent was its reversal to support a 2nd Sydney airport reflected in changes to transport plans?
3. What account was taken of Parliamentary questions, media comments and comments by observers etc. on the key issues?

Given the behaviour of other organisations, there are questions as to whether NSW interfered with or sought to exert influence on those organisations:

1. What was the point of identifying Bankstown in advance of a business case?
2. How it interacted with other organisations, including Infrastructure NSW?
3. Did it withhold information from Infrastructure NSW or Infrastructure Australia or from the Commonwealth such as expert reports, data, future intentions.

### 6.7 A few starters for Infrastructure NSW

Infrastructure NSW’s performance seems to fall into two parts: 2012 and later.

The 2012 State Infrastructure Strategy:

* Failed to heed or report expert advice on the matter supposedly pivotal to Government decisions – train line capacity;
* Reported information and views from the proponent which were either not tested or challenges to which were ignored.

The 2014 and 2018 State Infrastructure Strategy updates:

* Failed to cite experts;
* Failed to advance previous expert-informed views which became newly relevant by reason of a change in State policy to ‘support’ an airport in Western Sydney;
* Failed to identify fundamental strategic infrastructure issues;
* Indicate fundamental misunderstandings and gross errors in analysis;
* Reported information and views from the proponent which were either not tested, or direct and indirect challenges to which were ignored
* Published material biased in favour of the proponent.

Some specific questions include:

1. Prior to finalising the Strategy, was it aware of media reports, previous reviews e.g. Steer, and the Sydney Morning Herald public inquiry (Christie) regarding issues associated with Metro proposals and if so how did it satisfy itself the concerns are addressed?
2. Why was seating (passenger comfort/standing time) ignored as criteria?
3. What is its understanding of a ‘three tier’ rail network?
4. Was it aware of (claimed) intentions to restrict by, engineering works, the use of double-deck trains in Sydney for example by small tunnel sizes?
5. What does it estimate to be the cost of works to preclude double deck train operations which are not needed to facilitate single deck train operations?
6. Why did it seemingly assume technology ‘proven’ overseas to increase train line capacity could be used for single but not double-deck trains?
7. Information on the point thought critical – train and line passenger total capacity – in the tables was referenced to Transport for NSW and MTR for Transport for NSW. How was the accuracy of this information checked?
8. Why did it not cite different information on that point (7) provided by the expert it engaged?
9. Prior to finalising the Strategy was it aware Transport for NSW had engaged an expert to provide advice on matters associated with train and line capacities?
10. Why did it propose a target of 40,000 passengers per line per hour?
11. Did it perceive its brief to include identifying a place to introduce Metro in Sydney?
12. Why did it propose a rapid transit harbour crossing?
13. Why did it fail to comment in later reports – 2014 and this year – on the highly topical break of gauge issue and the incompatibility of the ‘plan’ with an airport at Badgery’s Creek?
14. What communications, instructions and requests were conveyed from the NSW Government in relation to Metro and rail?

### 6.8 A few starters for Infrastructure Australia

Infrastructure Australia had notice of issues arising from misinformation by State Government proponents.

It’s assessment of Sydney Metro is inconsistent with its previous statements and practices. It:

* Failed to understand Sydney Metro’s relation with the project at the top of its priority list – the Western Sydney Airport;
* Failed to identify fundamental strategic infrastructure issues;
* Accepted information and views from the proponent which were either not tested, or direct and indirect challenges to which were ignored;
* Failed to follow its own practices and recommending a project without a confirmed cost;
* Made its decision in apparent haste, in line with timing sought by the proponent;
* Published material biased in favour of the proponent.

Questions include:

1. Was it aware of media reports, previous reviews e.g. Steer, and the Sydney Morning Herald public inquiry (Christie) regarding issues associated with metro proposals and if so how did it satisfy itself the concerns are addressed?
2. What is its understanding of a ‘three tier’ rail network?
3. What is its understanding of ‘rapid transit’ or ‘metro’ and how Sydney Metro matches relevant principles in comparison to claims Metro is more a commuter railway like Paris’ RER?
4. Was it aware of (claimed) intentions to restrict by, engineering works, the use of double-deck trains in Sydney for example by small tunnel sizes?
5. What does it estimate to be the cost of works to preclude double deck train operations which are not needed to facilitate single deck train operations?

6. How does support for a *‘standalone’* system align with reference to *Sydney’s Rail Future* document which condemned such a scheme?

1. What was done to verify information provided by NSW, including in relation to claims about train and line capacity?
2. What was done to identify, seek from NSW and assess options such as identified by/for Infrastructure NSW:

a. ‘proven’ technology to increase capacity of existing / extended lines;

b. extending the City Metro segment to Strathfield instead of or in addition to Bankstown

and what information was relied on for these activities?

1. What other proposals have been supported whose capital costs are ‘*pending*’?
2. What communications, requests were conveyed from the NSW Government in relation to Metro and rail?

### 6.9 A few starters for the Department of Infrastructure

The Western Sydney Rail Scoping Study outcomes report was published in March 2018 jointly by Transport for NSW and the Department of Infrastructure.

Transport for NSW is an NSW agency and should be covered by section 6.6.

The Study was incompetent and irrational to such an extent it raises questions as to bona fides. It:

* Failed to exhibit any reasonable level of analysis or reliance on experts;
* Failed to understand the relation between Metro and the Western Sydney Airport;
* Failed to identify fundamental strategic infrastructure issues;
* Entailed misrepresentations;
* Was biased;
* Promulgated misinformation including by withholding relevant information.

Relevant questions would include:

1. Was it aware of media reports, previous reviews e.g. Steer, and the Sydney Morning Herald public inquiry (Christie) regarding issues associated with metro proposals and if so how did it satisfy itself the concerns are addressed?
2. What is its understanding of a ‘three tier’ rail network?
3. What is its understanding of ‘rapid transit’ or ‘metro’ and how Sydney Metro matches relevant principles in comparison to claims Metro is more a commuter railway like Paris’ RER?
4. Was it aware of (claimed) intentions to restrict by, engineering works, the use of double-deck trains in Sydney for example by small tunnel sizes?
5. Why did the Study discussion paper and/or Outcomes report
   1. Depict rail in Sydney as divided into two halves – West and East when it is known to operate – and be desirable to operate - as a network over both halves?
   2. Provide false and misleading comparisons about train type capacities?
   3. Propose Metro projects outside the ‘study area’?
   4. Probably misrepresent community consultation and claim confidentiality to be in respondents’ interests?
   5. Have such limited time for public consultation, especially in comparison with the time taken to ‘consider’ responses?
6. Why was seating (comfort/standing time etc.) not included as criteria?
7. What advice was sought on criteria, and how was this advice assessed?
8. Was it believed single and double-deck trains cannot use the same tracks?
9. Why did it recommend the South West Rail Link extension stop well short of the airport?
10. Why did it reject the indications about the South West Rail Link extension, and connection with the Sydney Trains network made in the Western Sydney Airport Environmental Impact Statement Appendix J?
11. What is its explanation for the ‘error’ message in that Appendix?
12. Why were options for extending the Sydney Trains system, such as from St Marys to the new airport and then to Macarthur, not considered?
13. Why were options for extending the Sydney Trains system that do not apparently impact on the main western line east of Parramatta – but were raised in consultations - not considered?
14. How were submissions to the study (and associated public information) raising issues associated with Metro and Western Sydney options for overcoming them considered
15. What communications, instructions and requests were conveyed from the NSW Government in relation to Metro, rail, options, criteria, timing and the Study?
16. Why was the ‘Outcomes’ report over a year late?

J Austen

July 2018

## Appendix 1 – Train Magic

The beagle asked for an explanation of Train Magic. So here goes – and the beagle would rather enjoy more knowledgeable people correcting the author’s more stupid errors.

Trains are held apart by signals – stop (red)/go (green) etc, a rule of a railway being that a train can proceed past a go signal but must not proceed past a stop signal. A key reason is that a stop signal may indicate the track beyond is occupied by another train. This occurs because any train occupying a track segment – between signals – causes the signal at its rear to be at ‘stop’; the train is detected by the track/rails.

Were the train to proceed past a stop signal it would risk collision with another train, such as happened at Glenbrook in 1998.

In Sydney at present the signals are relayed onto coloured lights on post adjacent to the tracks – outside the train’s cabin. In many cases the indication of the signal – the colour on the light - is displayed in a more centralised control room of a railway building.

The problem automatic train protection seeks to solve is of a train proceeding past a stop signal/red light. In Sydney at present this is problem is avoided by the train driver observing the red light and applying train brakes.

A back up – a defence if the driver doesn’t apply the brakes – involves a mechanical lever next to the light post which is raised when the light is red. Were such a train to pass this red light, the lever would activate the train’s brakes bringing it to a stop.

There are two main direct safety risks with this in Sydney.

First, the train may be travelling so fast that even if the brakes were applied it travels well beyond the red light into danger. This risk is modified by designing the rail system so that a red light is followed by at least one other red light. The design has at least two consecutive red light – stop signals set far enough apart to allow a train with activated brakes to stop between them – a space called the ‘overlap’. A complicating factor in Sydney is that trains vary in weight, hence optimal overlaps needs to be set with different reference speeds for different trains.

Second, the levers are unable to activate the brakes on every train. For example, some freight trains. More on that later.

A simple automatic train protection system effectively replaces the mechanical levers by ‘telling the train’ – not just the driver - to stop. This requires transmission of the signal from the track to the control room and to the train rather than (merely) to the light on the post. To do so the train must have a receiver. The signal may appear in the (drivers) cabin of the train also. It ‘tells the train’ by radio.

The European standard for automatic train protection is ETCS.

ETCS Level 1 generally just replaces the levers, but the posts and lights next to the track remain. This allows for trains not fitted with a receiver to operate by their drivers observing the lights.

At Level 1 a ‘balise’ - an attachment on top of a track sleeper - transmits the signal to the receiver in the train. Trains may continue to be detected by the rails/track – otherwise all trains would need a transmitter to ‘tell the track’ they were in a segment between lights.

At this time some discussion of capacity is needed. The train capacity of a line – how many trains it can carry at one time – is affected by the number of segments; the number of signals. Generally, the more signals – and therefore segments - the greater the capacity. Of course, too many signals and the train will need to slow so that it can stop within the overlap.

For this reason, signals and lights for lines handling much rail traffic are more sophisticated than a single green/red light. Some have posts housing several lights indicating ‘stop’ only when all lights are red. These posts can show combinations such as red and green, or another colour – amber – all of which indicate some signal further ahead will be ‘stop’. They indicate caution is warranted.

There are some practical problems with ETCS Level 1. One is that it might only supplement the levers and lights system.

Another arises from a safety principle that the default signal is ‘stop’ – a red light. A stop signal may be due to a train on the track ahead but may also be caused by a failure of or in the track e.g. a broken rail, by an electrical problem like a short circuit, water over track. In some circumstances it may be safe for the train to proceed past a red light. To do so the driver and controller (in the room) would talk about what to do, and the train might proceed slowly past the post. In the current Sydney system, the driver could re-set the brakes if they had been activated by the lever.

The rules of the railway are particularly important in such cases – some procedure is necessary to avoid a single red light causing a cascade of stop signals which shuts down the system and cannot be reactivated until the track etc. fault is fixed; to prevent actual capacity intermittently reducing to zero.

Such a procedure would also be practically necessary with ETCS Level 1 on a densely used railway. Perhaps more so with some systems where the train (ahead) is detected by the ‘balise’ rather than the track. In that case, the signal to the following train needs to be ‘updated’ once the front train clears the track section, but this can only affect the following train when it passes over it – which will take longer than if it had a driver who would observe a change in light colour ahead of his train. Therefore Level 1 prima facie reduces line capacity.

The possibility of stopping a train remotely – without a driver – points to possibilities of automatically slowing the train just like a driver should do on observing lights indicating ‘caution’. Some Level 1 systems might be able to do so by increasing the number of balises – new signal segments. A further refinement is a continuous balise – infill – to provide continuous updates.

These types of systems to slow trains improve technical safety by reducing risks of overspeed collisions and derailments such as at Waterfall in 2003.

If it is possible to remotely slow the train it is also possible to accelerate it. This moves towards ETCS Level 2 which is a digital system in which there are continuous signal updates and the posts and lights can be removed – provided all trains are properly fitted with receivers and transmitters. As the posts can be removed it may also be possible to remove drivers from the operation of trains – a la Sydney Metro. This is called Automatic Train Control.

In theory ETCS Level 2 systems increase the rated train capacity of the railway beyond any scheme of lights. The particular engineering and optimal train velocity calculations will be source of the claims of headways – minimum gaps between trains etc. However, the procedures to recover from a ‘false’ stop/slow signal will have a large influence on what can be practically achieved.

Both ETCS Level 1 and Level 2 can be retrofitted to existing tracks and trains.

One more thing. A similar system is sometimes used for line haul freight – one report has it supplied to Roy Hill in Western Australia.[[118]](#endnote-118)

It too increases capacity but relies on satellites rather than balises to transmit information to trains etc. This reflects the lower density of trains on lines, and perhaps is safely cost efficient as location of trains need not be as precise as in the middle of city junctions – or perhaps because issues regarding ghosting are not some important.

The Australian Rail Track Corporation is trialling such a system. It had been mooted in the NSW Hunter Valley in the mid-1990s. Its operational compatibility with ETCS – the ability of trains to run on either system, and the ease of handover of a train moving from one system to the other – remains unclear.[[119]](#endnote-119)

## Appendix 2: Timeline of unusual matters on the public record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 1. | 2007-2010 | ABC TV  4 Corners etc.  Labor proposals | Three different metros proposed.  Harbour crossing for CityRail was needed but not mentioned. | Seems as if looking for a place for a metro. |
| 2. | 2010  May | Christie – report of Sydney Morning Herald public inquiry | Focus on metro  a. Basics questioned  b. Break of gauge rejected  c. CBD route questioned  d. CBD stub for CityRail  e. Paris RER noted  f. ETCS noted  g. Public inquiry recommended. | Highly credible report.  Major surprises – matters not then in public domain: a, b, c. Together imply attempt to damage CityRail. |
| 3. | 2010  Feb. | SMH  Christie report | Rejects separate transport system as ‘bizarre premise’ | Implies Labor metro proposals were for separate system. |
| 4. | 2010  Feb. | SMH  metro cancelled | Labor Premier Keneally cancels (CBD) metro.  Claim of doctored metro reports. | Surprise that revealed. |
| 5. | 2011  Mar. | Coalition  Government election | North West Rail Link promised.  To be added to Sydney Trains (then CityRail).  No reference to Christie (2) | Should have known harbour crossing needed. |
| 6. | 2011  6 Apr. | SMH  North West Rail Link | NSW Transport Minister says North West Rail to be added to Sydney Trains  a. need’ to confirm is unusual.  b. Former Metro chief rehired for North West Rail Link – see (4).  c. Metro chief had worked on metro post Keneally. | Should have known harbour crossing needed.  Continuation of work on highly politicised cancelled project? |
| 7. | Oct. 2011 – July 2012 | Transport for NSW expert report | a. Brief may have been thought (wrongly by client) to be limited to subject where it was thought metro would fare well – dwell time.  b. Considered other related factors.  c. Cautioned re potential for metro meltdown.  d. Conclusion is Sydney Trains may have more capacity than normal metro.  e. Doesn’t mention INSW expert and different capacity estimates.  f. Published by SMH not TfNSW, apparently in Sept 2013. | Highly regarded expert.  Indicates it was commissioned Oct.11.  Contradicts form and substance of later (Government) claims about a key matter used to decide on metro – capacity. |
| 8. | 2011  Nov. 5 | SMH  Paris style trains | a. Paris RER not mentioned.  b. No reference to Christie e.g. 2e.  c. MTR (Hong Kong Metro operator) to review other consultants work. | Infrastructure NSW report later sources critical information to TfNSW/MTR, not to its own or TfNSW experts. |
| 9. | 2011  Nov. 30 | North West Rail Project definition report to Infrastructure  Australia | a. Conflict between words/stated intention in several places and a single description of (a small) tunnel dimension – 5.7m – in summary.  b. Ignored Christie e.g. 2b. | Indicated Government yet to decide. The single description has more or less come to pass. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 10. | 2012  Apr. | SMH – opposition to 2nd airport | Premier and Transport Minister oppose 2nd Sydney Airport (possible Badgery’s Creek). | Airport may require Sydney Trains harbour crossing. |
| 11. | 2012  Apr. | Interfleet for Infrastructure NSW | Reviewed TfNSW plan  a. Proposed rapid transit route Strathfield not Bankstown.  b. Proposed rapid transit and Sydney Trains on same lines.  c. Proposed ETCS and gave train no. capacity estimates.  d. Capacity target principle.  e. Referred to seating separately.  f. No mention Christie 2.  g. No mention TfNSW expert 7, issues and different capacity estimates.  h. Engagement includes advice on franchising – cites UK, Victoria as case studies. | Christie matters 2 a, e and f covered. But not matters of separate railway 2 b, c, d.  Understanding of TfNSW three tier railway proposal 12 doesn’t match what has been done. |
| 12. | 2012  Jun. | Sydney’s Rail Future | a. Three tier railway proposed but there already was one.  b. Preferred option on capacity criteria.  c. Normal criteria – seating – missing.  d. Stated criteria doesn’t support preferred option.  e. Best option appears Sydney Trains harbour crossing, joint operations.  f. Rapid transit in suburbs.  g. Through Bankstown.  i. No mention Christie 2 a, b, c, f.  j. Ignore/contradict TfNSW expert 7.  k. Ignore INSW expert 11. | Doesn’t match what has been done.  e.g. three tier has become two separate railways.  Decision consistent with opposing 2nd airport. |
| 13. | 2012  Jul. | TfNSW expert report | No reference to 11, 12. | As for 7. |
| 14. | 2012  Oct. | Infrastructure NSW  State Infrastructure Strategy | a. Refers to / reviews 12.  b. Proposed rapid transit route Strathfield not Bankstown as per INSW expert cf. 11, 12.  b. Proposed rapid transit and Sydney Trains on same lines as per INSW expert 11.  c. Refers to INSW expert ETCS, as ‘technology proven overseas’ but does not fully consider application to Sydney Trains.  d. Misleading capacity comparison.  e. Capacity information from TfNSW and MTR for TfNSW.  f. Capacity information conflicts with TfNSW expert 7.  g. TfNSW expert 7 not mentioned.  h. Capacity information conflicts with INSW expert 11.  i. Capacity target 40,000 without source, conflicts with INSW expert.  j. Christie 2 a,b,c,d,f not covered. Issue f ambiguous. | TfNSW’s expert hired by Infrastructure NSW for another task.  Capacity target is a later claimed capacity of metro.  Understanding of TfNSW three tier railway proposal 12 doesn’t match what has been done. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 15. | 2013  Feb. and var | Thomas  Norley et al articles. | a. Speculation on motives and effects of 12.  b. Thomas claim tunnel size reduced post- release of 12, cf 9.  c. Named individuals. | Effect of tunnel size reduction c/would? invalidate claim of three tier railway – it would make two separate railways contrary to understanding of INSW and its expert, 11, 14. Tunnel size reputedly 6.0m cf 9.  Thomas claims to have resigned from NSW on principle. |
| 16. | 2014 Mar.  24 | SMH – metro capacity claims | a. Tunnel size too small for double decks.  b. CEO Sydney trains contradicts NSW claims about capacity and international practice.  c. Melbourne academic contradicts NSW claims about capacity. | b, c supports views of TfNSW and INSW experts. |
| 17. | 2014 | ABC Fact Check – NSW rail claims | a. Refutes NSW capacity claims, e.g. 16.  b. Presents proper comparative bases.  c. Cites TfNSW expert 7. | Disputed number of trains, number of passengers per train. |
| 18. | 2014  Jun 12 | Crikey etc. Sandilands etc. articles | a. Tunnel size referred to as ‘vandalism’.  b. Qns why anyone would think of the idea.  c. Refers to harbour crossing. | Blog commonly visited by transport professionals. |
| 19. | 2014  Nov | State Infrastructure Strategy | a. Badgery’s Creek mentioned cf 12, 14.  b. Proposed SWRL to St Marys via WS Airport. i.e. Sydney Trains not Metro cf. 20.  c. Premier identified Metro extension to Bankstown as SRT.  d. Strathfield option not mentioned.  e., Preliminary business case of c done, final in early 2016 cf 21.  f. Business case options are from TfNSW and do not refer to substantial alternatives to SRT.  g. Essential case for SRT is to make NWRL workable cf 2, 5. 6 and 21, 23 my comment for incorrectness.  h. Claimed enhanced connectivity of SRT through global economic corridor – would be true if went to KSA but it goes to Bankstown.  i. All stations on route named but detailed map of CBD not shown cf. 2d.  j. Recommended TfNSW report back on long term network in 2015.  k. Identified extension of NWRL to St Marys but didn’t identity break of gauge.  l. Careful wording or mistake – refers to extension of rail transit network (not? Rapid transit) – into new areas and refers to new term heavy rail which in a later document refers to Sydney Trains.  m. Tunnel size not mentioned cf2d, 15, 16, 18  m. TfNSW only source for rail | Is obvious that INSW previous option of extension to Strathfield is much better suited to WS Airport, hence may need to redo plan and come up with a different plan. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 20. | 2016  Sept. | Western Sydney rail scoping study discussion – including Western Sydney Airport Badgerys Ck | a. Extremely low quality.  b. Technically incompetent and many errors.  c. Likely to offend target audience.  d. Ignored CBD harbour issue Christie 2 b, c.  e. Turn-up and go misunderstood.  f. Ignored that 12 was done when NSW opposed airport.  g. Ignored Metro is a separate railway.  h. Study area inappropriate.  i. Inconsistent treatment of study area – metro proposed outside area.  j. Criteria of demand for rail doesn’t match proposal.  k. For consultation but criteria settled.  l. Wrong criteria used for Western Sydney.  m. Vague /conflicting maps.  n. Relevant options not raised.  o. Option of Strathfield for city metro extension not raised cf. 11, 14.  p. Misleading photos etc.  q. Creates impression of bias.  r. Limited consultation time. | Author’s submission ignored.  Not a legitimate process for consultation.  Simultaneous with increase in public relations matters; promotion of metro educational material for schools, misleading artists impressions of trains.  Strathfield option would be best for airport.  In the event the advice was more than a year late. |
| 21. | 2016  Oct. | Summary business case City Metro and extension to Bankstown | a. Refers to 12 but contradicts by proposing a standalone system.  b. City route similar to problem identified in 2c but doesn’t refer to 2.  c. Extension to Bankstown, but no options proposed cf. 11, 14 and 20.  d. Misleading capacity comparison.  e. Capacity claim of 46,000 people unclear.  f. Claimed looked at capacity to 24tph but this conflicts with 7, 11.  g. False statements e.g. Bankstown less complex since no freight.  h. Misrepresentation of turn-up-and-go.  i. Western Sydney and WSAirport ignored.  j. Computer marked to industry Dec 2015.  k. Delivery strategy confirmed previously – April 2016.  l. Inconsistent /irrational confidentiality claim.  m. Full business case not published. | More typical of promotional material than a business case.  Indicated contracts to be signed for construction mid-2017. |
| 22. | 2017  May 24 | SMH – Western Sydney rail | a. NSW says Commonwealth should limit itself to funding while joint Commonwealth-State study – 20 – is underway.  b. NSW idea contrary to Commonwealth.  c. Comment ‘unhelpfully complicate’.  d. Effect is to cover-up metro-WSAirport issue.  e. ‘We have expertise’ is ludicrous since the expertise forgot the WSAirport. | Appears to be mouthpiece for NSW Government.  Issues were known e.g. 10. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 23. | 2017  Jun. 14 | Infrastructure Australia summary evaluation of City and SW Metro | a. No reference to INSW.  b. Ignores Christie 2 a, b, c, e, f.  c. Referred to 12 as independent metro.  d. Inconsistent with WSAirport (although that is on project priority list).  e. Admits relevant options not considered.  f. Cost pending.  g. Technical deficiencies with assessment.  h. No evidence of independence from proponent information.  i. Timing just before contracts signed. | Approval appears inconsistent with previous cases.?  Wording appears extremely careful.  Metro contracts reputedly let two weeks later. |
| 24. | 2017  Oct. | Future transport draft | a. Conflicts with 25.  b. Technically incompetent.  c. Wrong criteria.  d. Misrepresents Metro cf. 21.  e. Inconsistent terminology.  f. Misrepresents ‘turn-up and go’.  g. Inconsistent explanations of purpose.  h. Proposals inconsistent with Greater Sydney Commission aims.  i. Numerous errors and odd comments.  j. Contradicts (refutes) Government’s Metro capacity claim.  k. Unduly short consultation.  l. Process flaws – relation to 20, reports of Government precluding options. | Could be interpreted as attempt to usurp or influence Commonwealth backed study 19. |
| 25. | 2017  Oct. | Greater Sydney Commission | a. Conflicts with 24.  b. Technically incompetent – omits,  misrepresents and is wrong about transport matters.  c. Hidden inferences.  d. Proposals inconsistent with aims.  e. Vague.  f. Contradicts (refutes) Governments capacity claim.  g. Misrepresents and misleads re Metro.  h. Bias to Metro.  i. Unduly short consultation period. | Conflict with 23 a major concern since both sought public comments at same time and claimed they were linked. |
| 26 | 2017  Dec | SMH – Western Sydney rail; West Metro, Badgerys Creek corridor | a. West Metro inconsistent with Badgerys Creek view of Commonwealth.  b. Sale of land in corridor inconsistent with scoping study. | Appears attempt to usurp Commonwealth  backed study 19.  Study by this time was a year late. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 27. | 2018  Jan-Feb. | SMH –  TfNSW Secretary opinion piece | a. Capacity claims conflict with previous?  b. Metro decided after advice from experts cf. 7, 11, 14?  c. Turn-up and go claim false.  d. Central Coast claim false.  e. Many omissions.  f. Non-recognition of conflict 24, 25.  g. (lack of) options in 21.  h. Capacity criteria incomplete.  i. Implied claim that Sydney Trains rail can only take double decks.  j. Claimed effect of Metro on Sydney Trains false.  k. Tunnel size /separate independent system omitted. | Opinion piece may be response to Dr Day, Mr Brew et al criticisms of Metro. |
| 28. | 2018  Feb. | State Infrastructure Strategy | a. Support for 30-minute city.  b. SmartRail program – seems to be ETCS but misunderstood on info from TfNSW.  c. Independent operation of lines increases capacity – incorrect statement.  d. To permit conversion of lines to high capacity high frequency in the future.  e. Metro sw to increase catchment?  f. Identified new links to Parramatta and metro to Liverpool.  g. Recognised western Sydney as having high levels of social exclusion cf. a.  h. First phase connection to WSA from St Marys but SWRL Leppington in the longer term cf. 29.  i. Tunnel size etc. omitted.  j. Reliance on TfNSW. | Complete about face in understanding from 2012. |
| 29. | 2018  Mar. | Western Sydney rail scoping study outcomes report | a. Largely as for comments in 20.  b. Best option not selected – even though noted in WS Airport EIS.  c. Perverse outcome – 4 independent railways.  d. Wrong line to airport chosen.  e. Bizarre explanation as per 28.  f. Make believe terminology.  g. Ambiguity about conversion of entire network to Metro.  i. Over a year late. | Irrational report.  Effect is hiding the Christie issues. |
| 30. | 2018  May 21 -22 | Daily Telegraph – Western Sydney rail front page | Telegraph published author’s letter to editor, omitted phrase asking for public inquiry. |  |
| 31. | 2018  May 23 | Daily Telegraph – claims Government will fix congestion | a. Ludicrous claims re Metro v. Sydney Trains.  b. Didn’t publish author’s letter to editor correcting errors cf. 30. | Metro claims in Telegraph becoming more outlandish. |
|  | **Time** | **Subject** | **Unusual aspect** | **My comment** |
| 32. | 2018  Jun. 9 | Daily telegraph -new technology for Sydney Trains | a. Misinterpretation implying Sydney Trains capacity lower than Metro.  b. Amount of misinterpretation – 1 minute - is as reported by 7.  c. No reference to 2, 7, 11, 14 where previously raised.  d. No reference to Waterfall inquiry which initiated new technology. | Contradicts Government rail capacity claims. |
| 33. | 2018  Jun. 10 | ABC – new technology for Sydney Trains | a. Conflicts with 32.  b. Doesn’t draw conclusion that Sydney Trains has more capacity than Metro.  b. No reference to 2, 7, 11, 14 where previously raised.  c. No reference to Waterfall inquiry which initiated new technology. | Reverses Government rail capacity claims. |
| 34. | 2018  Jun | WIN TV News  NSW opts for Metro WSA | a. Highly unusual place for metro.  b. cf. 25, 26, 28. | Cannot find press report. |
| 35. | 2018 Jul. 2 | SMH – NSW backflip on funding | a. Minister rejects offer of $3bn federal funds.  b. Grounds are the Western line is full.  c. Ignored implication plan has failed. | Issue would have not have arisen if any of 2, 7, 11, 14 adopted. Or if statements and criteria in 12 were followed. |
| 36. | 2018 Jul. 4 | SMH – fast or slow metro | a. Main metro issue is whether fast or slow metro cf.35.  b. Several hour electronic poll. | Is it usual for the bigger issue to be only open for a few hours? |

#### References for Appendix 2

|  |  |
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| 13 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 14 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 15 | <https://www.thejadebeagle.com/sydney-2-exhibit-2-toucheth-not-the-monorail.html> May 2016 |
| 16 | [https://www.thejadebeagle.com/doubling-up.html May 2017](https://www.thejadebeagle.com/doubling-up.html%20May%202017)  <https://www.thejadebeagle.com/trouble-in-paradise-1.html> Oct 2017  <https://www.thejadebeagle.com/trouble-in-paradise-2.html> Nov 2017 |
| 17 | [https://www.thejadebeagle.com/doubling-up.html May 2017](https://www.thejadebeagle.com/doubling-up.html%20May%202017)  <https://www.thejadebeagle.com/trouble-in-paradise-1.html> Oct 2017  <https://www.thejadebeagle.com/trouble-in-paradise-2.html> Nov 2017 |
| 18 | <https://www.thejadebeagle.com/toucheth-not-the-monorail-western-sydney-rail.html> Nov 2016  <https://www.thejadebeagle.com/badgerys-creek.html> Jan 2017 |
| 19 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 20 | <https://www.thejadebeagle.com/badgerys-creek.html> Jan 2017 |
| 21 | <https://www.thejadebeagle.com/earth-to-canberra-2.html> Aug 2017 |
| 22 | <https://www.thejadebeagle.com/toucheth-not-the-monorail-western-sydney-rail.html> Nov 2016  <http://www.thejadebeagle.com/toucheth-not-the-monorail-metro-summary-business-case.html>. Jan 2017  <https://www.thejadebeagle.com/doubling-up.html> May 2017 |
| 23 | <https://www.thejadebeagle.com/earth-to-canberra-2.html> Aug 2017 |
| 24 | <https://www.thejadebeagle.com/future-transport.html> Nov 2017 |
| 25 | <https://www.thejadebeagle.com/future-transport.html> Nov 2017  <https://www.thejadebeagle.com/trouble-in-paradise-2.html> Nov 2017 |
| 26 | <https://www.thejadebeagle.com/toucheth-not-the-monorail-western-sydney-rail.html> Nov 2016 |
| 27 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 28 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 29 | <https://www.thejadebeagle.com/no-deal.html> May 2018 |
| 30 | <https://www.thejadebeagle.com/dogs-breakfast.html> May 2018 |
| 31 | <https://www.thejadebeagle.com/dogs-breakfast-for-two.html> May 2018 |
| 32 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 33 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 35 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |
| 36 | <https://www.thejadebeagle.com/metro-magic.html> Jul 2018 |

1. <https://johnmenadue.com/john-austen-we-need-a-metro-public-inquiry-in-nsw-to-sort-out-the-railway-mess/> [↑](#endnote-ref-1)
2. Commandment III done (note v). [↑](#endnote-ref-2)
3. Commandment IV achieved (note v). <https://johnmenadue.com/john-austen-more-on-the-sydney-transport-mess-the-western-sydney-dud-deal/> [↑](#endnote-ref-3)
4. Commandment V on the way (note v). [↑](#endnote-ref-4)
5. The Daily Telegraph, ‘Project Sydney’, 23 May 2018. [↑](#endnote-ref-5)
6. Commandment VI observed (note v). [↑](#endnote-ref-6)
7. Coveting, completing the State’s performance of the 7 Commandments (note v).

   For Twickenham see: <https://www.thejadebeagle.com/paradise-revisited.html>

   Record crowd (again!): <https://www.news.com.au/sport/rugby/wallabies/live-coverage-of-the-third-and-deciding-test-between-the-wallabies-and-ireland/news-story/aec537babfdc8a15b19dbbd2fc96f8d7>, and Buzz Rothfield, Sunday Telegraph, 24 June 2018. [↑](#endnote-ref-7)
8. <https://www.thejadebeagle.com/trouble-in-paradise-2.html> [↑](#endnote-ref-8)
9. <https://www.thejadebeagle.com/earth-to-canberra-2.html> [↑](#endnote-ref-9)
10. <https://www.thejadebeagle.com/no-deal.html> [↑](#endnote-ref-10)
11. <http://www.abc.net.au/news/2018-06-10/nsw-trains-to-get-new-technology-on-the-tracks/9854992> [↑](#endnote-ref-11)
12. Daily Telegraph, June 9, 2018. [↑](#endnote-ref-12)
13. <https://www.smh.com.au/national/nsw/long-tube-ride-to-australia-for-sydney-train-king-howard-collins-and-his-barmy-army-20151211-glllgm.html> [↑](#endnote-ref-13)
14. <https://www.smh.com.au/national/nsw/doubledecker-trains-a-mistake-for-sydney-ofarrell-20140324-35dau.html> [↑](#endnote-ref-14)
15. Highly respected rail analyst Mr A. W. Wardrop, in Appendix 3: *Fitness for duty. The capabilities of double and single deck rolling stock*. [*https://trove.nla.gov.au/work/37406431*](https://trove.nla.gov.au/work/37406431) [↑](#endnote-ref-15)
16. <https://www.smh.com.au/national/nsw/doubledecker-trains-a-mistake-for-sydney-ofarrell-20140324-35dau.html> [↑](#endnote-ref-16)
17. <http://images.smh.com.au/file/2013/09/23/4770519/trains.pdf> [↑](#endnote-ref-17)
18. <https://www.youtube.com/watch?v=sVTHJV1sta0> [↑](#endnote-ref-18)
19. <https://www.thejadebeagle.com/sydney-impediimenta-deo-contraria.html>

    <https://www.thejadebeagle.com/purgatory.html> [↑](#endnote-ref-19)
20. <http://www.infrastructure.nsw.gov.au/expert-advice/state-infrastructure-strategy/> [↑](#endnote-ref-20)
21. <http://images.smh.com.au/file/2013/09/23/4770519/trains.pdf> [↑](#endnote-ref-21)
22. <http://www.railwaygazette.com/news/traction-rolling-stock/single-view/view/paris-rer-ng-design-unveiled.html>

    For independent inquiry report and door sizes see noted xxv. above. [↑](#endnote-ref-22)
23. *Independent Transport Safety and Reliability Regulator Report* 2006-07, 2007-08. [↑](#endnote-ref-23)
24. <https://www.treasury.nsw.gov.au/sites/default/files/2018-06/20180610%20-%20Media%20Release%20-%20Berejiklian%2C%20Perrottet%20and%20Constance%20-%20NSW%20Budget%202018%20-%20More%20trains%20and%20more%20services%20for%20the%20T4%20and%20T8%20lines.pdf> [↑](#endnote-ref-24)
25. <https://www.thejadebeagle.com/purgatory.html> [↑](#endnote-ref-25)
26. <http://www.railway-technical.com/signalling/automatic-train-control.html> [↑](#endnote-ref-26)
27. <https://www.onrsr.com.au/__data/assets/pdf_file/0010/19927/Report-Report-37-Waterfall-Summary-of-All-SCOI-Waterfall-Recommendations-Closed-and-Open-11-August-2017.pdf> and eg. <http://www.hse.gov.uk/research/rrpdf/rr066.pdf>,

    <https://www.researchgate.net/publication/23528346_The_economics_of_Automatic_Train_Protection_in_Britain> [↑](#endnote-ref-27)
28. <http://www.abc.net.au/news/2007-05-14/nsw-govt-to-trial-rail-safety-system/2547266> [↑](#endnote-ref-28)
29. [*http://www.infrastructure.nsw.gov.au/expert-advice/state-infrastructure-strategy/state-infrastructure-strategy-2012/*](http://www.infrastructure.nsw.gov.au/expert-advice/state-infrastructure-strategy/state-infrastructure-strategy-2012/) at p212. [↑](#endnote-ref-29)
30. [http://www.infrastructure.nsw.gov.au/media/1162/interfleet\_rail\_network\_strategy\_review.pdf at p.72](http://www.infrastructure.nsw.gov.au/media/1162/interfleet_rail_network_strategy_review.pdf%20at%20p.72) [↑](#endnote-ref-30)
31. <https://www.witpress.com/Secure/elibrary/papers/9781845644949/9781845644949012FU1.pdf> [↑](#endnote-ref-31)
32. <http://www.alstom.com/press-centre/2016/6/alstom-delivers-australias-first-etcs-level-2-signalling-system-in-sydney/> [↑](#endnote-ref-32)
33. <http://www.abc.net.au/news/2018-06-10/nsw-trains-to-get-new-technology-on-the-tracks/9854992> [↑](#endnote-ref-33)
34. <http://www.railjournal.com/index.php/rolling-stock/paris-rer-new-generation-train-design-unveiled.html> [↑](#endnote-ref-34)
35. <http://www.abc.net.au/news/2014-04-11/barry-ofarrell-sydney-trains-claim-doubtful/5371446> [↑](#endnote-ref-35)
36. <http://images.smh.com.au/file/2013/09/23/4770519/trains.pdf> [↑](#endnote-ref-36)
37. <https://www.thejadebeagle.com/future-transport.html> [↑](#endnote-ref-37)
38. <http://www.infrastructure.nsw.gov.au/media/1161/interfleet__summary.pdf> [↑](#endnote-ref-38)
39. <http://www.infrastructure.nsw.gov.au/expert-advice/state-infrastructure-strategy/>

    <http://www.infrastructure.nsw.gov.au/media/1138/sis_report_section80_print.pdf> [↑](#endnote-ref-39)
40. [http://www.infrastructure.nsw.gov.au/media/1162/interfleet\_rail\_network\_strategy\_review.pdf p.76](http://www.infrastructure.nsw.gov.au/media/1162/interfleet_rail_network_strategy_review.pdf%20p.76) [↑](#endnote-ref-40)
41. [http://www.infrastructure.nsw.gov.au/media/1162/interfleet\_rail\_network\_strategy\_review.pdf at p.18](http://www.infrastructure.nsw.gov.au/media/1162/interfleet_rail_network_strategy_review.pdf%20at%20p.18) [↑](#endnote-ref-41)
42. [http://www.infrastructure.nsw.gov.au/media/1138/sis\_report\_section80\_print.pdf at p.110](http://www.infrastructure.nsw.gov.au/media/1138/sis_report_section80_print.pdf%20at%20p.110). [↑](#endnote-ref-42)
43. <https://www.smh.com.au/national/nsw/former-cbd-metro-chief-to-drive-north-west-rail-link-20110406-1d4kt.html> [↑](#endnote-ref-43)
44. [http://www.infrastructure.nsw.gov.au/media/1162/interfleet\_rail\_network\_strategy\_review.pdf p.73](http://www.infrastructure.nsw.gov.au/media/1162/interfleet_rail_network_strategy_review.pdf%20p.73) [↑](#endnote-ref-44)
45. <https://www.smh.com.au/national/nsw/private-operators-in-the-mix-for-north-west-rail-link-20111202-1obfu.html> [↑](#endnote-ref-45)
46. <http://www.ecotransit.org.au/ets/files/Fixing_the_trains_in_Sydney_1855_revisited_Sandy_Thomas_February_2013.pdf> at p.6

    One media report is: <https://www.smh.com.au/national/nsw/paris-style-train-plan-for-city-20111005-1l9pp.html> [↑](#endnote-ref-46)
47. Access by: ttps://webcache.googleusercontent.com/search?q=cache:MLejjqlLdiEJ:https://www.yumpu.com/en/document/view/6244977/north-west-rail-link-project-definition-report-nsw-government/47+&cd=8&hl=en&ct=clnk&gl=au&client=safari [↑](#endnote-ref-47)
48. <https://cases.ita-aites.org/search-the-database/project/28-sydney-metro-northwest-and-city-southwest> [↑](#endnote-ref-48)
49. <https://transportsydney.wordpress.com/2013/06/25/why-are-the-nwrl-tunnels-too-small/>

    <https://blogs.crikey.com.au/planetalking/2014/06/12/the-nw-link-toy-tunnels-will-cripple-sydneys-rail-future/> [↑](#endnote-ref-49)
50. <https://www.transport.nsw.gov.au/newsroom-and-events/media-releases/planning-approval-lodged-for-north-west-rail-link> [↑](#endnote-ref-50)
51. <http://www.infrastructure.nsw.gov.au/media/1161/interfleet__summary.pdf> [↑](#endnote-ref-51)
52. Footnote 8: *Douglas Economics 2012, Modelling the Ability of Fare Incentives to Spread AM Peak passenger loads, prepared for Infrastructure NSW* And see: <http://www.infrastructure.nsw.gov.au/media/1129/sis_report_expertreport_print.pdf> [↑](#endnote-ref-52)
53. <https://www.smh.com.au/national/nsw/paris-style-train-plan-for-city-20111005-1l9pp.html> [↑](#endnote-ref-53)
54. <https://en.wikipedia.org/wiki/Paris_M%C3%A9tro>, <https://en.wikipedia.org/wiki/R%C3%A9seau_Express_R%C3%A9gional> [↑](#endnote-ref-54)
55. <https://en.wikipedia.org/wiki/Paris_M%C3%A9tro> [↑](#endnote-ref-55)
56. <http://www.ejrcf.or.jp/jrtr/jrtr23/F36_Sato.html> [↑](#endnote-ref-56)
57. <http://www.metro-report.com/news/rolling-stock/single-view/view/sncf-awards-EUR375bn-paris-rer-fleet-renewal-contract.html> [↑](#endnote-ref-57)
58. <http://docplayer.net/52061849-How-tokyo-s-subways-inspired-the-paris-rer-interconnection-with-sncf-suburban-lines.html> [↑](#endnote-ref-58)
59. Enquête publique see: <https://books.google.com.au/books?id=N-1GDwAAQBAJ&pg=PA169&lpg=PA169&dq=france+public+inquiry+procedure&source=bl&ots=9QoRXWFtIP&sig=43kyat__LJXPL1k1P7JJK0EMjp8&hl=en&sa=X&ved=0ahUKEwj-z86esqXcAhUEmpQKHXN8CNQQ6AEIQjAC#v=onepage&q=france%20public%20inquiry%20procedure&f=false> [↑](#endnote-ref-59)
60. P.11 <https://www.sydneymetro.info/sites/default/files/document-library/16118%20Sydney%20Metro%20Project%20Overview_WEB.pdf> [↑](#endnote-ref-60)
61. <http://mysydneycbd.nsw.gov.au/sites/default/files/user-files/uploads/rail-future-web.pdf> [↑](#endnote-ref-61)
62. <https://www.dailytelegraph.com.au/news/nsw/premier-barry-ofarrell-decides-second-sydney-airport-wont-fly/news-story/bc2a8d3d44f3edbacc45e590f20aa939?sv=105e1b9b23076834bf042fe58f9772a3> [↑](#endnote-ref-62)
63. <https://www.dailytelegraph.com.au/news/nsw/sydney-ghost-tunnels-on-track-to-nowhere/news-story/bc68fe075232409397cb09bec73a5248> [↑](#endnote-ref-63)
64. [*https://trove.nla.gov.au/work/37406431*](https://trove.nla.gov.au/work/37406431)*,* at p.200

    [↑](#endnote-ref-64)
65. <http://www.abc.net.au/4corners/off-the-rails/1088230>

    Transcript is available. Among the more interesting parts are:

    *WENDY CARLISLE: Having dumped Morris Iemma's north west metro, Rees set his sights on getting federal funding for a more modest plan. On the 24th of October in a meeting room high up on the 41st floor of governor Macquarie tower, the Premier met with officials from infrastructure Australia to pitch his new plan - the CBD metro. It would be a six kilometre tunnel under the city from central station up through the CBD, under Sydney harbour at two points and into a marginal Labor seat in the inner west, areas already well served by train, bus, light rail and ferry.*

    *Premier Rees hadn't taken the plan to Cabinet. It hadn't even been fully costed. When the Premier finished his presentation to infrastructure Australia he left the room with his infrastructure advisor David Richmond, and held a press conference.*

    *(Excerpt of footage from press conference 24th October 2008)*

    *NATHAN REES: David Richmond and I have just come from briefing Infrastructure Australia's representatives who are here in Sydney today to hear about our bid for federal government funds for infrastructure projects in Sydney and New South Wales.*

    *WENDY CARLISLE: Journalists were handed a map of the metro and a press release.*

    *REPORTER: What proportion of Commonwealth funding are you seeking for this project?*

    *NATHAN REES: For this? In the first instance, my understanding is we would be seeking the total. Do we have the plan, the map? Ok I might have the map handed out, and if I could have one so that I can talk to it.*

    *REPORTER 2: How much would this cost?*

    *NATHAN REES: Costing on this one?*

    *DAVID RICHMOND, INFRASTRUCTURE ADVISOR: We're still working through costing right at the moment. It's an option that's emerged in the context of the mini budget and finalising the Infrastructure Australia submission. I wouldn't give you a figure today, we can organise to give you a figure in an hour or so.*

    *WENDY CARLISLE: Four Corners has been told that when no one could answer the simple question - "how much would it cost?" - an advisor was despatched back to the room where discussions with Infrastructure Australia were still going on. He asked "any idea what this will cost". The reply came back - "about 4 billion".*

    *Later that afternoon the Premier issued a press release, the CBD metro would cost $4 billion. When they learned of the plan, some experts had concerns.*

    *GARY GLAZEBROOK, SENIOR LECTURER, UTS: it's not really tackling the problems in the outer suburbs which are really much more serious than the problems for inner city commuters. Inner city commuters face the problem of a lack of capacity on the rail system and on the buses, but the in the outer suburbs, the problem is there's just no systems at all, there are no trains at all in some of these suburbs.*

    Note: the CBD Metro route was the one questioned by Christie’s inquiry – note xi below.

    *WENDY CARLISLE: In this atmosphere of increasing controversy Four Corners' request for an interview with the CEO of Sydney Metro was met with a strange response. Instead we were offered an interview with three heads of the major transport bureaucracies - Rodd Staples, from the Metro, Rob Mason, head of RailCorp, and Les Wielinga, the Director General of the new super transport ministry. It was, we were told, all or nothing.*

    *I guess this is a fairly unique experience for all three CEOs to be in the same room at the same time talking to the media and Les, if I can ask you first, can you stand with your hand on your heart and say that this CBD metro plan is the one?*

    *LES WIELINGA, DIRECTOR GENERAL, DEPARTMENT OF TRANSPORT AND INFRASTRUCTURE: I put my hand on my heart and say that the transport plan that we're now producing for Sydney will be the right transport plan to produce the outcomes our community needs. I put my hand on my heart and say that.*

    *WENDY CARLISLE: I appreciate that, I mean but one of the issues for people in New South Wales is a question of trust, that they have heard plans from government after government, premiers after premier in this state, and I guess their response more in sorrow than in anger, is we'll see it when we believe it.*

    *LES WIELINGA: Yeah, I hear what you're saying. I understand that that's your view. What I'm saying to you is that the plan that we're producing now we will look very closely and appropriately at the implementation strategies for that plan.*

    *WENDY CARLISLE: But can we trust the claims the Government is making about how many people will use the metro? Six months ago it admitted it would run nearly 90 per cent empty when it opened. Clearly embarrassed the Government commissioned new models. The passenger numbers rose by 50 per cent.*

    *BRENDAN LYON: Clearly, I mean clearly the Government will be embarrassed by the, by the massive growth in the projections. It shows that we didn't get the work right before the project was selected and announced. That's why long term planning is important.*

    *WENDY CARLISLE: I guess it perhaps gives the appearance that you're looking for a model that gives you numbers which are more suitable to you.*

    *LES WIELINGA: Look, everything we do with that transport modelling's in a report this thick that's in the environmental assessment. Anybody that's got any expertise in projection modelling at all can review that and have a look at it. So we're not hiding anything. It's all in the report.*

    *WENDY CARLISLE: The report is 3 volumes running at 2,500 pages. We brought its passenger projection modelling to an expert transport planner who'd worked for the Victorian Government, assessing its transport strategy.*

    *WENDY CARLISLE (to Edward Dotson): I wonder whether you could tell me whether the demand modelling that's in the Environmental Assessment for the CBD metro allows you to evaluate, scrutinise all the assumptions behind those models?*

    *EDWARD DOTSON, TRANSPORT PLANNER: No not at all because there are very few of the assumptions that that's been used in the model that's reported in the Environmental Effects Statement, even in the, technical paper on transport and traffic. The models should be used during the process of evaluating the options for meeting a particular travel demand okay.*

    *WENDY CARLISLE: In other words, whether or not to have a metro?*

    *EDWARD DOTSON: Whether or not to have a metro yes.*

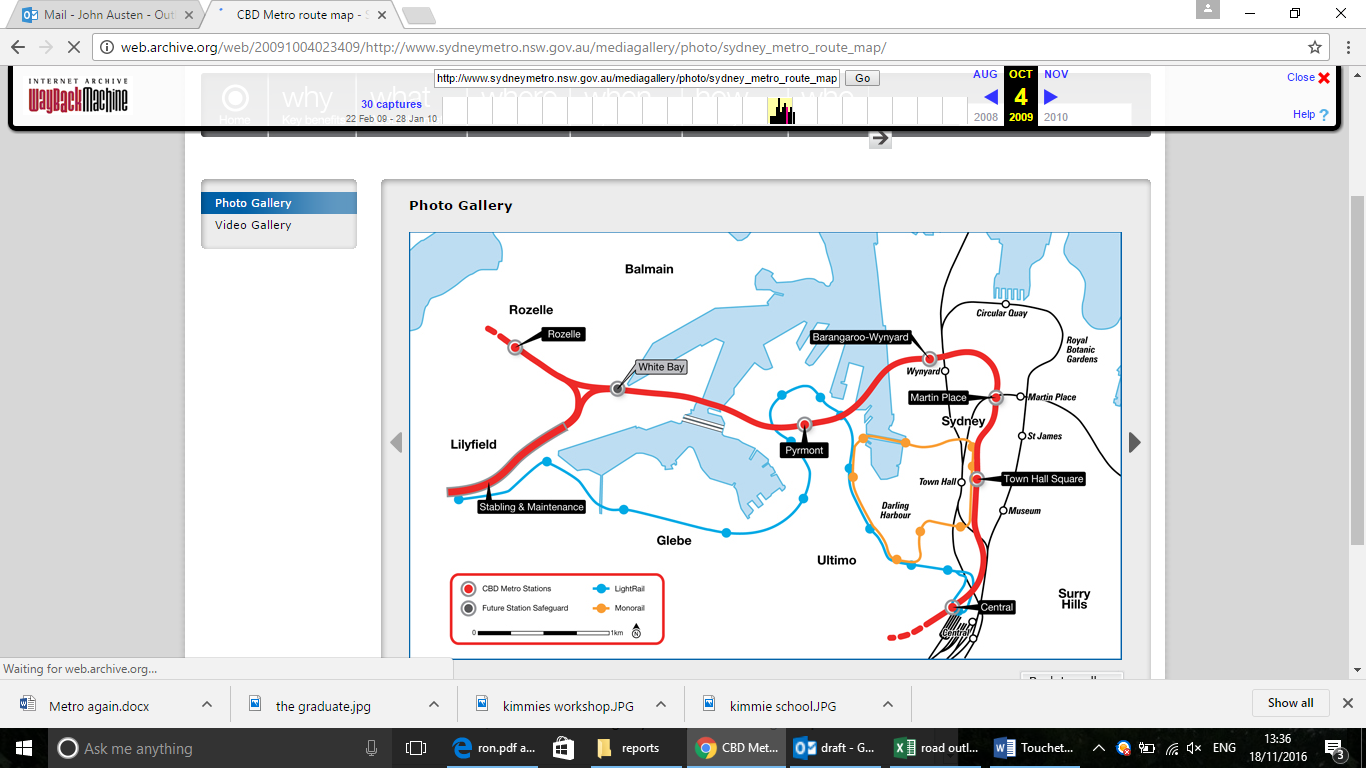
    *WENDY CARLISLE: So what do you make of the fact that it's back to front this process?*

    *EDWARD DOTSON: Um, well that a political decision is being made without waiting for the technical results basically.* [↑](#endnote-ref-65)
66. <http://www.abc.net.au/news/2010-02-21/keneally-scraps-cbd-metro-plans/338076> [↑](#endnote-ref-66)
67. <https://www.smh.com.au/national/nsw/metro-is-doomed-as-start-delayed-20100217-odyy.html> [↑](#endnote-ref-67)
68. <https://www.thejadebeagle.com/toucheth-not-the-monorail-metro-summary-business-case.html>.

    Christie’s Inquiry at p.200 concluded:

    *‘both of the original route options for a new CBD and Harbour crossing rail link, along with all other viable heavy rail route alternatives and all viable potential routes for “metro” lines through the CBD in the longer term, now need to be seriously, independently and transparently investigated as a matter of urgency, before the options are forever closed off or compromised by further ad hoc NSW government decision-making’.*

    The questioned alignment is shown in Map A1 below. **Map A1: CBD metro rail alignment questioned by Christie Inquiry**

    Source: <http://web.archive.org/web/20091004023409/http://www.sydneymetro.nsw.gov.au/mediagallery/photo/sydney_metro_route_map/> [↑](#endnote-ref-68)
69. E.g. as stated by the Hon. Penny Sharpe MLC <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardResult.aspx#/docid/HANSARD-1820781676-65936> [↑](#endnote-ref-69)
70. From Wikipedia:

    *‘The*[***neutrality***](https://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view)***of this section is***[***disputed***](https://en.wikipedia.org/wiki/Wikipedia:NPOV_dispute)*. Relevant discussion may be found on the*[*talk page*](https://en.wikipedia.org/wiki/Talk:Sydney_Metro_Northwest##)*. Please do not remove this message until*[*conditions to do so are met*](https://en.wikipedia.org/wiki/Template:POV#When_to_remove)*. (December 2016) ‘* [↑](#endnote-ref-70)
71. <http://www.infrastructure.nsw.gov.au/media/1092/inf_j14_871_sis_report_ch02_web.pdf> [↑](#endnote-ref-71)
72. <https://www.thejadebeagle.com/earth-to-canberra-2.html> [↑](#endnote-ref-72)
73. <https://www.smh.com.au/national/nsw/warnings-on-northwest-rail-link-plan-ignored-20140129-31mvw.html>.

    <https://www.smh.com.au/national/nsw/transport-for-nsw-response-to-questions-on-northwest-rail-link-20140129-31n2d.html> [↑](#endnote-ref-73)
74. <http://www.infrastructure.nsw.gov.au/expert-advice/state-infrastructure-strategy/> [↑](#endnote-ref-74)
75. <https://www.thejadebeagle.com/purgatory.html> [↑](#endnote-ref-75)
76. One view is service quality – customer focus – comprises non-price determinants of demand. These will vary across passengers and markets. <https://www.ipart.nsw.gov.au/files/d4510d8b-a1ef-492c-8b92-9f2400f0b693/Submission_-_Cityrail_fare_review_2006_-_Independent_Transport_Safey_and_Reliability_Regulator.pdf>.

    Most transport academies have extensive publications on this material; see for example <http://www.trb.org/Publications/PubsTCRPProjectReports.aspx>. And see note xlv below. [↑](#endnote-ref-76)
77. <https://www.urbandictionary.com/define.php?term=Gunzel> [↑](#endnote-ref-77)
78. Typical ‘standards’ for bus routes include certain percentages of housing within 400m of a bus stop. See e.g.: <http://sydney.edu.au/business/__data/assets/pdf_file/0013/106501/Daniels-Mulley-Explaining.pdf> [↑](#endnote-ref-78)
79. <https://www.thejadebeagle.com/earth-to-canberra-2.html> [↑](#endnote-ref-79)
80. <https://www.thejadebeagle.com/earth-to-canberra-2.html> [↑](#endnote-ref-80)
81. <https://www.dailytelegraph.com.au/news/opinion/sydney-metro-rail-plan-rodd-staples-is-the-bureaucrat-link-between-iemmas-idea-and-bairds/news-story/7ca7107b83df0c40c7c2125b45d08954> [↑](#endnote-ref-81)
82. <https://www.busaustralia.com/forum/viewtopic.php?f=3&t=33435> [↑](#endnote-ref-82)
83. <https://www.smh.com.au/news/national/luck-no-longer-enough-mr-fixit/2005/08/02/1122748639198.html> [↑](#endnote-ref-83)
84. <https://www.dailytelegraph.com.au/fast-train-to-sydneys-west-dumped/news-story/1fef9e40c42a57557d5df847a042b51e?sv=b8798c13fc72611b2d6b0e046e305be8> [↑](#endnote-ref-84)
85. By the beagle’s calculations from Wikipedia:

    London Tube averages: line length 36km, distance between stations 1.5km, train speed 33kmh.

    Paris Metro averages: line length 15km, distance between stations 0.6km, train speed >20kmh.

    Berlin Underground averages: line length 15km, distance between stations 0.9km, train speed 31kmh.

    Moscow Metro averages: line length 28km, distance between stations 1.7km, train speed 40kmh.

    Sydney Metro (full): line length 66km, average distance between stations 2.1km (2.5km excluding Bankstown line), train speed?

    For those interested here is Hong Kong averages: line length 20km, distance between stations 1.4km, unweighted speed claimed to be 46kmh – 23kmh to 75kmh on the 35km Asia World Expo line with 5 stations.

    For those really interested, since around 2000 Hong Kong appears to have adopted substantially larger tunnels than before – and possibly larger than Sydney Metro: <https://www.cedd.gov.hk/eng/publications/geo/doc/hktunnel_cat.pdf>. [↑](#endnote-ref-85)
86. <http://www.abc.net.au/news/2008-10-25/sydney-metro-plan-a-pipe-dream/181344> [↑](#endnote-ref-86)
87. <http://infrastructureaustralia.gov.au/policy-publications/publications/files/A_Report_to_the_Council_of_Australian_Governments.pdf> [↑](#endnote-ref-87)
88. <http://infrastructureaustralia.gov.au/policy-publications/publications/files/National_Infrastructure_Priorities.pdf> [↑](#endnote-ref-88)
89. <http://infrastructureaustralia.gov.au/policy-publications/publications/files/Report_to_COAG_2010.pdf> [↑](#endnote-ref-89)
90. <http://infrastructureaustralia.gov.au/policy-publications/publications/files/2011_Report_to_COAG.pdf> [↑](#endnote-ref-90)
91. <http://infrastructureaustralia.gov.au/policy-publications/publications/files/2013_IA_COAG_Report_National_Infrastructure_Plan_LR.pdf> [↑](#endnote-ref-91)
92. http://infrastructureaustralia.gov.au/policy-publications/publications/files/Australian\_Infrastructure\_Plan.pdf [↑](#endnote-ref-92)
93. <http://infrastructureaustralia.gov.au/news-media/media-releases/2014/2014_04_29.aspx>, [↑](#endnote-ref-93)
94. <https://www.thejadebeagle.com/roads-1-tar-baby.html> [↑](#endnote-ref-94)
95. <http://infrastructureaustralia.gov.au/news-media/media-releases/2014/2014_04_29.aspx> [↑](#endnote-ref-95)
96. <http://mysydneycbd.nsw.gov.au/sites/default/files/user-files/uploads/rail-future-web.pdf> [↑](#endnote-ref-96)
97. E.g. <http://infrastructureaustralia.gov.au/news-media/media-releases/2015/2015_03_05.aspx> [↑](#endnote-ref-97)
98. <https://www.sydneymetro.info/sites/default/files/Sydney%20Metro%20CSW%20Business%20Case%20Summary.pdf>

    <https://www.railexpress.com.au/2-8bn-sydney-metro-tunnel-contract-awarded/> [↑](#endnote-ref-98)
99. E.g. <https://www.thejadebeagle.com/no-deal.html> [↑](#endnote-ref-99)
100. <https://www.transport.nsw.gov.au/projects/current-projects/western-sydney-rail-needs-scoping-study> [↑](#endnote-ref-100)
101. <http://westernsydneyairport.gov.au/files/eis/WSA-EIS-Volume-4-Appendix-J-Surface-water-and-transport.pdf>

     *Western Sydney Airport Environmental Impact Statement,* Volume 4, Technical Reports Appendix J, August 2016:

     p97:

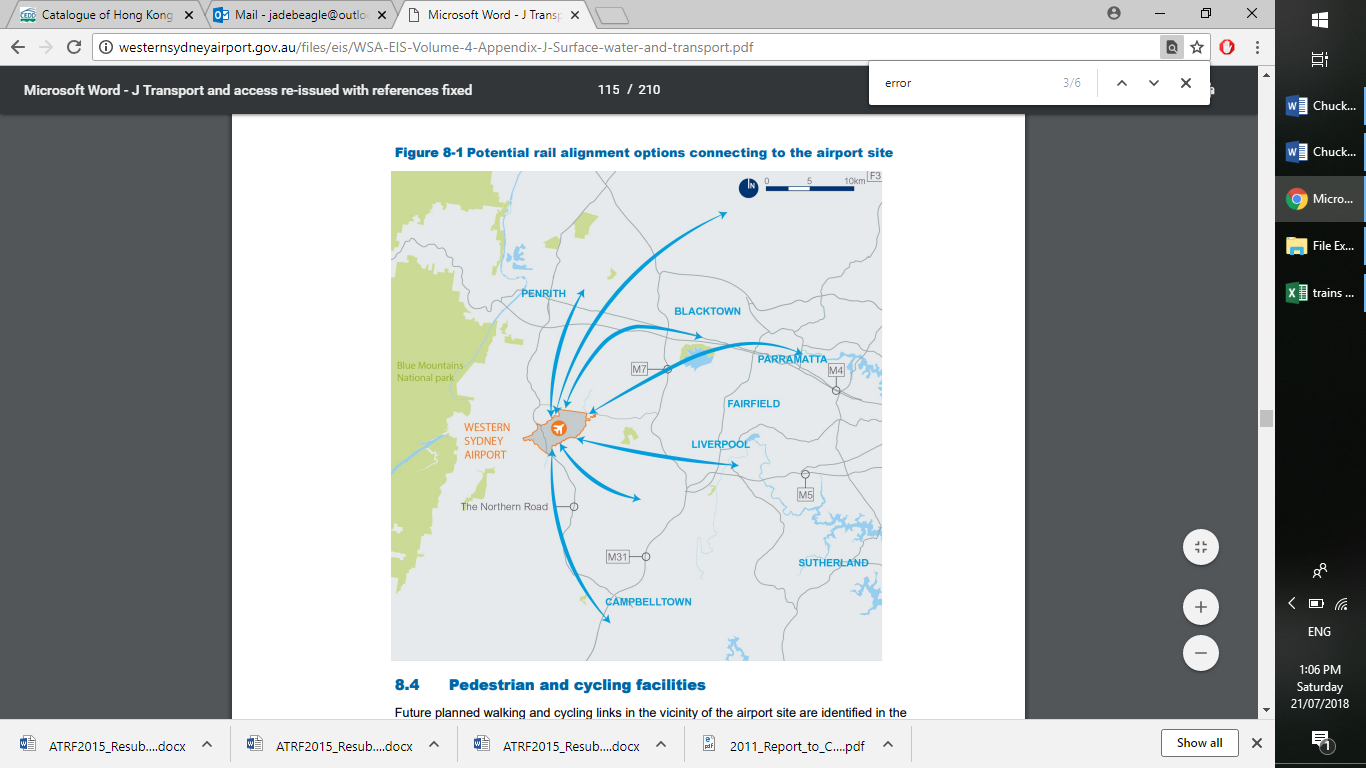
     *‘The public transport system assessed in the modelling for the long-term airport development is similar to the initial stage development with the exception that a rail line to the Sydney Trains network will be introduced.*

     ***Error! Reference source not found.*** *Broadly indicates how rail could approach the airport site. A potential final rail alignment would be determined by governments following the joint Scoping Study on rail needs for Western Sydney.’*

     P141:

     *‘Long term airport operations will be reliant on the introduction of an airport rail connection after 2031. Even with a South West Rail Link extension ……detailed planning is required to preserve additional corridors and transport upgrades.’*

     Perhaps the **Error!** Is caused by a missed keystroke to connect to Figure 8.1 (below). However, rather than showing (just) the connection to the Sydney Trains network via the South West Rail Link Figure 8.1 shows 7 potential rail approaches to the airport.

      [↑](#endnote-ref-101)
102. E.g. atrf.info/papers/2015/files/ATRF2015\_Resubmission\_136.docx, and <http://atrf.info/papers/2006/2006_Douglas_Karpouzis_a.pdf>. The authors are quoted extensively by Transport for NSW in e.g. <https://dokumen.tips/documents/principles-and-guidelines-for-economic-appraisal-of-transport-.html>. And see note xix above. [↑](#endnote-ref-102)
103. <https://www.smh.com.au/national/nsw/andrew-constance-s-3-billion-train-backflip-20180702-p4zp1p.html> [↑](#endnote-ref-103)
104. <http://www.ausstats.abs.gov.au/Ausstats/free.nsf/0/3a8ad68c49af21e4ca2575d100196729/$FILE/13010_1967_RailwayGaugeUnification.pdf> [↑](#endnote-ref-104)
105. <https://www.smh.com.au/national/nsw/andrew-constance-s-3-billion-train-backflip-20180702-p4zp1p.html> [↑](#endnote-ref-105)
106. Probable misrepresentation of feedback includes:

     *‘Around 120 written submissions were received via email and post from a range of community members, industry representatives and local councils. These submissions were provided in confidence and therefore individual submissions are not suitable for public release.’*

     The beagle, for one, did not request and is more than happy to waive confidentiality. Readers can find the submission here: <https://www.thejadebeagle.com/western-sydney-rail-needs---submission-october-2016.html>.

     It also includes:

     *‘The majority of submissions highlighted the difficulty of using public transport to travel between Western Sydney’s key centres. They noted that many journeys within Western Sydney are impacted by overcrowding, indirect rail connections and long commute times’.*

     This is unlikely to be true; overcrowding, long commute times and indirect connections are more typical of journey from Western Sydney to the city than for journeys starting and ending - within - Western Sydney. The effect of this misrepresentation is to distract attention from real issues of travel across the metropolitan area.

     [↑](#endnote-ref-106)
107. <https://www.thejadebeagle.com/sydney-salutes-the-toilet-gang.html> and <https://www.thejadebeagle.com/zero.html> [↑](#endnote-ref-107)
108. Crossrail tunnel internal diameters at 6.2m are substantially larger than legacy Tube tunnels some of which are as small as 3.56m; <http://www.crossrail.co.uk/construction/tunnelling/railway-tunnels/>. As was the case in Paris the decision to opt for small tunnels was made in the late 1800s; <http://wondersofworldengineering.com/london-underground.html> [↑](#endnote-ref-108)
109. <http://www.abc.net.au/news/2018-04-12/sydneys-original-tram-network-what-happened-curious-sydney/9610328>

     For wait time at Chatswood <https://www.smh.com.au/national/nsw/transport-for-nsw-response-to-questions-on-northwest-rail-link-20140129-31n2d.htmls> [↑](#endnote-ref-109)
110. <https://www.thejadebeagle.com/sydney-fares.html> [↑](#endnote-ref-110)
111. <https://www.claytonutz.com/knowledge/2008/december/be-alert-but-not-alarmed-misfeasance-in-public-office>

     *Directors and other officers must exercise their powers and discharge their duties with the degree of care and diligence that a reasonable person would exercise if the person were a director or officer of a company in the company’s circumstances and occupied the office held by, and had the same responsibilities within the company as, the director or officer*

     <https://www.minterellison.com/articles/legal-duties-and-liabilities-a-guide-for-commonwealth-board-members-1> [↑](#endnote-ref-111)
112. <http://www.infrastructure.nsw.gov.au/media/1162/interfleet_rail_network_strategy_review.pdf> [↑](#endnote-ref-112)
113. <https://trove.nla.gov.au/work/8392994?q&versionId=9680260> [↑](#endnote-ref-113)
114. <http://www.popflock.com/learn?s=Sydney_Metro_Authority> [↑](#endnote-ref-114)
115. <https://www.smh.com.au/national/nsw/canterbury-bankstown-mayor-considers-legal-challenge-to-metro-project-20180722-p4zsvz.html> [↑](#endnote-ref-115)
116. <https://www.sydneymetro.info/metro-trains> [↑](#endnote-ref-116)
117. <https://www.smh.com.au/national/nsw/sydney-s-first-driverless-metro-train-passes-major-test-20180702-p4zoya.html>,

     <http://www.sydney.com.au/monorail.htm> [↑](#endnote-ref-117)
118. <https://www.smartrailworld.com/how-is-satellite-technology-expected-to-monitor-and-manage-rail-traffic-on-european-tracks> [↑](#endnote-ref-118)
119. <https://atms.artc.com.au/about/> [↑](#endnote-ref-119)