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# Toucheth not the monorail; Western Sydney rail

*The curse invoked by destruction of the monorail continues to take its toll……….*

This article updates *‘Sydney 2 – toucheth not the monorail’*. It provides background to shorter articles and a submission to the study into western Sydney rail needs. A later article will look at the *Metro city and southwest summary business case* and at the ‘city deal’ for western Sydney.

## Western Sydney rail study

The Commonwealth and NSW Governments are sponsoring a ‘scoping study’ of western Sydney (passenger) rail needs. The study is seeking public submissions in response to a discussion paper.[[1]](#endnote-1)

The study is partly motivated by development of Sydney’s second airport at Badgerys Creek. Another factor is the evident failure of the current road building ‘strategy’ in western Sydney.[[2]](#endnote-2)

The *Discussion paper* notes future western Sydney projects may be part of a Commonwealth ‘city deal’. The purpose of such a deal is unclear.[[3]](#endnote-3)

Total financial cost of rail projects may be up to $25 billion. This may be on top of the (possible) $20 billion needed for those currently planned. The *Discussion paper* sensibly argues not all of this can, or should, be financed from general taxpayers via governments. [[4]](#endnote-4)

In the scheme of things funding is among the lesser matters for western Sydney rail. More important are the types of ideas promoted by the *Discussion paper*.

Apart from the usual recitation of population growth ‘imperatives’ and Badgerys Creek airport, the essential context for the *Discussion paper* arises from NSW state government decisions in 2012 (supposedly) based on the document *‘Sydney’s rail future’.*  That document, and decisions, need some explanation beyond that in ‘*Toucheth not the monorail’*. *[[5]](#endnote-5)*

## Sydney’s rail future

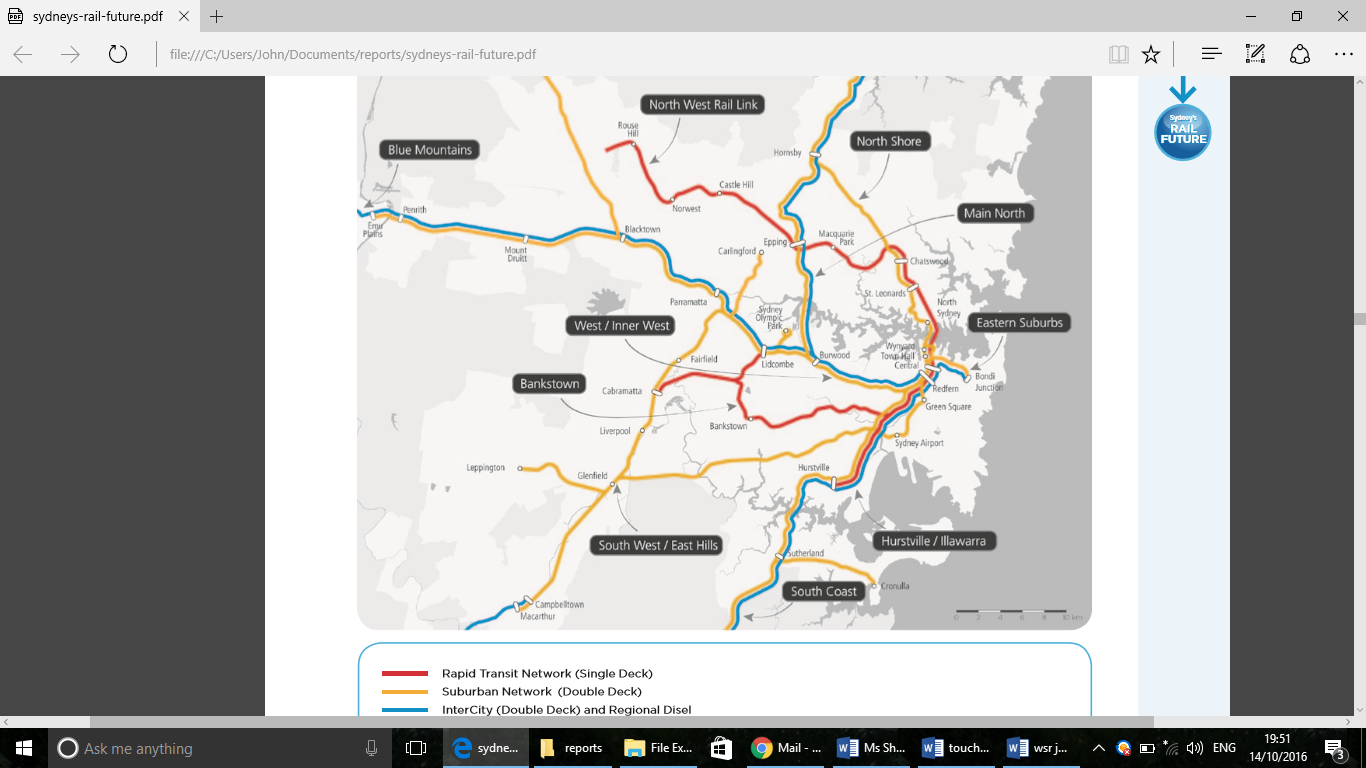
### Outline

*Sydney’s rail future*, a 28 page document released in mid-2012, outlined a policy for three tiers of passenger rail services in Sydney; intercity, suburban, and rapid transit.

The main justification presented for these tiers was that untangling a mix of services would enable optimal provision of capacity in the future. Support was provided in a brief discussion of the effect of current use of some major rail junctions. This use was held to create capacity problems which could be overcome by greater separation of service types i.e. less use of junctions.

The routes of the proposed tiers is shown in Map 1.

**Map 1: Three tier railway from *Sydney’s rail future***



Source: Sydney’s rail future

In 2012 Sydney already had three service tiers in its railway; intercity, suburban express, suburban all stops. In some central areas of the network, such as Redfern to beyond Strathfield, sets of tracks had been relevantly designated and used. The tiers were interoperable; one type of train could use any set of tracks, tunnels, platforms etc. so that there was a single rail system.[[6]](#endnote-6)

Within this single system there was clear differentiation between suburban and intercity fleets, even though both had evolved from single to double deck trains. *Sydney’s rail future* proposed this difference be maintained.

*Sydney’s rail future* also proposed a change from suburban express and suburban all stops to suburban and rapid transit services. A further change was proposed; separation of suburban and rapid transit trains. The essential issue was: what would happen on the rapid transit routes (red lines on Map 1)?

### Rapid transit and single deck trains

The question of what happens on the red routes, and where the red routes should be determined by the role and characteristics of rapid transit.

A primary characteristic of rapid transit proposed by *Sydney’s rail future* was use of single deck fleet.

Sydney metropolitan passenger rail tasks previously relied on single deck fleets but progressively moved to all double deck operations by the late 1990s.[[7]](#endnote-7)

Single deck trains will typically fit within the infrastructure envelope for double deck trains. Sydney enjoyed an advantage of flexibility; rail infrastructure constructed when only single trains were in use could accommodate double deck trains i.e. there was a single railway gauge.[[8]](#endnote-8)

This idea of a single railway gauge is central to the questions about the introduction of rapid transit in Sydney. It had been raised in the only authoritative recent examination of Sydney’s rail needs, the 2010 public inquiry led by Mr Ron Christie AM which, in a 572 page report, concluded that Sydney could not afford a new break of gauge. The inquiry was not cited in *Sydney’s rail future* or the *Discussion paper*.[[9]](#endnote-9)

Christie’s Inquiry conducted and reported a detailed examination of Sydney’s rail system and options for future development, including strengths and weaknesses of single deck and double deck trains. Presumably one of the reasons for Christie’s close examination of single deck trains was that the matter had been the subject of fierce internal debate within the NSW rail industry and the bureaucracy over an extended period.[[10]](#endnote-10)

In the event, for some time after its election in 2011, the (then new) Coalition state government stressed that its principal transport election commitment, the North West Rail, would be served by double deck trains.[[11]](#endnote-11)

### New harbour crossing and rail balancing

The logical implication of the North West Rail, not publicly recognised by the new government, was that a second harbour rail crossing would be needed. In committing the North West Rail to integrate with the existing system, the government was setting a trajectory for a second harbour crossing able to be used by commuter trains which would greatly add to capacity in every part of the network.[[12]](#endnote-12)

Such a commuter rail harbour crossing had been recommended by Christie’s Inquiry. This reflected a principle of ‘balancing’ to optimise use of capacity. Balancing involves ‘spreading’ people across trains and trains across lines, and seeking to ensure rail infrastructure is evenly used especially in inner areas. Balancing has several implications critical to any reasonable plan for rail in Sydney.

First the network has very large loops such as Hornsby, Central, Burwood (Strathfield) shown on Map 1 and, at a lesser scale, the city circle line. These maximise capacity in inner areas. This is because capacity would be limited by the ‘turnbacks’ otherwise needed; places where trains are reversed, ‘turned around’ to run in the opposite direction. The number of trains that can be turned around at the end of a track will be less than can run on that track.[[13]](#endnote-13)

Second, one implication of this is: maximum use of expensive inner area infrastructure requires several lines converging from outer areas. Another implication is: it is prima facie inefficient to turn back trains in central network areas or where there are high property costs; it may be better to turn back trains in outer network areas. Application of these ideas to Sydney gives rise to an ideal of balancing the capacity of lines south and north of any harbour crossing by either very large loops (as shown in yellow in Map 1), or by having an equal capacity of converging lines.[[14]](#endnote-14)

One possibility of so doing is to have ‘stubs’ on lines; trains can be housed at these places and join the network when needed. The claim that Sydney city and southwest metro will have more trains on the CBD segment than on the Bankstown segment may imply an (unillustrated) presence of stubs on the metro.[[15]](#endnote-15)

Third, as a corollary to these, reliability and punctuality (facets of capacity) are increased by balancing; by large scale loops and junctions that allow for converging lines. Similarly, the probability of reliability and punctuality decreases with the length of single (without junctions) track.

Another implication of the balancing principle for Sydney is that a commuter rail line between Epping and Parramatta, in creating a new loop, would complement the rail operations of harbour crossings. Such an Epping-Parramatta commuter connection would provide new access from residential areas in south western Sydney to employment etc. opportunities in the global arc (Macquarie Park to Kingsford Smith Airport on Map 1), without the need to travel through the CBD.

Such a rail line would complete a direct link Parramatta-Chatswood and a rail system for the entire length of the global arc; plans which had been truncated by the former Labor government. Completion of this plan was recommended by Christie’s Inquiry. It did not appear in *Sydney’s rail future*.

### *Sydney’s rail future* – questions arising from rapid transit routes

Leaving money aside, the rapid transit proposals of *Sydney’s rail future*, the red routes, make the ideas of Parramatta-Chatswood rail and another commuter rail harbour crossing more difficult. Later decisions may have rendered them impossible.

Map 1 implies the existing commuter rail segment Epping-Chatswood would be converted to rapid transit. This would change the potential for any Parramatta-Chatswood via Epping railway.

Christie’s Inquiry had revealed that previous proposals for rapid transit in the CBD could have sterilised alignments needed for a commuter rail harbour crossing. This gravely serious claim was a basis for arguments that all future Sydney rail plans be transparent. *Sydney’s rail future* did not recognise this issue.[[16]](#endnote-16)

Similarly, *Sydney’s rail future* did not apparently recognise the balancing principles noted above. There are three red lines south of the harbour but only one north. The large loop created by the then new Epping-Chatswood line was to be cut by rapid transit. Similarly other conceptual loops, such as Lidcombe-Bankstown-Central, and Lidcombe-Cabramatta-Fairfield would be visibly cut. The potential for new loops such as Castle Hill-Blacktown-Strathfield/Central would be diminished.

Less obvious is that the potential to link the north west and south west of Sydney would be diminished. Indeed the development of rail capacity in the south west of Sydney (at least) could be made problematic by obstacles in the way of another commuter rail harbour crossing that is (possibly) needed to increase capacity use on lines through Blacktown and Glenfield on Map 1.[[17]](#endnote-17)

Apart from such questions, the ideas of rapid transit set out in *Sydney’s rail futures* involved ambiguities and internal inconsistencies.

Rapid transit was said to have frequent ‘turn up and go’ services with high capacity and high reliability. Each of these claims is questionable. Passengers will not ‘turn up and go’ on a train which may go to one of several destinations such as Hurstville, Lidcombe or Cabramatta shown on Map 1. Also reliability is irrelevant to passengers on ‘turn up and go’ services. [[18]](#endnote-18)

Rapid transit was said to be planned for high demand areas of the network and provide links between suburban regions and busy inner city areas. The relevant routes on the map are not coincident with the highest demand areas. Moreover rapid transit elsewhere does not generally link regions with city areas; this is a task for commuter (suburban) rail.[[19]](#endnote-19)

Rapid transit was said to have a ‘relatively high number of seats’ and be fast. These are generally not facets of rapid transit systems elsewhere. A defining characteristic of rapid transit trains is their relatively few seats. Such sacrifice of comfort is acceptable if most passengers travel short distances between stations that are close together. The closeness of station stops mean that rapid transit trains are relatively slow over the route, which in turn is in the interests of the safety of the many passengers who need to stand.[[20]](#endnote-20)

Among the inconsistencies in *Sydney’s rail future* were: suburban trains having higher frequencies than adjoining rapid transit trains; suburban train frequencies which were implicitly claimed as implausible; misunderstanding of differences between journeys and trips (times) which may have given rise to rapid transit routes on which passengers are expected to stand for an unduly long time. The most important inconsistency, however, is physical segmentation of rapid transit from suburban but not segmentation of suburban from intercity.

Also relevant is that *Sydney’s rail future* did not identify Badgerys Creek which had been the preferred site for a second airport since at least 1999.

### Decisions supposedly based on *Sydney’s rail future*

*Sydney’s rail future* presented an analysis of several options to support its recommendation for a three tier railway. However, its treatment of options was misleading and not consistent with Map 1.

Its ‘suburban option’ was said to entail use of an entirely double deck fleet on the existing railway using ‘current’ technology. This is a false option and would not be advanced by any competent person. For example, as noted earlier, Sydney’s system had previously employed both double and single deck train, and in fact still does. New technology such as automated train control systems (such as ETCS) from Europe has been trialled on Sydney’s system.[[21]](#endnote-21)

Also possibly misleading was its statement about the preferred option. One option, an ‘independent’ railway, was described as:

*‘a dedicated metro system, independent from the existing Sydney rail network, including a new harbour crossing and CBD line’*.[[22]](#endnote-22)

The tabular assessment rated an ‘*independent transit system option’* worse on all criteria than the preferred option *‘Existing network New CBD rail capacity and Harbour crossing’.* Nonetheless, the metro currently under construction is an independent transit system, as proposed in Map 1.[[23]](#endnote-23)

Decisions have been made to implement many of the Map’s proposals, but others seemed to remain in limbo. These included extensions of metro to Lidcombe, Cabramatta and Hurstville.

The last of these may be controversial; as freight trains run on two of the four tracks to Hurstville a metro extension could reduce freight capacity to industrial areas near Wollongong, the privately owned Port Kembla, and mills etc. near Nowra on the south coast. This possibility was not flagged in *Sydney’s rail future*.[[24]](#endnote-24)

### Infrastructure configuration and break of gauge

Other subsequent decisions went beyond the proposals of the document; in point are decisions regarding configuration of rapid transit infrastructure.

The question of rapid transit infrastructure was not prominently addressed in *Sydney’s rail futures*.

The document contained no hint of a matter that would be the most fundamental decision for railways in Sydney since before the Great Depression and possibly the most consequent decision in Australian infrastructure at least since World War II; a break of gauge accompanying rapid transit.[[25]](#endnote-25)

The uniform gauge of Sydney’s rail system is reported to be broken by construction of tunnels for rapid transit that are too small for, can never be used by, existing commuter trains. While plans to convert some existing Sydney lines to metro are technically feasible, conversion of the new rapid transit lines to some other rail types will be virtually impossible at any time in the future.[[26]](#endnote-26)

A break of gauge decision does not seem necessary for metro. It is not necessary for a rapid transit system to have dedicated tracks or tunnels. Christie’s Inquiry found that it is possible to run both single deck and double deck trains on the same infrastructure; that is to combine rapid transit and commuter rail, such as is done on the RER system in Paris. This should be obvious because Sydney tunnels that are used by the double deck fleet were built when the fleet was single deck. Presumably this was among the reasons for Christie to warn against introducing a break of gauge.[[27]](#endnote-27)

Some existing Sydney commuter trains may be unable to regularly use rapid transit alignments because of factors such as gradients, curvature, power supply, and train control and station systems. As such, small tunnels are superfluous to avoiding an ‘operational takeover’ of rapid transit lines by commuter trains.

The effect of a small tunnel size decision, therefore, would be to prevent combined rapid transit and commuter operations in any part of the network, and to effectively preclude retrofit opportunities. It would lock in (sand) stone the rapid transit routes, and may lock out commuter rail options that rely on use of those routes. This could options throughout western Sydney if the potential for another commuter harbour crossing has been negated.

Such a decision has been seen to be unique in the history of NSW railways. It runs contra to the ideals of railway standardisation underlying Federation as well as Bradfield’s building of infrastructure that could accommodate rail carriages larger than then in use. As such, and in the absence of prior indication in *Sydney’s rail future,* it would be bound to attract speculation that rapid transit motives include matters unrelated to transport.[[28]](#endnote-28)

And speculation there has been; raising matters such as industrial relations, privatisation, real estate development, politics and bureaucratic infighting. These have not been openly rebutted.[[29]](#endnote-29)

## The discussion paper

### Options

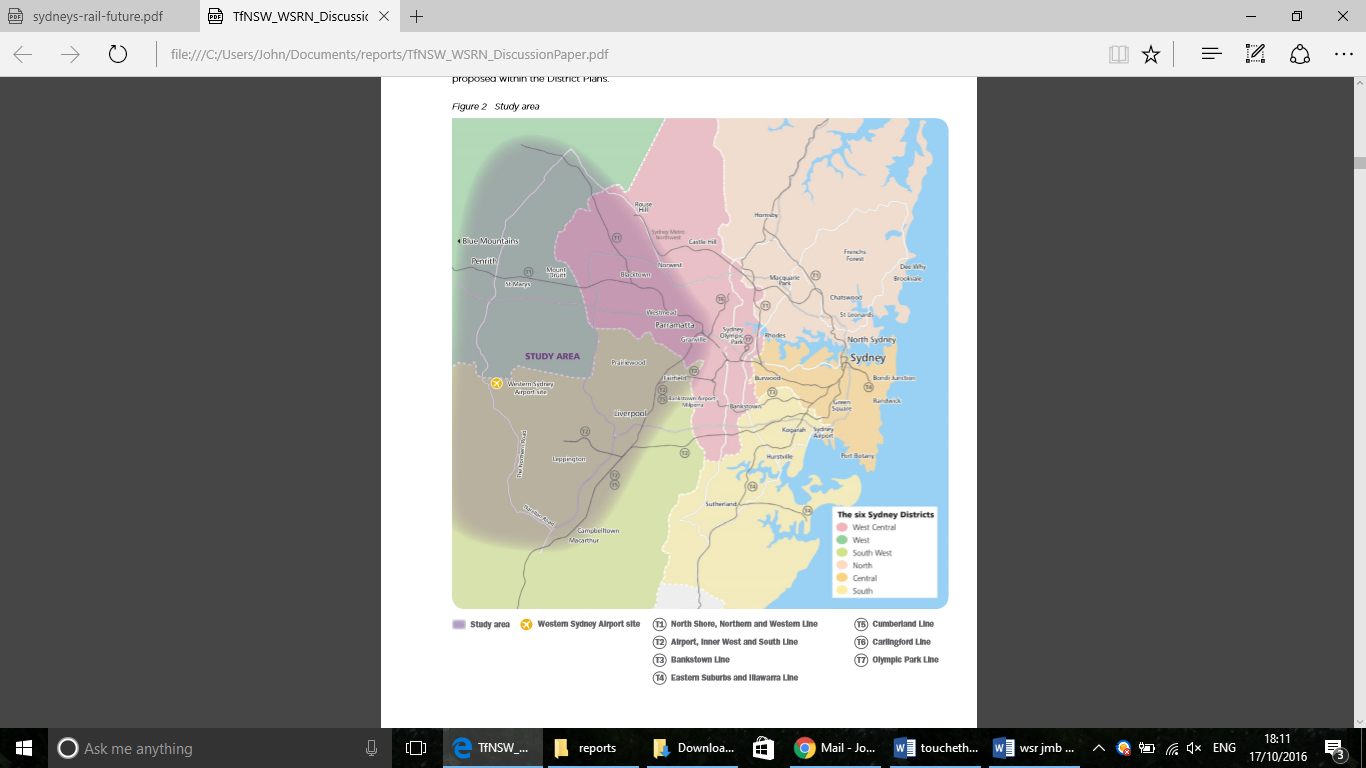
The 56 page *Discussion paper* makes frequent reference to *Sydney’s rail future* but, by including Badgerys Creek airport as a driver of rail needs, takes a more expansive view of future rail projects.

It sought submissions in response to a series of questions such as what type of services should be a priority for Badgerys Creek airport, and how should projects be funded. Virtually none of these questions can be sensibly answered unless some basic matters are properly settled such as: study area; types of demand for rail; effects of recent decisions; network wide impacts; freight etc. Unfortunately the *Discussion paper* does not satisfactorily address these issues.

### Study area

Map 2 shows the intended study area.

**Map 2: Discussion paper, Western Sydney study area**



Source: Discussion paper

One difficulty with this limited study area is that urban rail operates as a system; factors in one area will determine options in others. Indeed some options in the *Discussion paper*, such as a Revesby-CBD metro (Map 4 below), are outside the study area.

Another difficulty is that the indicated study area excludes a large area now under investigation for possible residential and employment land release; the Greater Macarthur Land Release area.[[30]](#endnote-30)

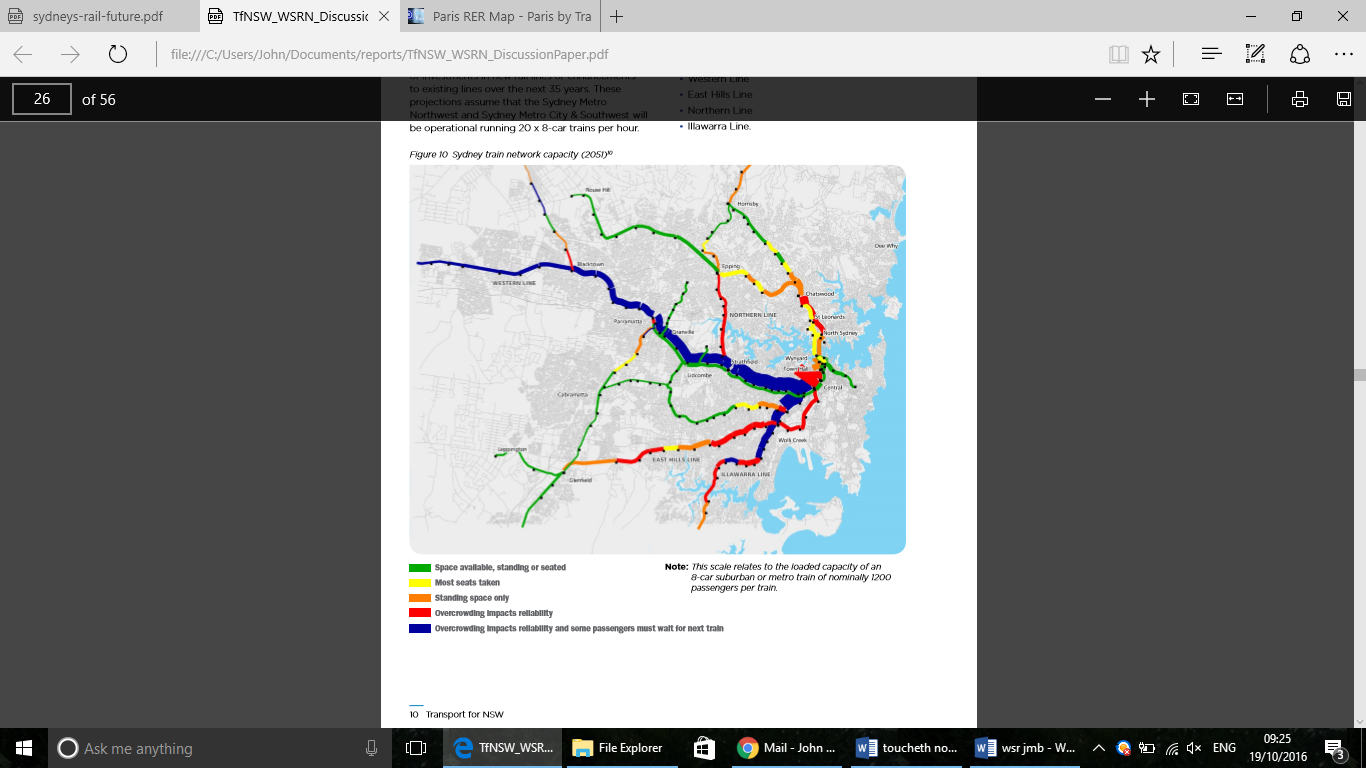
Map 2 is unsatisfactory as a guide to the location of issues, problems or possible solutions.

### Underlying demand for rail

Among the claimed reasons for the *Discussion paper’s* options are forecasts of rail use. Such forecasts are used to assess capacity utilisation and adequacy.

Map 3 shows the *Discussion paper*’s views on adequacy of network capacity in 2051.

**Map 3: Discussion paper, network capacity use 2051**



Source: Discussion paper

Map 3 shows the Western Line (between Blacktown and the CBD) and the Illawarra Line are expected to face the most significant capacity issues.

However, Map 3 is vague and ambiguous. Rail service types are not adequately defined, nor are service levels. The time-of-day at which capacity is measured is not stated; presumably the map refers to the period of most intense demand, the morning peak. The hierarchy of lines is inconsistent; green lines indicate there is room on board for standing or being seated, yet yellow and brown lines show this too.

The primary (capacity) issue for commuters, duration of standing, is not shown on the map. The intention might have been to suggest this is irrelevant where there are green lines, however, there are questions about the credibility of at least some coloured lines on the map.

For example, the map indicates an expectation of available on-board room at Cabramatta in 2051, yet the author’s observation is that there is standing room only on some peak hour trains there today.

Worse, however, are the implications if the colours are correct. These implications include that Northwest metro does not adequately relieve pressure on the Western Line or the commuter line through Scholfields (north of Blacktown). That plenty of seats are available on Northwest metro trains while people cannot board Sydney trains on the Western line suggests metro is unattractive to people in those areas.

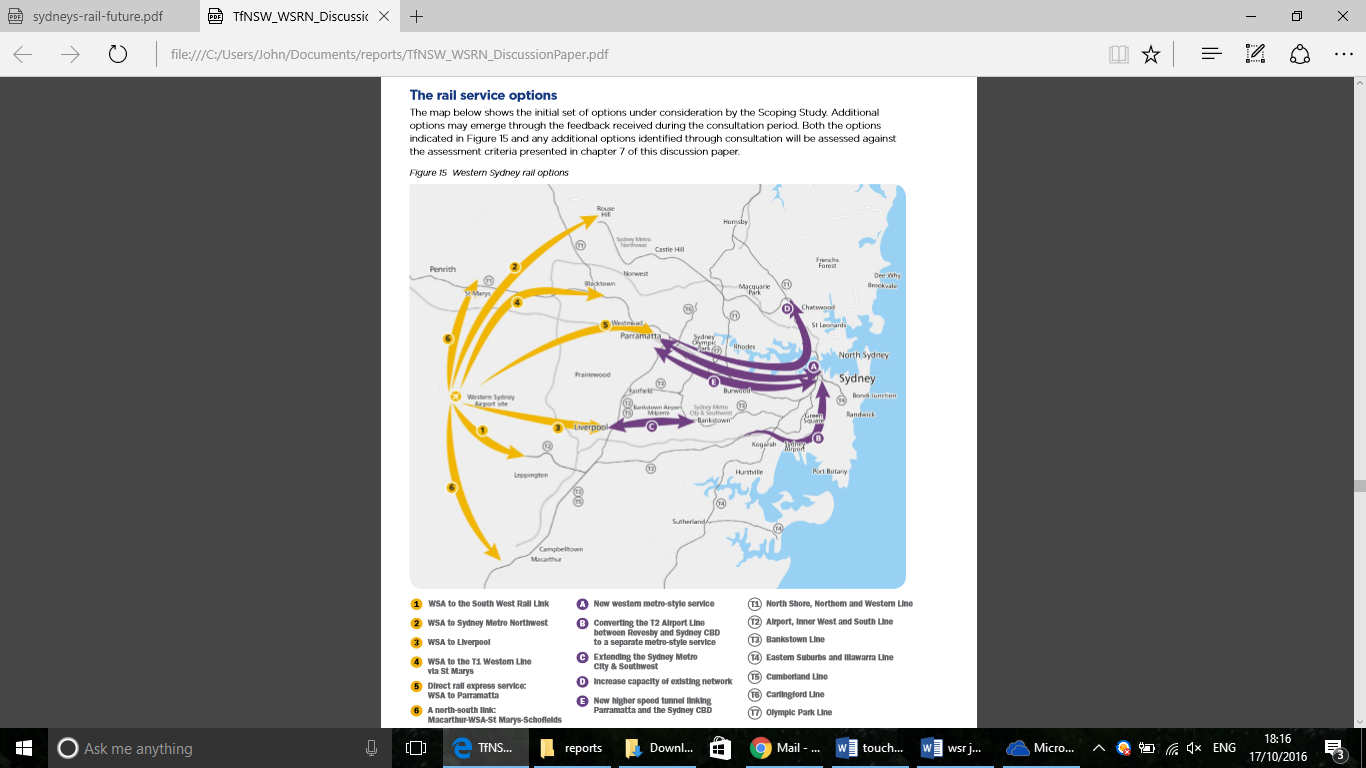
Similarly for the line through the airport, north of Wolli Creek. Sydney metro city and southwest (to Bankstown) is planned to be roughly parallel and near to this line yet does not have sufficient impact to alleviate overcrowding.

Moreover, Map 3 indicates overcrowding is expected to impact on reliability on the Bankstown Line at its approach to the Illawarra Line (above Wolli Creek on the map). By then, in 2051, the Bankstown line will have long been converted to metro. Similar implications also arise for the Illawarra Line; the discussion paper claims the Sydney metro will be extended to Hurstville. Map 3 shows severe overcrowding in that area.[[31]](#endnote-31)

At best Map 3 raises more questions than it answers.

### Options

The *Discussion paper* indicates criteria for assessment of options has already been settled. Indicative options have been identified, Map 4.

**Map 4: Discussion paper, identified rail options**

Source: Discussion paper

This is the only map in the *Discussion paper* showing future rail options.

A striking feature of Map 4 is the bifurcation of options on an axis Parramatta – Liverpool.

The map is exceedingly vague, especially in comparison to Map 1. It does not allude to the fact that the metro does not connect with the existing commuter system. It does not identify which lines are metro and which lines are not. It does not suggest that its Option 2 (to Metro Northwest i.e. a metro line) is technically incompatible with Option 1 (to South West Rail Line i.e. a commuter line).

Map 4 does not indicate the apparent result of the decision to introduce rapid transit to Sydney; to rule out options to seamlessly connect the area south west of Parramatta to areas north of Parramatta (without turning virtually all of Sydney’s passenger railways into metro).

Table 1 below attempts to start to rectify this by providing a high level view of the key rail issues with each option.

**Table 1: Presented options, key rail issues**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Option** | **Rail type** | **On board time to Parramatta** | **On board time to Sydney** | **Key issues** |
| 1 | Western Sydney Airport to South West Rail Link | Commuter (probably) | 52 | 55 | May require new commuter rail harbour crossing |
| 2 | Western Sydney Airport to Metro Northwest | Metro (probably) | 35 | 57 | On board time greatly exceeds typical standing time design. Length introduces further fragility to metro system |
| 3 | Western Sydney Airport to Liverpool | Metro (probably) | 49 | 64 | Requires augmentation Liverpool-Sydney. Transit times likely to be understated. On board time greatly exceeds typical standing time design. Length introduces further fragility to metro system |
| 4 | Western Sydney Airport to Western Line | Commuter | 33 | 48 | May require new commuter rail harbour crossing |
| 5 | Western Sydney Airport to Parramatta direct | Modified commuter | 15 | 27 | Transit time could be understated. Turnbacks at Parramatta/Sydney will limit capacity |
| 6 | Macarthur to Scholfields via Western Sydney Airport. | ‘Stand-alone shuttle’ | 35 | 55 | Incomplete option.  Transit time likely to be understated.  May require new harbour crossing.[[32]](#endnote-32) Option arises from the best choice, a commuter route to CBD via Chatswood, being negated by metro. |
| A | Parramatta to Sydney | Metro | Na | Na | On board time to CBD likely to greatly exceed typical standing time design. Option is incomplete: likely requires route out of CBD to north or east |
| B | Revesby to Sydney | Metro | Na | Na | Could suggest there is a better metro city south-west plan than presented i.e. to airport. Reduces commuter capacity in and peripheral to most of western Sydney. |
| C | Liverpool to Bankstown | Metro | Na | Na | On board time to CBD greatly exceeds typical standing time design. Length increases fragility of metro system |
| D | Parramatta to Sydney to Chatswood capacity | Commuter | Na | Na | The more relevant route (via Chatswood) has been allocated to metro. May require new commuter rail harbour crossing |
| E | Parramatta to Sydney CBD | Commuter | Na | 12 | Subset of option 5. Transit time could be understated. Turnback at Sydney will limit capacity |

Sources: options as identified in discussion paper. Rail type inferred from text in discussion paper. Travel time as identified in discussion paper. Key issues are from the author.

Table 1 suggests the key rail issues include: on-board standing time; fragility and capacity limits of systems without junctions; exclusion of commuter trains from desirable routes due to metro; the possible need for another commuter rail harbour crossing.

As noted earlier the last of these matters, another commuter rail harbour crossing, was the subject of a gravely serious claim in Christie’s Inquiry; that the (then) plan for a metro (and/or stub) in the CBD effectively precluded such an option. This contention was not addressed.[[33]](#endnote-33)

The table also raises suspicions that potentially strong rail options eg. commuter rail for Macarthur-Schofields may have been negated by decisions that permanently break gauge. Despite the *Discussion paper* calling for other options, such suspicion is reinforced by the omission of well-known ideas such as outlined in Table 2 below.

**Table 2: Some omitted ideas, possible benefits and possible reason for omission**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Option** | **Rail type** | **Possible benefit** | **Possible reason for omission** |
| i | Parramatta to Epping | Commuter | Connect south west to north west and global arc; part of original north west rail plan. Substantial increase in capacity. | Designated for light rail. Northwest metro uses part of the corridor. Commuter rail harbour crossing may be needed. |
| ii | Liverpool to Holsworthy | Commuter | Substantial addition to capacity | Could be inconsistent with a plan to extend metro to Revesby, reduces  ‘need’ for metro to Liverpool. Commuter rail harbour crossing may be needed. |
| iii | Camden/Narellan to Campbelltown | Commuter | Allows proposed Macarthur-Scholfields to make sense | Could be inconsistent with a plan to extend metro to Revesby, reduces ‘need’ for metro to Liverpool. Commuter rail harbour crossing may needed. |
| iv | Outer loop: Western Sydney Airport to South West Rail Link to CBD to North West Rail to St Marys to Western Sydney Airport | Commuter (double deck) and airport (single deck) | Connect south west to north west and global arc. Vast increase in capacity. Both commuter and airport trains run on same tracks. | Requires metro gauge (eg. tunnels) to be compatible with commuter trains. |
| v | Inner loop: Western Sydney Airport to South West Rail Link to CBD to North West Rail to Parramatta to St Marys to Western Sydney Airport | Commuter (double deck) and airport (single deck)Modified commuter | Connect south west to north west and global arc, centred on Parramatta. Vast increase in capacity. Both commuter and airport trains run on same tracks. | Requires Parramatta-Epping as commuter rail. Requires metro gauge (eg. tunnels) to be compatible with commuter trains. |

Source: author.

### Bias?

The vagueness of, uncertainties in and misleading elements of the *Discussion paper’s* maps create an impression of bias towards metro. Other aspects of the discussion paper reinforce this impression.

The *Discussion paper* does not address some of the key questions about rapid transit, for example the claims raised in Christie’s Inquiry or speculation about motives. It reiterates errors in *Sydney’s rail future* about the purposes and characteristics of rapid transit.[[34]](#endnote-34)

Its criteria for choice of rail options is repetitive and metro oriented.[[35]](#endnote-35)

The criteria ignores passenger standing time which is likely to be a dominant service quality issue for commuters in western Sydney. Its capacity analysis presents only train numbers and total passenger numbers, not seating; metro services are significantly poorer than commuter services on seating.

None of the material in the *Discussion paper* directly relates to standing time. The table of overseas airport railways does not show type of train, seating capacity or whether passengers stand for long trips. The options table does not indicate possible standing time.[[36]](#endnote-36)

There are inconsistencies in the locations and routes for metro in Sydney, especially compared with *Sydney’s rail future*; for example Option C suggests extension of metro to Liverpool rather than Lidcombe and Cabramatta as shown in *Sydney’s rail future* (see Map 1 above).

The freight question associated with a metro to Hurstville is not recognised; only a single mention is made of extension of metro to that station and it is unclear whether it is included in relevant maps.

### Doubt?

The seeming bias of the *Discussion paper* towards metro is consistent with other NSW government activities to promote community support of metro. These activities include multi-million dollar spending on advertising, and recent release of a glossy brochure summary business case.[[37]](#endnote-37)

There also is million dollar plus support for development of school ‘educational’ material extolling metro.[[38]](#endnote-38)

Hence it is interesting that all (thirteen) pictures of trains in the *Discussion paper* are of the current fleet; none are of a metro train. This might be compared to *Sydney’s rail future*, and the Sydney metro city and southwest business case summary and metro web sites which prominently feature pictures of metro trains.

## Concerns

Why are the 2012 decisions flowing from *Sydney’s rail future* an issue in and for western Sydney? It is worth recapping the primary concerns.

### Metro decisions

First, metro trains are to have far fewer, less than half, the seats of Sydney’s current trains. Many, if not most, metro passengers may need to stand. Standing time is likely a vital concern for those travelling more than twenty minutes, like commuters in Sydney’s west.[[39]](#endnote-39)

Second, unlike in Melbourne, the under-construction Sydney metro projects are reportedly designed to be permanently incompatible with the existing railway. Among the immediate implications: it will not be possible to connect the new airport to Sydney by just one railway; Sydney is headed for at least three different gauges. Another possibility is that the metro route in the CBD might preclude another harbour crossing for Sydney trains, severely limiting commuting potential in Sydney’s west.

Third, further suburban extensions to the under-construction metro may be needed for it to operate well. Just as the state government belatedly recognised that a harbour crossing is needed to make the north west segment effective, there may be growing views that some more commuter lines in western Sydney ‘need’ to be converted to metro.

Fourth and arising from these factors is the possibility that many residents in Sydney’s west, especially the south-west, will effectively be denied access to opportunities such as well-paying jobs and education in much of Sydney’s global arc. This possibility may in fact be a likelihood because of the vast sums being mooted for metros and higher speed railways. When the money runs out little may have been used to benefit western Sydney.

### Other passenger transport options

The *Discussion paper* provides little consideration of transport options that may facilitate development of, or substitute for, rail. While Western Sydney has several dedicated bus routes, T-Ways, the potential to expand these, or establish a proper bus rapid transit system, is not explored.

Also not explored is the potential to build-up from bus rapid transit to rail, which would require selection of corridors appropriate for multi-modal operation.

There is also a question as to whether plans for light rail assist or interfere with options for other rail forms, in particular commuter rail. For example, the preferred Parramatta light rail network implies conversion of the Clyde-Carlingford commuter line. This may make more difficult an extension of the commuter railway to Epping that may be necessary to connect western Sydney to the global arc. This is not indicated on any map and the question is not addressed.[[40]](#endnote-40)

### Freight

Other concerns arising from the *Discussion paper* include that the vital matter of freight is ignored, or pushed into an outer orbital study, even it is related to western Sydney passenger routes at present and options for the future.[[41]](#endnote-41)

Western Sydney is likely to become increasingly important to metropolitan and national freight tasks. For example, limitations at Botany may need to see much more international cargo routed through south Western Sydney and Port Kembla, especially so if there is a metro to Hurstville.

While there may be a view that freight trains should be separated from passenger trains, i.e. use different tracks, if funds or finance are limited it is likely that freight trains will need to at least share corridors with some passenger trains. The *Discussion paper* does not raise the issue of whether commuter railways are more amenable than metros to sharing corridors with freight.

### Commonwealth rail

Commonwealth interests in Sydney rail are neither recognised nor articulated in the *Discussion paper*. Among these present interests is the Australia Rail Track Corporation’s control of track south of Macarthur, including through the Greater Macarthur Land Release area, and an intermodal terminal at Moorebank near Liverpool.

The question of the extent of future Commonwealth interests is similarly not raised. At issue is whether the Commonwealth is focussed on connecting Badgerys Creek airport to Sydney or whether it is interested in wider matters.

### Broader issues: roads, cost, metropolitan plan

The *Discussion paper* does not recognise the fundamental importance of roads policy to rail. Relevant matters that have been overlooked include: parking; road charging; congestion pricing; subsidisation of road expenditures; the potential for some railways to influence speeds on roads.

At present well over $20billion is committed to major road projects in Sydney. With $20billion to be spent on metro, around $40billion of expenditure is underway. The *Discussion paper* notes a possible $25billion might be added to this.

It is unclear, at best, whether the project assessment frameworks used by bureaucracies can give meaningful answers when a ‘salami slicing’ approach is used; when projects are assessed in isolation from each other and network effects. It embodies the fallacy of composition. Worse unless all projects in a ‘strategy’ are assessed, assessments can be misleading; later projects may turn out to be positive only because they ‘bail out’ previous mistakes.

Rather the core issue revolves around identification of projects; not their assessment. That is: where did the ideas come from and what scrutiny has been applied to them? Christie’s idea of a legislated transport plan, made after rigorous public inquiry and debate, has not been applied.

Rail decisions seemingly locked-in by *Sydney’s rail future* which ignored Badgery’s Creek airport are reinforced in a *Discussion paper* which is concerned with that airport. This speaks volumes about the long term ‘strategy’ and ‘planning’ that took place in 2012.

## Overall

The information provided in the *Discussion paper* is unlikely to assist in eliciting informed and useful replies from the public, especially on the limited questions posed by the paper. The paper contains too many doubtful claims, mistakes and inconsistencies. Pivotal questions have been ignored.

Indeed the fact of the paper is a concern. It is a reminder that the state government pushed forward with highly committal policies in 2012 without reference to an airport at Badgerys Creek.

## Commonwealth role

A different approach is warranted to Sydney rail planning; one where the Commonwealth takes a proper role.

Previous articles discussed potential responsibilities of the Commonwealth in urban transport post the tectonic shifts in Constitutional assumptions brought on by Williams (2). [[42]](#endnote-42)

The Commonwealth has already committed some funds to Sydney metro. It may be that an expectation of being asked for more funds is seen as justification for the Government’s bureaucracy to have some role in tackling western Sydney rail issues.

Such a superficial approach would almost guarantee problems. Rather, for the Commonwealth to make a positive contribution to rail in western Sydney, it needs to frame its activities in an appropriate governance framework. An invocation of ‘city deals’ is not such a framework.[[43]](#endnote-43)

A proper framework align powers and responsibility. This requires the Commonwealth to step away from the current infrastructure-booster view that it is an ATM for state government projects, even if the password is changed to ‘citydeal’. Conformance with Constitutional principles, a rationale, is far more important than a chequebook.

### Responsibility

Commonwealth urban transport activities such as in western Sydney should reference its urban transport responsibilities. These responsibilities should align with, be guided by, explicit and implied Constitutional powers. Three potential sources of power are: Constitution s.51; stewardship of assets; implied Commonwealth (executive) powers.

#### Constitution s.51

Constitution s.51 covers railway acquisition / construction with state consent, or control of railways for defence purposes. Beyond railways, reference might be had to s.51 powers over interstate and international trade and commerce, and matters physically necessary for these.

This is directly relevant to railways that connect to Badgerys Creek or Kingsford Smith airports.

#### Stewardship of assets

The Commonwealth could assume responsibility by acquiring urban transport assets.

Commonwealth ownership of assets may be pivotal to the diligence applied by the Government’s bureaucracy to western Sydney rail issues. Without ownership, the bureaucracy may lack the motive, means and opportunity to apply the diligence it shows in other areas such as aviation policy.

There are precedents. The Australian Rail Track Corporation controls some rail lines in most of Australia’s major cities. The Commonwealth also owned international airports; while these are now leased, in the eyes of the public the Commonwealth is the steward of those assets.

Perhaps of most interest is that the Commonwealth, via the Whitlam Government, once offered to take responsibilities to build and pay for new railways in western Sydney.[[44]](#endnote-44)

#### Implied executive powers

Among the Commonwealth’s implicit powers are those arising from its position as a national Government. Two urban transport matters uniquely suited to a national government are: national cohesion, strengthening accountability of each level of Government.[[45]](#endnote-45)

National cohesion is a unique purpose of a national Government. Interoperability should be among the most important transport goals for a national Government yet it is in question as state government decisions are introducing a break of gauge in Sydney.

This author has argued there is a role of the Commonwealth in keeping the community informed about the urban transport performance of their state government.

### Performance

The *Discussion paper* does not provide evidence that the Commonwealth is taking on or meeting any responsibilities for western Sydney rail.

The *Discussion paper* does not provide a guide as to what responsibilities the Government is asserting via s.51 including in relation to Badgerys Creek airport

It does not suggest Commonwealth ownership of rail related assets.

The *Discussion paper* has not opposed, or even commented on, the new break of gauge in Sydney.

State accountability is undermined, not enhanced, by flaws in the *Discussion paper* such as the failure to properly discuss the implications of state government decisions.

Has the curse identified in *Sydney 2- toucheth not the monorail* spread to the Commonwealth?

### What the public should expect

At a minimum, the public should expect any discussion paper issued by the Commonwealth to be sufficiently balanced and informative to allow useful public responses.

In most cases Commonwealth consideration of projects is likely to involve questioning of state government proposals and provision of information and analysis that may not immediately support state views. In fact this is highly desirable, as previously put by the author:

*‘public disclosure is a, if not the, most powerful incentive for better urban transport. If the Commonwealth is to have any involvement in the field there is a compelling case for it to put all relevant matters before the public, not merely provide funding to the project du jour. To improve the performance of and community experience with urban transport it could usefully draw public attention to a range of matters such as: actual system performance; the existence and content of independent (of State government) expert views on transport planning or project issues; interoperability……..*

*None of this trammels on States’ rights…...*

*a htfu in attitude is needed. Otherwise the search for transport problems for the Commonwealth to think about solving, such as through a national infrastructure audit process, can create larger more intractable problems in transport and beyond.’ [[46]](#endnote-46)*

These expectations have not been met. Unless they are met, the public can have little confidence that later decisions by the Commonwealth, including project funding, would be soundly based.

### The future

The Commonwealth needs to do much better, especially in the area of improving state accountability by providing accurate and balanced information to the public.

There would seem little point in expecting such improvement in the current process, however, the relevant parties might be given one last opportunity.

Reflecting this, and for reasons previously outlined, if the real questions about Sydney rail planning are not publicly answered soon, the Commonwealth should engage at the Parliamentary rather than Executive Government level.[[47]](#endnote-47)

### Inquiry

Given the millions of people to be affected the $45 billion possibly involved and the nature of issues identified in this article a public inquiry would be in order in the event that proper explanation of current policy is not forthcoming.

Such an inquiry should look to establish the relevant, comprehensive factual basis from which reasonable options might be developed. It should also provide a range of option types.

The essential facts that remain to be established are the reasons for and effect of state government decisions relating to the introduction of rapid transit (metro) to Sydney, including those supposedly based on *Sydney’s rail future*.

The purpose of establishing the reasons for these decisions is to provide the public with confidence. The speculation regarding these decisions should be addressed. A state government advertising campaign is unable to do this.

The purpose of establishing the effects of these decisions, especially the effects on transport systems, is to understand the potential type and range of options that might be adopted.

The inquiry should develop an extensive range of options and conduct a preliminary exploration of their effects. As part of this the inquiry should examine the potential for changing (the effect of) previous state government decisions.

The purpose of such option development is to put to rest any community concerns that discussion is being managed towards an approach that reflects unstated objectives of the state government; that good options are being dismissed for no good reason.

The inquiry should recommend actions to be undertaken by the Commonwealth. This should involve examining the legal and practical limits to current Commonwealth power and the extent to which Parliament, as distinct from the Government, should lead engagement with NSW.

One purpose of making such recommendations is to improve Commonwealth governance. Another purpose is to confer an appropriate and visible level of authority on people acting on behalf of the Commonwealth, such as officials.

The above indicates that such an inquiry should be in public, with the taking of submissions, evidence etc., and be subject to relevant Parliamentary procedures and obligations.

J Austen

4 November 2016

**Notes**

1. Department of Infrastructure and Regional Development, Transport for NSW, *Western Sydney Rail Needs Scoping Study Discussion Paper*, September 2016, (Discussion paper) at: <http://www.westernsydneyrail.transport.nsw.gov.au/> [↑](#endnote-ref-1)
2. The airport motivation is evidenced by the *Discussion paper’s* relatively long explanation of Badgerys Creek (Western Sydney) Airport. Air passenger numbers outlined in the discussion paper could only be feasibly handled on the land side by rail.

   Failure of the roads strategy is evidenced by traffic jams not diminishing and in some cases appearing on roads which have been upgraded, such as Camden Valley Way and Narellan Road. [↑](#endnote-ref-2)
3. *Discussion paper* at p4. [↑](#endnote-ref-3)
4. While $25 billion is cited in the *Discussion paper* as the total cost of some options, the paper provides no background or source for such costs, nor even which options might add up to this total. Further, the paper does not indicate whether this figure is in addition to cost estimates for Sydney metro. [↑](#endnote-ref-4)
5. NSW Government, *Sydney’s rail future, June 2012* at: <http://www.transport.nsw.gov.au/sites/default/files/b2b/publications/sydneys-rail-future.pdf>.

   *Sydney 2 exhibit 2 - toucheth not the monorail* May 2016 at: thejadebeagle.com. [↑](#endnote-ref-5)
6. Tracks between Redfern and Strathfield are designated in three pairs; main, suburban, local. [↑](#endnote-ref-6)
7. Bradfield’s design included tunnels etc. able to accommodate substantially large rolling stock than the single deck trains then in use. See: Sandy Thomas, *Fixing the trains in Sydney – 1855 revisited*, August 2013 at: <http://www.catalyst.com.au/Public_files/Fixing_the_trains_in_Sydney_1855_revisited_Sandy_Thomas_August_2013_portrait_format.pdf>

   Single deck trains continue to operate on Sydney’s metropolitan network. These include regional diesel and Countrylink trains, interstate trains like the Indian Pacific, heritage operations and freight trains. [↑](#endnote-ref-7)
8. Railway gauge is commonly thought to refer to distances between rails eg. 1435mm is standard gauge. However the term railway gauge also applies to infrastructure dimensions such as height of overhead structures such as tunnels and distance to adjacent structures such as platforms; it relates to the permissible dimension of trains. [↑](#endnote-ref-8)
9. *Independent Public Inquiry into a Long Term Transport Plan for Sydney, Final Report,* May 2010 (Christie Inquiry) at: <http://www.catalyst.com.au/> [↑](#endnote-ref-9)
10. The questions of single and double deck trains, and suburban and rapid transit (metro) services, were considered in depth in Christie’s Inquiry. Single and double deck trains were compared in detail in Appendix 3 of that Inquiry.

    The internal debate has been referred to as an *‘exceptionally ugly railway planning brawl’* and is outlined in Sandy Thomas, *Fixing the trains in Sydney – 1855 revisited*, August 2013. [↑](#endnote-ref-10)
11. See: *Sydney 2 exhibit 2 - toucheth not the monorail.* [↑](#endnote-ref-11)
12. See: *Sydney 2 exhibit 2 - toucheth not the monorail.* [↑](#endnote-ref-12)
13. Unless there are multiple lines at the turnback, or space behind the turnback to store several trains. For example, prior to recent improvements the Bondi Junction turnback had a much lower capacity, 14 trains per hour, than the adjacent running lines.

    One additional capacity-adding characteristic of the city circle line is that passengers can choose among various stations for boarding the afternoon. For example for airport line trains, passengers can choose between Town Hall (first stop) and Museum (fifth stop); some commuters who will travel for a relatively long time opt for Town Hall in order to be assured of a seat, even though this adds significantly (more than 10 minutes) to trip time compared with boarding at Museum. Others who will travel for a shorter time opt for Museum, thus balancing loads. The effect is possible because stations are close together and the railway operates as a loop. While this is a characteristic of some rapid transit or metro systems in other cities, it is not part of the plans for metros in Sydney. [↑](#endnote-ref-13)
14. This is part of the reason for Christie’s Inquiry criticising plans for a ‘Western Express’ train that would terminate at Wynyard under the city; efficient use of line capacity would require substantial room under Wynyard to allow for turnbacks. See Christie Inquiry at pp.205-207

    One of the basic ideas behind the idea of a Wynyard turnback is that in Sydney some longer distance trains have been historically turned back at Central (‘country platforms’) which is no longer near the centre of the city, and it would be a good idea to deliver passengers further into the city centre. The layout of tracks at the country platforms may indicate the scope of room required for turning back trains.

    Notwithstanding these criticisms, the proposal appears to have returned. It may be part of Options A and E in the *Discussion paper*. See: *Discussion paper* at p.39. [↑](#endnote-ref-14)
15. The intention is for metro to operate additional trains between Sydenham and Chatswood for interpeak periods. See: Transport for NSW, *Sydney metro city and southwest, Final Business Case Summary,* October 2016 at p.24. [↑](#endnote-ref-15)
16. Christie Inquiry at p.200. [↑](#endnote-ref-16)
17. Proponents of metro will probably point out that cessation of Sydney train operations on a newly metro-ised Bankstown line will free up capacity (train paths) in the city circle. That may be true, but this result could probably be at least equalled by a commuter train harbour crossing, with greater certainty and likely increased long term flexibility. [↑](#endnote-ref-17)
18. *Sydney’s rail future* p.25.

    In rail terminology ‘reliability’ means whether a service operates through (or stops at) particular stations. It may be that *Sydney’s rail future* intended to refer to punctuality which, in railway terms, means a particular train running to timetable.

    Neither reliability nor punctuality are relevant to ‘turn up and go services’ since a delay to or cancellation of one train will ‘delay’ all following trains, meaning passengers on a station perceive only a single instance of ‘train is late’. This is presented as a positive for rapid transit in *Sydney’s rail futures* by claims that passengers on rapid transit need not consult a timetable; meaning they would be unable to determine whether a particular train is, or trains are, reliable.

    ‘Turn up and go’ presumably is intended to mean there is a short interval between trains. This is already the case for Sydney trains on the city circle and harbour bridge in peak hours. It is unlikely to be the case for stations at the outer extent of the metro system.

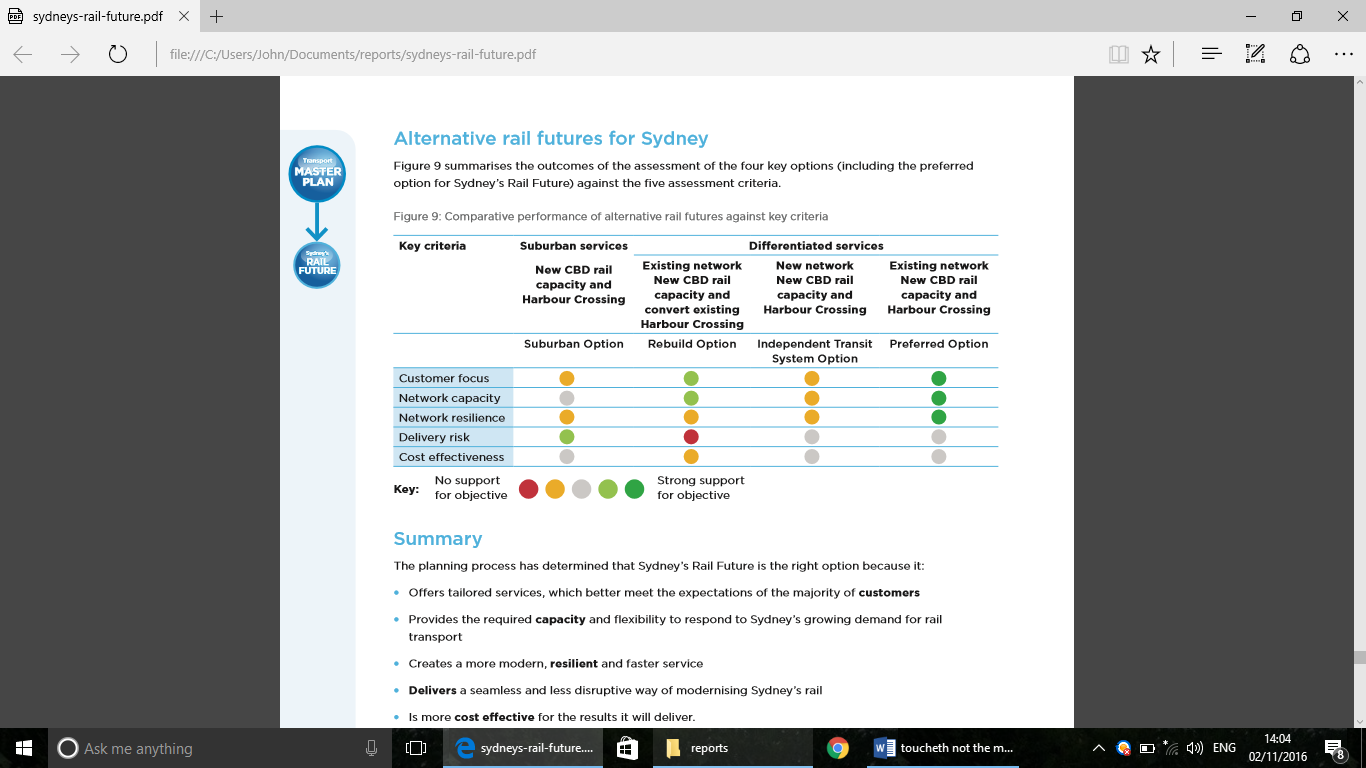
    *Sydney’s rail future* generally used terminology along the lines of: turn up and go means passengers do not have a ‘need to consult a timetable’. There is a subtle but potentially significant difference between this and terminology such as ‘no timetable’ which has been used elsewhere (e.g. at p14). No timetable could mean varying gaps between services, rather than services at regular intervals. For example 6 trains per hour can be met by 5 trains 6 minutes apart and the 6th train a half hour later. Use of consistent and clear terminology would be preferable. [↑](#endnote-ref-18)
19. Demand on the existing rail network is highest on the West Line. One of the arguments for North-West rail was that it might attract existing passengers from that line, thus relieving capacity. That aim may have been best served by a commuter rail link Parramatta-Chatswood; Western Line passengers bound for north of the harbour, eg. North Sydney, need not join a train using the Western Line from Parramatta to the CBD but could join a train to North Sydney via Epping and Chatswood. The *Discussion paper* does not provide any evidence of the Northwest metro having this effect; indeed its maps indicate the metro is ineffective in relieving demand on the most capacity constrained parts of the network (see discussion of Map 4 in the text). [↑](#endnote-ref-19)
20. Characteristics of various types of rail service are discussed in pp. 233-239 of Christie’s Inquiry. [↑](#endnote-ref-20)
21. Trials of European Train Control System technology on Sydney’s system were reported in 2008. See: <http://www.railwaygazette.com/news/single-view/view/australia-looks-to-europe-for-train-control-technology.html> [↑](#endnote-ref-21)
22. Option C, p.24, *Sydney’s rail future.*  [↑](#endnote-ref-22)
23. Figure 9, p.26 *Sydney’s rail future.* The assessment at p.24 reads*:*

    *‘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.’*

    Figure 9 is reproduced below:

     [↑](#endnote-ref-23)
24. Perhaps ironically improving the case for completion of a line from Maldon (near Picton) to Dombarton (near Port Kembla). [↑](#endnote-ref-24)
25. Called ‘consequent’ in *toucheth not the monorail* because of its likely locking-out a variety of rail options throughout Sydney’s metropolitan area, and thus changing the pattern of economic and social. The first consequences can be seen in the present *Discussion paper*. See: *Sydney 2 exhibit 2 - toucheth not the monorail* [↑](#endnote-ref-25)
26. Break of gauge is reported from a number of sources such as: <https://blogs.crikey.com.au/planetalking/2014/05/10/sydneys-nw-rail-calamity-a-last-call-for-sanity/>

    <http://www.smh.com.au/nsw/warnings-on-northwest-rail-link-plan-ignored-20140129-31mvw.html>

    <http://www.aptnsw.org.au/documents/nwrl_faq.html>

    <http://ecotransit.org.au/wp/2014/07/07/sydney-north-west-rail-link-unfit-purpose/> [↑](#endnote-ref-26)
27. Christie Inquiry at p.200. [↑](#endnote-ref-27)
28. See: Sandy Thomas, *Fixing the trains in Sydney – 1855 revisited*, August 2013. [↑](#endnote-ref-28)
29. Some different speculations are documented at: *Sydney 2 exhibit 2 - toucheth not the monorail.* One speculation, that the length of metro route arises from a mistake, is worth reiterating because the same error is repeated in the discussion paper. The matter in question is mistaking journey and on board time (thereby leading to the conclusion that a reasonable time for standing on board a train is 30 or more minutes rather than the more usual assumption of up to 20 minutes). The mistake is repeated in the *Discussion paper* eg. at p.38, which might be compared with <https://www.opal.com.au/en/opal-fares/trip_journey_and_transfer_explained/> [↑](#endnote-ref-29)
30. *Discussion paper* at Figure 5 at p.13. [↑](#endnote-ref-30)
31. *Discussion paper* at p.20. [↑](#endnote-ref-31)
32. Part of this, South West Rail Link to St Marys via Badgerys Creek Airport, and to Narellan is supposedly a commitment in the long term transport master plan. See slide 5 at: <http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/oso-blor-swrle-presentation-briefing.pdfty> [↑](#endnote-ref-32)
33. Christie Inquiry at p.200.

    [↑](#endnote-ref-33)
34. For example, p.19 of the *Discussion paper*. [↑](#endnote-ref-34)
35. *Discussion paper* customer service criteria are: frequency, reliability, journey time.

    This is repetitive; journey time is calculated as walk-up/out, wait time (half frequency interval), trip time, and probability of delay (reliability and punctuality). That is, journey time encapsulates frequency and reliability. Many (most?) factors relating to service quality are omitted, for example perceptions of personal security, cleanliness, likelihood of seating etc. Better specifications of criteria are readily available see for example work reported by the Independent Pricing and Regulatory Tribunal*, Improving CityRail’s accountability and incentives through an effective service contract, Transport Final Report* 2008 at <https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_report_-_improving_cityrails_accountability_and_incentives_though_an_effective_service_contract_-_december_2008_-_website_document.pdf> [↑](#endnote-ref-35)
36. *Discussion paper* at p.29 and p.38. Sydney’s current (double-deck) fleet has around 900 seats per train. Seat numbers for metro trains are yet to be finalised although it is suggested that each 6 car train might have around 380 seats, see: *Sydney metro city and southwest, Final Business Case Summary,* October 2016 at p.50. The metro trains will have substantially fewer seats than the single deck 6 car trains in Brisbane or Melbourne.

    More than twice (2.4 times) as many metro trains will need to run to offer the seating capacity of Sydney trains.

    Sydney current train maximum sustainable frequency is popularly put at 20 trains per hour; equating with the seating of around 48 6 car metro trains. Metro rated capacity is popularly claimed to be only 30 trains per hour.

    An alternate analysis is: both Sydney’s current fleet metro type of trains are said to have equal total carrying capacity (around 1200). Replacement of Sydney trains by metro adds potentially 50 per cent train number capacity to a line but reduces seating by at least 36 percent with 6 car trains, or 16 percent with 8 car trains.

    These analyses may understate commuter rail carrying capacity; more than 20 current Sydney trains per hour are in fact possible on line sections at present, however, this cannot be reliably held for a sustained period. Introduction of modern train control technology such as ETCS may increase the capacity of a line to handle commuter trains; the metro figures presume modern technology is used. [↑](#endnote-ref-36)
37. For example reported spending of $12.6 million see: <http://www.smh.com.au/nsw/baird-government-spends-millions-to-win-public-support-after-rail-road-disruption-20160625-gprrls.html> [↑](#endnote-ref-37)
38. Reports have consultants paid $2 million to *‘design a curriculum for Sydney school students to teach them about how a government rail project was "changing their [community] for the better"*’. See: <http://www.smh.com.au/nsw/baird-government-blows-its-consulting-budget-20161009-gry8um.html>. The result is at <http://www.sydneymetro.info/education/fasttracking-future-program> [↑](#endnote-ref-38)
39. See note xxxvi. [↑](#endnote-ref-39)
40. Official documents show the preferred light rail route to be the same as the existing commuter railway to Carlingford. See: <http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/parramatta-light-rail-preferred-network-map.pdf>. Part of this existing commuter railway may be necessary for a Parramatta-Epping rail connection. [↑](#endnote-ref-40)
41. *Discussion paper* at p.22. and see: <http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/oso-blor-swrle-presentation-briefing.pdf> [↑](#endnote-ref-41)
42. *Commonwealth urban transport* at thejadebeagle.com. [↑](#endnote-ref-42)
43. See the series of articles on *‘Urbane transport’* at <http://johnmenadue.com/blog/> [↑](#endnote-ref-43)
44. See: <https://www.whitlam.org/gough_whitlam/Western_Sydney> and <https://www.whitlam.org/__data/assets/pdf_file/0008/185462/4-_Railway_to_Parra_1974_pdf.pdf> [↑](#endnote-ref-44)
45. National cohesion; the function of a national government in a federation is to increase cohesion among different states. This can be done by ‘harmonisation’ which in Australia this is constrained by the Constitution ‘reserving’ many activities including regulations and processes to the states; referral of state powers to the Commonwealth being necessary for example in the case of uniform corporations laws.

    In transport national cohesion requires physical interoperability of infrastructure, not merely (or even) uniform regulations and processes; even were there to be uniform national regulations and processes it would not be (practically) possible to run a train from north Brisbane to Sydney because of the break of gauge. To the author, interoperability trumps the idea of ‘competitive federalism’ in many transport systems and applications. The Commonwealth has greater power in relation to physical than non-physical (economic, regulatory) connectedness.

    Strengthening accountability of each level of government; every element of government is relevant to the Commonwealth because of the nature of Australia’s Constitution; accountability relies on the informed satisfaction of the relevant electorate. One source of Commonwealth executive power is to uphold the Constitution. Also only a national government is in a position to undertake some such activities, so these might fall within the nationhood power. [↑](#endnote-ref-45)
46. *Commonwealth urban transport* at p9. [↑](#endnote-ref-46)
47. The case for full Commonwealth Parliamentary, rather than partial Commonwealth Government, involvement is in *Transport policy post Williams* at thejadebeagle.com. [↑](#endnote-ref-47)