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Standing Committee on Infrastructure, Transport and Cities
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Inquiry into role of transport connectivity in stimulating development and economic activity

Introduction

Action for Public Transport (NSW) ("APT (NSW)") is a transport advocacy group active in Sydney since 1974. We promote the interests of beneficiaries of public transport; both passengers, and the wider community.

Focus of this submission

We note that the Committee has a particular focus on value capture, but we will also address the introductory words in its terms of reference: *"The Committee is to inquire into and report upon the role of transport connectivity in stimulating development and economic activity both in major urban areas, and in regional Australia"*.

We will focus on public transport connectivity, which has a big and often under-appreciated role in stimulating development and economic activity.

Summary

APT (NSW) favours increased investment in public transport infrastructure and service provision. Our view is that a quantum leap in the availability, frequency and speed of public transport services is the key to accommodating increased population without damaging the quality of life of Australians, reducing social and economic inclusion, and degrading our environment.

We believe it is imperative to secure public transport corridors, including corridors for rail links to the Badgery's Creek airport, and high-speed rail linking Melbourne, Canberra, Sydney and Brisbane. This would open up significant value capture opportunities.

We are not convinced that other forms of value capture should be seen as a preferred avenue to fund *capital* expenditure on public transport projects. We suggest that a great

deal could be achieved by rebalancing current capital expenditure towards public transport, and away from urban motorways. It is not sensible to persist with funding projects that repeatedly fail to achieve their stated aim –reduced traffic congestion - even if “extra” money can be found for public transport projects.

Urban motorways promote sprawling low-density cities; public transport promotes compact cities and job-rich centres. A decisive shift in priorities is needed if we are to make our cities fit for the future.

APT (NSW) is concerned that current methods of appraisal fail to account properly for the benefits of public transport, including its positive effect on development and economic activity. This creates a systematic bias against public transport investment. Correcting this inbuilt bias is essential to getting better transport selection and funding decisions.

The greatest source of bias against capital investment in public transport could be the anticipation of recurrent funding requirements. The Committee might consider whether some forms of value capture would assist in overcoming this impediment.

What is “public transport connectivity”?

At first blush “public transport connectivity” means simply that two locations are connected by public transport. Using this simple indicator it is clear that there are many “missing links” in the Sydney public transport network, and the same is true elsewhere.

The presence of lines on a map can however be misleading. Much depends on the frequency and speed of services on a route, which enable people to fit within a limited travel budget – or not, in which case they will choose another mode or may not make the trip at all.

When these indicators are used, the public transport connectivity of Australian cities and regions is poorer than the lines on maps suggest. The pattern of precipitous drops in service levels in areas settled since the 1960s is stark.

System design and the network effect

The key to better public transport connectivity is to design the network as a web of interconnecting routes, and run services at high frequencies (on all modes). The superiority of grids and modified grid systems¹ in maximising accessibility is now quite well established (Walker, 2012; Dodson, Mees et al 2011; Mees, 2010). Because of the ‘network effects’ unleashed, improvements to bus services lead to more patronage on trains as well, and vice versa.

Containment

One of the key questions in integrating transport planning and land use planning is the idea that jobs can be moved to follow the population, and workers can and will take the job closest to their home. This would in theory lead to lower VKTs and shorter commute times. That is not however what happens in practice, especially in the case of higher order jobs.

The better approach is to *connect* homes to clusters of higher order jobs, in centres that are highly accessible by public transport. As a productivity issue, jobs that can be

¹ See for example the “double cobweb” system design in SMH Independent Inquiry into long term public transport plan for Sydney (2010) p. 182.

accessed by public transport are a good way to address high rates of disengagement from the workforce in some locations.

Travel time

The missing links in the network need to be filled to reduce circuitous routes. The (tantalisingly short) missing link between Parramatta and Epping remains a major weakness in Sydney. Smaller-scale priority systems such as bus lanes (including contraflow lanes) and bus-activated traffic lights also have much to offer in reducing delays to public transport vehicles.

Does (public) transport connectivity stimulate development? Does it stimulate economic activity?

There is strong empirical evidence that public transport connectivity, especially rail connectivity, does stimulate development and economic activity, both in urban areas and regional areas. Fast, frequent public transport services reduce the effective distance between locations and can shape land use patterns to make better use of valuable urban space.

The call for integrated land use and transport planning has been made for many years, but APT (NSW) suggests that Jim Betts, CEO of Infrastructure NSW and former Secretary of the Department of Transport in Victoria, may be even closer to the mark. At an ADC Forum on Infrastructure in Sydney (March 2014) he reportedly said: “Transport planning *is* land use planning”.

A paper written for HS2 (Rosewell and Venables p.2)², which is developing a new high-speed rail link in the UK, quotes a useful distinction drawn by historian Tim Leunig:

What history teaches us is that transport matters when it connects up two places that are synergistic, or when it allows a confined space to grow.

Key indicators

The indicators typically used to gauge impacts on economic activity are concerned with changes in output, gross regional product, personal income, employment, productivity, investment, property values, and taxes.

In terms of analysing the impact of transport connectivity in urban areas and regional towns and cities, APT (NSW) suggests these indicators could usefully be supplemented with: walkability scores³, retail turnover, vacancy rates, foot traffic and job density. This would provide a clearer picture of whether places are improving, or declining, before and after changes to transport connections.

Major urban areas

Public transport can bring large numbers of people together to conduct business face to face and to exchange ideas and information. It produces a deeper pool of labour for employers, and a deeper pool of job opportunities for workers, along with education and training opportunities. This is sometimes called an “agglomeration benefit” (Citylab (2013)). It is particularly important in the case of higher order “knowledge” jobs.

² High Speed Two (HS2) Limited is an executive non-departmental public body, sponsored by the UK Department of Transport. It is funded by grant-in-aid from the government.

<https://www.gov.uk/government/organisations/high-speed-two-limited>

³ <https://www.walkscore.com/methodology.shtml>

Public transport has this effect because it uses valuable urban space so efficiently. On a purely physical level, *public transport makes space for development and economic activity*.

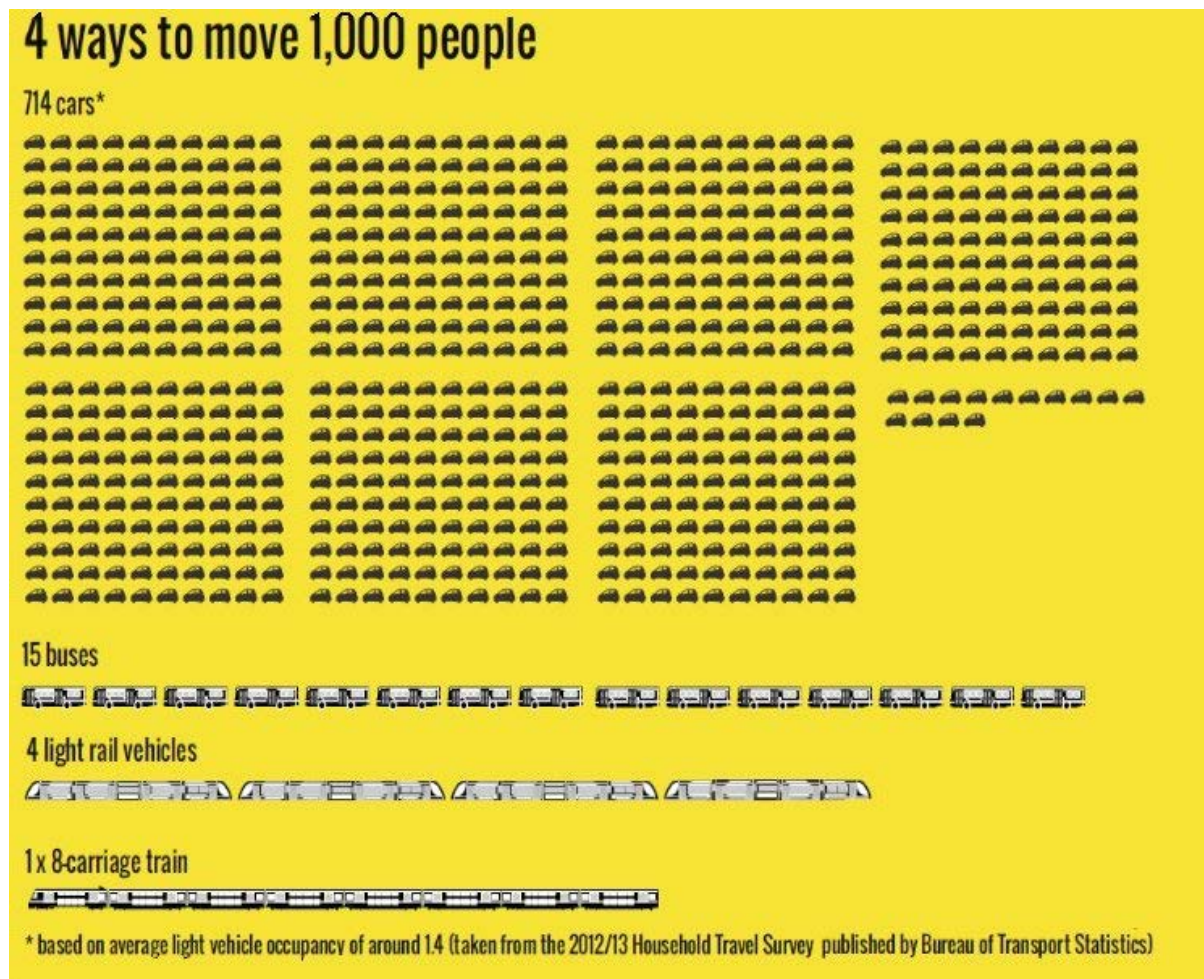


Figure 1

Conversely, urban motorways offer no agglomeration benefit. They frequently damage connectivity, and reduce the vitality of city centres. Former New York City traffic commissioner Samuel Schwartz (2015) records the history of the largest and most expensive public works project in the country's history, the US Interstate Highway System (IHS), and concludes (p.17):

The IHS is a marvel for transporting people and goods between cities, but wherever it is routed 'through cities' it is almost always a disaster.

A thousand words



Detroit, 1980s. Source: Plate 39 from *The City Assembled: The Elements of Urban Form Through History*, Spiro Kostoff, 1992.

Litman (2009, p.1-14) notes that increased urban roadway capacity is likely to stimulate low-density, urban-fringe, car dependent development patterns. Its effect is to *reduce urban densities*. Other types of transport improvements usually result in more infill and clustered land use.

Roads also compete directly for urban space with other potential uses, including housing. The amount of urban land devoted to concrete is in our view a more pressing concern than the amount devoted to backyards. The image below demonstrates this point.

How to reduce urban densities



Source: M5 EIS Figure 5-10

Transit oriented development has much to offer cities. It is worth noting though that public transport connectivity neither produces nor requires a wholesale shift to high-density living (Mees, 2010). Regrettably, this misapprehension can spark a defensive reaction to a non-existent threat.

The typology of development in areas that have comparatively good public transport (like Sydney's eastern suburbs and north shore) is varied; Blues Point tower is no better at supporting a viable public transport system than the terrace houses and other human-scale alternatives that surround it.

Regional areas

Fast (or just faster) rail combined with fast internet makes it viable for businesses and residents to base themselves in regional cities within actual and virtual reach of major cities, to the benefit of both.

Bendigo (with its historic centre and excellent regional gallery) is a good example of a regional city with a rail connection to Melbourne offering a real alternative. Strong attractors at both ends promote travel flow in both directions. This is good for the economics of public transport operation as well as for regional economies.

Newcastle could easily follow Bendigo's lead if, instead of truncating its rail line, NSW recognised rail as a competitive advantage for Newcastle, straightened out the line, and introduced fast and frequent services to and from Sydney.

Case study: Epping to Chatswood rail

A 2014 report commissioned by the Tourism and Task Force (“TTF”) utilised a detailed case study of the impact of the Epping to Chatswood Rail Link on the clusters of economic activity at Epping, Macquarie Park, North Ryde and Chatswood (the station locations).

The TTF report shows that since the start of operation of the link in 2009, the Macquarie Park economy grew by an additional 1.56% to 2.44% per annum, bucking the trend of lower economic growth in the wake of the GFC. It estimates that the link delivered an estimated additional \$1.02 billion to \$1.49 billion present value economic activity to the local economy.

It also estimated that jobs growth in the Macquarie Park area was 2.19% to 2.65% per annum higher than it otherwise would have been. In other locations around Australia, NSW and Sydney, job growth over this period was slow or even contracted.

The analysis demonstrated that the improved access to labour markets provided by the rail link delivered a greater return on capital investment and higher business profitability; productivity in Macquarie Park grew significantly faster than elsewhere in Sydney and NSW.

The TTF report not only indicates that the \$2.3 billion Chatswood to Epping rail link was worthwhile; it also highlights the folly of the decision to truncate the Chatswood to Parramatta rail line at Epping.

Case study: Jubilee line extension and Docklands light rail

The TTF report concluded that in the case of the Jubilee Line Extension⁴ and Docklands Light Rail, the success of the location and performance of the high value-add service sectors was underpinned by these landmark public transport projects.

A separate paper prepared by PwC for the Committee for Sydney (2015, p.5) observes that the Docklands development did not succeed until a public transport link to and from the “old” financial centre of London was created:

This enabled a business person to get from one centre to the other in less than 15 minutes with services so speedy and frequent that they didn’t have to know the timetable. With such links centres can act together and form a single economic agglomeration even when they are spatially separate⁵.

This case study is particularly pertinent to the longstanding ambition of developing Parramatta as a strong second CBD. The NSW State Government has recently committed to a light rail system connecting Parramatta, Olympic Park and Strathfield. This is a good start, but the completion of the link to Chatswood and a high speed, high capacity link to the CBD is an urgent priority. It can and should take less than 15 minutes to travel between the two CBDs.

⁴ See Jones, Evers, Bray, Georgeson, Powell, Paris and Lane 2004, *The Jubilee Line Extension Impact Study: Main Findings and Lessons Learnt*, Association for European Transport

⁵ Committee for Sydney 2015 Issues Paper no. 5 *Big City Analytics: Identifying Sydney’s economic employment and population centres of gravity*. <http://www.sydney.org.au/what-we-do/publications/>

Case study: Commonwealth Bank

The impending departure of the Commonwealth Bank from Olympic Park illustrates (as did the Docklands experience) that locations without serious public transport links struggle to retain and attract major employers even if they are physically “closer” to their workforce.

Olympic Park is over-endowed with parking and road access is well provided for, but public transport links are focused on major events and otherwise poor. For a long while this major employer “got by” with putting on its own bus transport, but it now intends to move to a location more accessible by public transport.

Analysis and appraisal methods

APT (NSW) has long been concerned about the systematic bias against public transport investment embedded in some analysis and appraisal techniques. We suggest that improvements in transport planning, project appraisal and project selection are needed.

It is very easy to be misled by decision-making models that presuppose the solution to a problem, address the wrong problem, or cannot cope with the important things that add up to quality of life: access to employment and education, social equity and inclusion, and a healthy environment.

Consideration of alternatives

People do not usually travel for the sake of moving. They do so to access employment, education, goods, services, and social connections. Consideration of alternative ways to provide this access can be hampered by premature commitments to a particular solution.

For example, Infrastructure Australia (“IA”) conducted an Infrastructure Audit that suggested (pp. 95,105,106) that increased freight movement requires communities and ordinary motorists to co-exist with B-triples. Similarly a projected rise in “air traffic” was said to require additional airport capacity.

IA’s 2016 Infrastructure Plan recognises however that this kind of mode specificity reflects inbuilt and unexamined assumptions about the nature of the problem and the solution. It closes off consideration of alternatives and should be avoided.

EIS processes do purport to consider alternatives, but these are done so late in the process that serious consideration of alternative ways of meeting the stated objectives of the transport project being assessed is unlikely. The likely outcome of environmental impact assessment is a set of measures to mitigate the impact of a given proposal, not a different kind of solution to the problem.

Asking the wrong question

A 2014 NSW Audit Office report notes (p.15) that the Westconnex project began with the NSW Government asking Infrastructure NSW (established mid-2011) to provide advice on “Sydney’s next motorway priority” as part of its work in developing the State Infrastructure Strategy (SIS). Exactly when and how this request was made is not indicated in the report. Nor is it clear why the request was made, presuming as it does a need for another motorway.

The reason may be the one alluded to in a March 2012 report by the National Infrastructure Co-Coordinator, which canvassed prospects for “high value vehicle”

roads and stated (p.29): “*There have been suggestions that Transurban may present an unsolicited proposal to the NSW Government to develop several motorway links*”.

It would be reasonable for a government facing unsolicited transport proposals to have in place a strategic framework against which such proposals could be assessed. The question actually asked was however bound to elicit something else entirely.

We now have a project selected and funded ahead of other projects not answering the description “motorway”. Contracts have been let before the project was properly assessed and indeed before it was properly planned.

This kind of approach to infrastructure planning comes at a cost if realisation eventually dawns that the project is not a good idea after all. Either the project is cancelled, attracting a compensation claim, or worse still, the government succumbs to the “sunk-cost fallacy” and throws good money after bad (Kahneman 2011, p.343-346).

Circular reasoning and self-fulfilling prophecies

The conventional approach to transport planning (or more correctly, road planning) can be described as “predict and provide”. The “predict and provide” approach is an exercise in circular reasoning and self-fulfilling prophecy.

Transport modelling is based on projected population growth, from which growth in travel is assumed. Past patterns of mode share, adjusted for committed transport projects (few of which are public transport projects), are then projected forward as “forecasts”. If motor vehicle travel demand is projected to grow in excess of supply, standard modelling leads inexorably to the proposition that more road space should be constructed to accommodate it.

The Westconnex M5 EIS for example rests on the forecast (Vol.1A, p.4-12) that “72 per cent of journeys in 2031 will be made on the road network each weekday by vehicle, equal to an additional 4.3 million new trips compared to current traffic movements”. This is a figure derived from the “predict and provide” approach, which is well past its use-by date.

Schwartz (2015 p.104) points to a “paradox” within the developed world: the measure that seems to indicate the most mobility – VMT (vehicle miles travelled⁶) – is negatively correlated with productivity measures like gross domestic product.

To some extent demand management is now acknowledged as an alternative strategy, but too often this means turning kerbside lanes into clearways. This is still a “predict and provide” approach. Removing a buffer between traffic and pedestrians (parked vehicles) creates an environment hostile to pedestrians. It simultaneously damages public transport patronage, which depends on (and fosters) high levels of pedestrian activity.

Induced traffic

The central problem with the “predict and provide” approach is its persistent failure to acknowledge the reality of *induced traffic*, a phenomenon that has been empirically established over many years⁷. Traffic is not like water; it is a fundamental mistake to

⁶ In Australia, the equivalent is VKT (vehicle kilometres travelled).

⁷ See Trunk Roads and the Generation of Traffic: The SACTRA Report" - U.K. 1994, <http://assets.dft.gov.uk/>; cited in SMH 2010, p.163.

apply hydraulic principles to transport planning. Trying to “widen the pipes” to accommodate increased flows is a misconceived endeavour.

The act of providing additional road space increases the demand it was aiming to accommodate, that is, it increases vehicle kilometres travelled (VKT). There is some initial relief, but over the longer term what is usually achieved in the urban context is to move bottlenecks from one point to another.

It can for example be stated with a high degree of confidence that the Westconnex “new” M5 will induce more traffic to occupy the extra road space it will create. The Project Overview itself contains empirical evidence that this is what should be expected. It notes (p.9) that the “old” M5 was congested within just six months of its opening in 2001, and now experiences the slowest typical travel speeds of any of Sydney’s main motorways.

If the history of the old M5 is any guide – and it is - six months or so after the “new” M5 opens, its users will be stuck in traffic all over again. Most of that traffic will consist of passenger vehicles, with an average vehicle occupancy of 1.4 persons⁸. The EIS observes (Vol.1A, p.4-12) that almost 40 per cent of the users of the M5 East during business hours are on work related business (including deliveries and freight transport). The corollary is that more than 60 per cent are not.

Cost-benefit analysis

In our view, conventional cost-benefit analysis is much too narrow to properly inform Government decision-makers of the consequences of the transport investment decisions they are called on to make, and for which they will be accountable.

The quest for a single ratio to sum up all the consequences of a government decision and give a red or green light to a proposed investment is probably misguided in the first place. Tempting though it may be to seek a technocratic solution to complex decisions, the temptation needs to be resisted.

Not everything that can be counted counts, and not everything that counts can be counted.

(Albert Einstein, cited by Litman 2009)

Cost-benefit analysis is not “evidence based”

Cost-benefit analysis is sometimes misdescribed as “evidence-based”. It is however a technique based on inputs and assumptions. Its central focus is on the time lost to traffic congestion, seen as a cause of reduced productivity. If an assumption that additional capacity will reduce congestion is uncritically factored in, cost-benefit analysis fails to see the obvious: existing urban motorways built on the basis that they would reduce traffic congestion (and travel time) have done no such thing.

True evidence-based decisions focus on consequences, or outcomes. “Evidence based” should mean that a measure has been shown empirically to be effective in alleviating some problem or pathology.

Doing the same thing over and over again in the expectation of a different outcome shows a deplorable lack of interest in evaluating the outcome of previous urban motorway projects. Stubborn attachment to an approach that empirically does not work can only lead to a monumental waste of public money.

⁸ Bureau of Transport Statistics 2012/13 Household Travel Survey

Cost-benefit analysis does not capture key benefits of public transport

Cost-benefit analysis does not account properly for the negative externalities of road transport and the positive externalities of transit alternatives (notably, agglomeration benefits). It is consequently biased against public transport investment.

Litman (2009, p.102) observes that some transport impacts, such as vehicle operation costs and travel time values, have been widely studied, and estimates of their magnitude are easily available. Other impacts, such as changes in walking conditions and greenhouse gas emissions, are more difficult to quantify, and so are often dismissed by decision-makers as intangibles, with the implication that they are less important.

The result is decision-making biased in favour of easy-to-measure impacts at the expense of more difficult-to-measure impacts. The single ratio that is the product of cost-benefit analysis is highly influential, but blind to any factor that is not assigned a dollar figure. And yet those factors can be very important.

APT (NSW) understands that Westconnex was born of a desire to build a freight-only road from the Western Suburbs to Port Botany. That project could not, it seems, demonstrate a favourable cost-benefit ratio. The addition of commuter car traffic and a refocusing of the route on the established CBD managed to produce a positive ratio.

If it is indeed the case that the cost-benefit ratio improved as the project lost its focus on freight movement and got worse for Sydney, this technique should not be so heavily relied upon; it is producing perverse results in the context of assessing transport infrastructure.

Agglomeration and wider economic benefits

Litman (2009) points out that the economic, social and environmental costs of land use impacts are often not recognised in conventional transport planning.

Infrastructure Australia has tried to capture the benefits of agglomeration (co-location of mutually supportive activities in a central location) in cost-benefit analyses. An IPART Issues Paper notes on the other hand (2014a, at p.38) that current NSW guidelines on economic appraisal do not include agglomeration benefits in cost-benefit analysis.

The productivity benefits of greater workforce participation, and access to jobs, education and training, are not regarded by IPART as an external benefit of public transport (2014b, p.80). This may reflect a broader omission in cost-benefit analysis, at least in NSW.

Location and distribution of costs and benefits

Cost-benefit analysis consciously ignores the question of which groups and places accrue benefits, and which bear costs. Most of the costs of a project might fall on one group or place, and most of the benefits on another. Reverse the situation entirely, and the ratio will be unaffected. Yet the consequences (the outcomes) of the decision are in reality very different.

APT (NSW) is acutely conscious that citizens in some parts of Sydney and many parts of NSW lack access to good public transport services. We hope the construction of the

Leppington rail line before residents move in to the new Leppington Precinct represents a new paradigm for urban development in Sydney⁹.

Cost-benefit analysis however does not necessarily give a higher score to projects that alleviate locational transport disadvantage, and prevent a repetition of past mistakes. Public transport usage is higher where comparatively good services already exist; unsurprisingly, people are not using public transport that isn't there.

Patronage forecasts and farebox estimates may accordingly be less favourable in areas of greater need, putting them at a disadvantage when funding decisions are made.

Funding priorities and choices

APT (NSW) fully supports the idea of capturing the value delivered by key projects like high-speed rail by early acquisition of project corridors. There are however some issues with other forms of value-capture that we think the Committee needs to consider.

Rebalancing capital expenditure

To the extent that the current Inquiry reflects a common belief that we "can't afford" to fund public transport infrastructure, we urge the Committee to check that supposition.

It is our contention that too much money has already been wasted on urban motorways, and that the first step should be to stop doing so. Westconnex for example carries an opportunity cost which is of great concern to our members. Current estimates are in the order of \$16 billion. This includes \$1.8 billion of State money, \$1.5 billion of Federal money, and an additional Federal loan of up to \$2 billion (Westconnex New M5 Project Overview p.3).

The costs are growing as the scope of the project expands, in an unconvincing attempt to "mitigate" the problems it will create. The project is being redesigned month by month as it becomes blindingly obvious that it will worsen traffic congestion wherever it attempts to rejoin the existing road system.

Worthwhile projects

The substantial public funds involved could and should be reallocated to filling in missing links in the public transport system, disentangling the passenger rail network from the rail freight network, and progressing road projects that do make sense, such as dual carriageways on regional and intercity roads.

The list of worthwhile projects in NSW is a long one: rail to Badgery's Creek; straightening out the rail line to Newcastle to reduce travel times; more light rail connections serving Parramatta; perhaps the resuscitation of the "Metro West" proposal.

Better cities

It may be tempting to avoid conflict by continuing to fund initiatives that have strong bureaucratic and interest group backing, even if they deliver no lasting public benefit. Attempting to find additional money to spend on the projects that are actually worthwhile may look like a way out of an impasse. But projects like Westconnex cannot sensibly proceed in tandem with serious public transport improvements, even if extra

⁹ <http://www.aptnsw.org.au/documents/leppingtonDCP.html>

money can be found for the latter. They embody completely different approaches to cities.

Urban motorways produce an urban environment that is hostile to walking, cycling and public transport. They consequently undermine public transport usage, which depends on (and fosters) good pedestrian connectivity. They promote sprawl, not the co-location of high-order knowledge jobs in highly accessible centres (agglomeration).

Investment in public transport can help take traffic off the roads¹⁰ – but dramatic increases in road capacity induce more traffic and sabotage the potential gains. A reordering of priorities is needed, to make our cities fit for the future.

Prudent borrowing

Another funding avenue that we suggest has yet to be properly explored is that of prudent public borrowing. The Governor of the Reserve Bank, Glenn Stevens, set out the argument for this approach to infrastructure provision in an address to the Economic Society of Australia in Brisbane on 10 June 2015. He observed that:

The funding would be available, with long term interest rates the lowest we have ever seen or are likely to. (And it is perfectly sensible for some public debt to be used to fund infrastructure that will earn a return. That is not the same as borrowing to pay pensions or public servants.) The impediments are in our decision-making processes and, it seems, in our inability to find political agreement on how to proceed¹¹.

Funding public transport services

A paper prepared by the Committee for Sydney (2015) canvasses various options for value capture, but it does so mainly in the context of the issue of funding services, rather than capital expenditure. We think the Committee for Sydney has made an important observation that the Inquiry should consider in its deliberations.

It may be that the most potent impediment to capital investment in public transport infrastructure is not the cost of the infrastructure, but the anticipation of the recurrent costs of providing services. The Committee might consider whether some form of value capture could be a secure source of recurrent funding of services, complementing the farebox.

User charges

IPART and NSW Treasury for years argued for a theoretical model that sees user charges (fares) cover the cost of operation of public transport services, but this has not been a practical proposition because of the affordability and patronage impacts. More recently IPART (2014a. and 2014b.) has been developing a model that recognises some, but not all, of the external benefits of public transport and countenances government funding of services to that extent.

¹⁰ It may be that complementary demand management measures are required to produce this outcome.

¹¹ <http://www.rba.gov.au/speeches/2015/sp-gov-2015-06-10.html>

The view of APT (NSW) is that as much as reasonably possible should be recovered from fares, provided they remain affordable for all income groups, and patronage is not suppressed¹².

User charges (that is, fares) can deter public transport patronage more than may be recognised. It was reportedly expected (using conventional analyses) that removal of the \$2.60 “station access fee” for passengers using Mascot and Green Square stations would increase patronage by around 15-17%. Instead, patronage jumped 70% in a year (“Ticket sales rocket on airport line as prices plunge” SMH June 9, 2011). We repeat, 70%.

Even allowing for an underlying rise in patronage (around 20% in the estimation of the Airport Link company) this is stunning evidence that high fares (due to station access fees) sabotaged patronage on the T2 Airport/Macarthur line. The consequence has been underutilisation of an excellent piece of public transport infrastructure.

Network design

The design of public transport networks, and the frequency of services, have a big impact on patronage and hence on the amount that can be recovered in fares. Traditionally services in Australian cities have followed a radial pattern focused on a single CBD. Our cities have now outgrown these traditional patterns.

“Turn up and go” frequencies on a web of interconnected routes, covering a larger area, are the key to maximising patronage and farebox receipts. The best performing routes (in terms of both patronage and farebox recovery) have strong attractors at both ends (promoting bi-directional flows), and a series of activity centres in between.

Impact on property values and property-related tax revenues as a result of transport connectivity (terms of reference item (a))

The purpose of assessing impacts on property values and property-related tax revenues as a result of transport connectivity is to allow the Committee to consider forms of value capture as a means of funding public transport infrastructure.

APT (NSW) would of course like to see better funding for public transport infrastructure; but as discussed above we are not convinced that the case for first rebalancing current capital funding towards public transport projects has yet been appreciated.

Options for the application of value-capture mechanisms to sustainably fund transport infrastructure (terms of reference item (b))

This term of reference makes it clear that the Committee is thinking about value-capture in the context of funding infrastructure, not ongoing services.

A recent (2015) paper published by the Committee for Sydney suggests that value capture could be a sustainable source of recurrent funding for public transport services.

¹² Action for Public Transport (NSW) 2014, *Submission in response to IPART Review of External Benefits of Public Transport Issues Paper* http://www.aptnsw.org.au/documents/ipart_ext_benefits.html

The same paper sets out a range of possible value-capture mechanisms, and this appears to cover the field well.

APT (NSW) urges caution in relation to local value capture. The benefits of public transport investment are metropolitan and cross regional, not just local. Trips catered for by the northwest rail line, for example, might otherwise add to the pressure on the local roads of many local areas.

Means by which government and the private sector can best utilise value-capture funding mechanisms (terms of reference item (c))

IA's recent Infrastructure Plan (p.94) details two relevant precedents. One relates to the funding of the Crossrail project in London. The project, featuring a 42-kilometre tunnel and 10 new stations, is scheduled to open for services in late 2019.

Around a third of the £14.8 billion cost is to come from various forms of value capture or developer contributions. The principal means adopted is a business rate supplement on commercial properties (above a specified rateable value) in the Greater London Authority area.

The other example concerns two rate levies used to partially fund Melbourne's \$650 million City Loop, completed in 1985. A Melbourne and Metropolitan Board of Works levy applied across the Melbourne metropolitan area, and a Melbourne City Council levy applied initially to CBD properties and then to all properties in the municipality.

Appropriate roles of each of the three levels of government (terms of reference item (d))

We make no specific comment on this term of reference.

International experiences of the delivery of high speed rail projects by value-capture methods (terms of reference item (e))

We have no information on this subject to contribute at this stage.

Impact of high-speed rail on city and regional development (terms of reference item (e))

The French provincial city of Lille is known to have benefited from its location on the high-speed rail line linking London and Paris.

A study done by Gabriel Ahlfeldt (2010) at the London School of Economics considers the effects of HSR stations on two German towns, as a "natural experiment". It finds that the areas adjacent to the stations on average grew by 2.7 per cent more in terms of GDP than surrounding areas. A similar increase could be found in terms of employment.

APT (NSW) is confident that the proposed high-speed rail link along Australia's eastern seaboard would equally be supportive of regional revitalisation. It has great potential to simultaneously ease the pressure on the infrastructure and housing prices of Sydney and Melbourne.

IA has noted that 72% of forecast population growth to 2031 is projected to be in the four largest capitals – Sydney, Melbourne, Brisbane and Perth. In total, these four cities are projected to grow by 5.9 million people, or 46 per cent, to 18.6 million in 2031. In

contrast, Adelaide, Canberra, Hobart and Darwin are projected to grow in total by slightly more than 0.5 million people or 26.7 per cent. IA suggests:

Given this, it is worth considering what steps could be taken to foster greater long-term growth in those cities, which may moderate the consequential infrastructure challenges in the larger cities.

In the case of Canberra, we believe that fast train connections to Sydney and Melbourne would enable Canberra to play a bigger role. Regional cities should not be overlooked, as they also have established infrastructure and smaller populations.

The intended route has perfect characteristics for effective transit – it is in essence a long straight line between major cities, with substantial centres of population along it. The cities it will link have already demonstrated they are synergistic, because airspace on the relevant corridors is already congested.

We also note that a spin-off effect would be the freeing up of capacity for freight movement by rail. The Australian Logistics Council is reported to have welcomed the proposal for this reason (The Age, 19 September 2013). The potential safety and environmental benefits of maximising freight haulage by rail are well known.

Methods of implementing value-capture in both greenfield and brownfield developments (terms of reference item (f))

We make no specific comment on this term of reference.

Ways to capture future value opportunity when reserving transport corridors (terms of reference item (g))

APT (NSW) suggests that this is a fertile area for the Committee's consideration. IA noted in its Infrastructure Audit (finding 21) and again in its Infrastructure Plan (p.151) that failure to protect corridors can lead to significantly higher construction costs, making otherwise beneficial projects uneconomic.

It is no exaggeration to say that an airport at Badgery's Creek would now be out of contention if the Federal government had not bought the site in 1983 and protected it from housing development.

Rights of ownership

Ownership automatically confers opportunities to capture the value of rezonings and infrastructure provision. If and when federal land is to be made available for industry and other uses fostered by airport access, the federal government is in a position to reap the windfall gain on behalf of Australia's taxpayers. It can capture the value generated by its investment.

The same approach is now needed to preserve land for a rail line to service the new airport. Another high priority is the HSR route between Melbourne and Brisbane.

It is well known that this model accounts for the strong "farebox" recovery by MTR in Hong Kong. The secret does not lie in the farebox at all.

Value capture opportunities could be enhanced by strategic acquisitions beyond the line, but within its catchment.

Ready, set, go

Value may be able to be captured earlier if agencies can be flexible about programming, and proceed with stretches of the line as opportunities arise.

It may for example be possible to commence work on the section from Canberra to Sydney early, starting in Canberra rather than the other way round. Once the line reaches Moss Vale and connects to the Southern Highlands line, significant time reductions will have been achieved. This would support the development of Canberra.

We suggest too that public transport infrastructure planners should be funded to develop plans to the “shovel- ready” stage as soon as possible. Funding for “shovel- ready” projects can unexpectedly become available in the event of economic downturns.

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