INQUIRY INTO TRANSPORT CONNECTIVITY

House of Representatives Standing Committee on Infrastructure, Transport and Cities

February 2016

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Executive Summary

The status of Australian transport infrastructure has not improved substantively since 1999. Research based on constant price statistics shows that although the monetary value of infrastructure construction has increased, it has simply kept pace with economic expansion and population growth, the two key factors determining the demand for infrastructure services.

Reform of infrastructure planning and management institutions in Australia has been glacially slow; in respect of roads infrastructure it has been non-existent and and the number of highly authoritative and competent agencies urging fundamental reform of the wider notion of transport (not just roads) infrastructure is increasing each year. Engineers Australia sees this issue as critically important to the issues before the Committee and strongly supports these calls.

The just released National Infrastructure Plan from Infrastructure Australia is the latest call for change. The Plan makes the vital point that best results will be achieved through a comprehensive overhaul of Australia's approach to infrastructure planning and development. Comprehensive and integrated land use and infrastructure planning is necessary to ensure that scarce funds are directed towards projects with the highest potential returns for the nation and State, Territory and local economies. Present practices are simply not working. Change is already underway as demonstrated by the important improvements occurring in Sydney.

We believe that the purpose of infrastructure is to establish the basis for higher quality, sustainable and productive lives for all Australian. To fulfil this challenge infrastructure it must become more sustainable. Building more and more roads has not worked as the increasing congestion in our cities demonstrates. At the same time transport infrastructure delivery in regional areas has at best been ad hoc.

Transport connectivity can be improved in present arrangements but a more systematic approach is necessary to realise its full potential. The points made here about comprehensive infrastructure planning are as relevant to regional areas as they are to cities.

Value capture is an important and innovative source of funds for infrastructure development. There are numerous successful examples from overseas and some from Australia. The submission draws attention to these examples and to the availability of a well-documented economic framework for evaluating value capture options.

Introduction

Engineers Australia is the peak body responsible for accreditation of engineering education in Australia, responsible for standards of engineering practice in Australia and is the link between the engineering profession in Australia and globally. Engineers Australia is not involved in industrial matters or the business interests of engineering enterprises whether large or small.

We have been involved in the assessment of the status of Australia's infrastructure since the publication of the first Infrastructure Report Card in 1999. Engineers bring particular insights to discussions of infrastructure derived from their roles in constructing and operating infrastructure, their experiences as users of infrastructure in almost all sections of the economy and their training and expertise as engineers. We are grateful for this opportunity to put forward our views for the Committee's consideration.

Engineers Australia Infrastructure Principles

Engineers Australia's interest in infrastructure development are related to two factors; first, well managed infrastructure and infrastructure services give rise to substantial economic externalities that underpin productivity growth essential to continued improvement in Australia's standard of living; second, engineers build, operate, maintain and use infrastructure services in most areas of the economy and as a result have important insights into the critical role infrastructure plays in Australia's prosperity.

Engineers Australia has been involved in assessing the status of Australia's infrastructure since 1999 through its Infrastructure Report Cards[1]. We have reflected the lessons from this experience in the following principles:

- Infrastructure must be managed to advance socio-economic goals not political ones.
- Infrastructure planning without land use planning is not sensible
- Infrastructure planning is integral to governing not an optional extra
- Infrastructure is not the exclusive preserve of governments, the private sector is a key player
- Infrastructure must be managed sustainability and over its full expected life
- Infrastructure governance must be rigorous and must be de-politicized
- ICT enabled infrastructure delivers more value for money, especially in coordinated system
- Short term acquisition practices should be discarded in favour of whole of life considerations.

These principles summarise the essential requirements for the development and operation of sustainable infrastructure assets providing sustainable infrastructure services. The issue of transport connectivity and the associated funding option of value capture are inherent elements of this framework and can be optimised in comprehensive infrastructure plans like the one just released by Infrastructure Australia[2]. The value of an overarching plan is that incremental progress on solving connectivity problems can be achieved in the knowledge that related matters are also covered by the plan. Solving

[1] See www.engineersaustralia.org.au/infrastructure-report-card

[2] Infrastructure Australia, Australian Infrastructure Plan, Priorities and Reforms for our Nation's Future, February 2016, www.infrastructureaustralia.gov.au

connectivity problems without this broader information can lead to some immediate benefits but over time these may be sub-optimal because related issues have been overlooked.

Setting the Context

Historically, infrastructure development has been funded from government consolidated revenues. Private sector involvement was developed through the use of several variations of public private partnership. In 1990-91, engineering construction on roads by the Australian public sector was $4,293.7 million in 2012-13 prices, accounting for 29.0% of public sector infrastructure development. The private sector contributed another $1,849.3 million, again in 2012-13 prices, accounting for 69.8% of private sector infrastructure development. Roads construction was already dominating infrastructure construction.

By 2014-15, public sector annual engineering construction on roads had increased by over 150% to $10,943.7 million in 2012-13 prices and its share of public sector infrastructure development had increased to 48.1%. Private sector annual engineering construction on roads increased by over 140% to $4,468.4 million. Although a large increase in annual construction, its share of private sector infrastructure development fell to 17.1%, a distortion resulting from the extraordinary increase in private sector development of other infrastructure in support of resources projects[3].

The key point is that, however viewed, engineering construction on roads has increased substantially over the last twenty five years, both absolutely and as shares of overall infrastructure development, especially in respect of construction by the public sector. Despite these changes, the Bureau of Infrastructure, Transport and Regional Economics (BITRE) has projected extraordinary increases in the avoidable social costs of road congestion in Australian capital cities in the years to 2030[4]. The predominant issue that the BITRE analysis points to is congestion due to poor or absent urban connectivity. Similarly, the Infrastructure Australia priority list[5] just released contains numerous examples of high priority connectivity projects between capital cities and regional centre.

In a report, about to be released, Engineers Australia[6] revisits the status of Australian infrastructure for the first time since its 2010 Infrastructure Report Cards. In 2010, the status of roads overall was assessed as adequate, but requiring major changes to be fit for purpose[7]. The status of national roads was seen to be slightly better than State and Territory roads, but local roads were seen as poor requiring critical changes to be fit for purpose. The 2016 report examines the trends in infrastructure construction in the five years leading to the 2010 assessment and in the five years since. Economic expansion and population growth since 2010 were taken into account. Cumulative road construction in the five years after 2010 was 17.5% higher than the previous five years and far more public and private sector road construction was undertaken than ever before. But congestion identified by the BITRE has worsened rather than eased, hardly qualifying as the major changes required improving infrastructure status.

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[3] These statistics are from Engineers Australia, Infrastructure Report Australia 2015, February 2016, available from policy@engineersaustralia.org.au

[4] Bureau of Infrastructure, Transport and Regional Economics, Traffic and congestion cost trends for Australian capital cities, November 2015, www.bitre.gov.au

[5] Infrastructure Australia, Infrastructure Priority List, www.infrastructureaustralia.org.au

[6] See footnote 2.

[7] Engineers Australia, Infrastructure Report Card 2010, June 2010, www.engineersaustralia.org.au/infrastructure-report-card

In its 2013 State of Play report[8], Infrastructure Australia assessed Australian infrastructure by applying six criteria in a framework comprising economic efficiency, new infrastructure developments and effective use of existing infrastructure assets. Eleven common types of infrastructure were examined and the results were reported in a traffic light format. Roads was the only infrastructure type that scored red lights against each of the six criteria. The report concluded that "road infrastructure stands out as the sub sector that makes a significant contribution to the Australian economy, but rates poorly against the common assessment framework outlined in this paper. This suggests that the provision of road infrastructure is leading to less than efficient outcomes for the overall economy-particularly where roads are complementary or a substitute for another type of infrastructure."[9]

The Productivity Commission came to similar conclusions in its inquiry into public infrastructure saying that "current governance, taxation and institutional arrangements for the provision and funding of roads are presenting challenges for coherent long-term planning and investment in road infrastructure, and are ultimately unsustainable."[10] The same theme has again been taken up in the National Infrastructure Plan with Infrastructure Australia recommending a public inquiry into road funding either by itself or by the productivity Commission to identify a new road funding model that shifts the burden to road users[11].

Where Does the Solution Lie?

The solution is that wholesale reforms to Australia's infrastructure institutions and infrastructure planning are essential. The character of reforms necessary for city infrastructure was outlined in a paper prepared for Engineers Australia[12] by Emmerson Richardson and Peter Newman. They concluded that comprehensive and integrated revisions of city plans are essential to ensure that cities become more sustainable and more productive. They emphasize the importance of sustainable and rapid transport systems and restructuring transport budgets. It is unsurprising that Infrastructure Australia has come to similar conclusions in its just released plan.

Transport connectivity and value capture mechanisms for funding infrastructure are essential elements of the framework outlined by Richardson and Newman. Despite the trend towards benefit-cost analyses, decision makers still focus on the narrow objective of how to contain government expenditure on transport rather than the broader objective of containing the transport costs for government and users combined, including costs of the land occupied by roads and parking facilities. Engineers Australia strongly supports their views that a new paradigm for transport planning in cities is necessary to substantially reduce dependence on cars for transport in favour of a mix of time table free, rapid and frequent public transport options.

Richardson and Newman argue that the character of city transport should be shaped by the "Marchetti constant"--that the average city travel time budget should be no more than about one hour per person per day. This principle is incorporated into the notion of Transit Oriented Development (TOD), an alternative approach that planners can use to develop "Transit Cities", incorporating various ways of getting about from walking, cycling, local buses and light rail, as antidotes to "Auto Cities". TODs have

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[8] Infrastructure Australia, 2013 State of Play Report; Australia's Key Economic Infrastructure Sectors, December 2013, www.infrastructureaustralia.gov.au

[9] Op cit, p23

[10] Productivity Commission, Public Infrastructure, Inquiry Report Volume 1, May 2014, p303, www.pc.gov.au

[11] Infrastructure Australia, op cit.

[12] Emmerson Richardson (Sinclair Knight Merz) and Professor Peter Newman (Curtin University) Transport for Sustainable Cities, www.engineersaustralia.org.au

radii that are consistent with the Marchetti principle and should be planned along major transit routes and already are used internationally and in Australia.

Connectivity is the critical element within each TOD and which links adjacent TODs. Richardson and Newman show how the TOD planning concept can be applied to reshape Sydney within its existing arterial framework and they discuss a range of international case studies. The objective of the changed approach to land use and infrastructure planning is to radically reduce car use, to saves money on infrastructure, to help create more amenable community centres that can cater for population growth and it create an alternative infrastructure funding source through enhanced land values in the proximity of new transit modes. The nature of the change proposed is encapsulated in a quote from Andy Wiley-Schwartz in the UK that says "road engineers are realising that they are in the community development business and not just in the facilities development business. He calls this the 'slow road' movement."[13]

The character of reforms needed to enhance connectivity between cities and regional centres is graphically outlined in Infrastructure Australia's national infrastructure plan. Australia needs and deserves to have a comprehensive national infrastructure plan. Engineers Australia strongly endorses the directions taken by Infrastructure Australia and recommends that the Committee consider questions of connectivity in the context of this framework, particularly the elements dealing with:

- Reforms to Australia's road funding model;
- Development and implementation of national governance principles;
- The development of a national infrastructure performance measurement framework; and,
- The Australian Government using its funding position to drive reforms broader than those relating to specific projects.

In short, what we are saying is that infrastructure connectivity and funding are best solved in a comprehensive de-politicised national infrastructure plan in which States, Territories and cities play their part by integrating land use and infrastructure planning. Current processes are not working and seem incapable of working. Infrastructure Australia has shown the way since 2008 through the development of rigorous project evaluation methodology and has now produced the blue print for substantive progress in cities and regional areas. Engineers Australia urges the Committee to support these directions.

Value Capture and Infrastructure Development

Although the costs of governance, institutional and planning reform can be viewed as the normal costs of government, implementing changes to existing infrastructure and building new infrastructure must be funded either from government consolidated revenue or through user pays. Prevailing political views concerning government expenditure are reflected in trends in engineering construction on infrastructure. Construction in real terms completed peaked in 2011-12 and has fallen in each year since. New commencements, also in real terms, peaked a year earlier, in 2010-11 and have also fallen each year since. This perspective is complicated by some private sector construction on infrastructure assets owned by the sector, for example, in the electricity, rail and telecommunications sectors. The value of this contribution cannot be accurately estimated because in available statistics it is compounded with private sector construction of infrastructure to support specific resources projects in often remote locations.

What is abundantly clear is that the public sector contribution to infrastructure development has fallen substantially behind economic and population growth and private sector infrastructure provision in urban

[13] Op cit, p13

areas still has not developed its full potential. As well as institutional reform, new ways to fund infrastructure development need to be found. Value capture is a serious option that warrants consideration by governments and infrastructure authorities. Value capture is the new revenue flows from the application of various government taxation options to the increase in land value following the implementation of infrastructure projects.

Recently, the BITRE has reviewed the potential to fund infrastructure through different forms of value capture. The review covers many of the case studies cited in international studies and also looks at a number of Australian studies. The review is somewhat sceptical in its approach but none-the-less concludes that there are "compelling reasons why public funders should capture land value uplifts from their investment in transport infrastructure."[14] Having identified the flaws in mechanisms like tax increment funding, betterment taxes, transactions taxes and joint development, the paper concludes that a broad based land tax along the lines proposed by the Henry review addresses most flaws and avoids the majority of market distortions posed by other mechanisms.

Engineers Australia believes that a key message from overseas case studies it that successful value capture mechanisms are ones tailored to the situation they relate to. The most prominent example is MTR Hong Kong which fully funds its railway operations and was profitable from an early stage through the integration of railway and property development.

The methodology for determining land value capture in car dependent cities has been documented by McIntosh, Newman, Trubka and Kenworthy[15] in a forthcoming peer reviewed article that is available on the web. Thistle proposes a five step framework to determine the potential to use value capture to fund infrastructure projects. The paper applies the framework to a contemporary rail project in Western Australia. Engineers Australia believes this methodology is transferable to other situations and commends it to the Committee for further consideration.

A key recommendation from the Infrastructure Australia plan just released is that there should be a public inquiry to identify a new funding model to replace existing road taxes and charges[16]. Engineers Australia strongly supports such a review and suggests that the Committee use its influence to ensure that such a review occurs. The question of land value capture is closely related to potential alternative funding models and inclusion in the review would ensure overall consistency in how transport infrastructure funding is approached.

Importance of Connectivity

The meaning of connectivity is highly dependent on the situation examined, but the common link is accessibility. In urban areas it is often associated with the density of connections and the directness of links in local road systems. It also refers to the connections between local road systems and the CBD. In regional areas connectivity is mainly concerned with access to transport services between regional centres and between these centres and domestic markets located in large cities or ports for export to international markets.

[14] BITRE, Transport infrastructure and land value uplift, Information Sheet 69, 15 June 2015, www.bitre.hov.au

[15] James McIntosh, Peter Newman, Roman Trubka and Jeff Kenworthy, Framework for Land Value Capture from the Investment in Transit in Car Dependent Cities, Journal of transport and Land Use, scheduled for Vol 10, No 1, 2017, available from https://www.jtlu.org/index.php/jtlu/article/viewFile/531/656

[16] Infrastructure Australia, op cit, Recommendation 5.3, p87

Increasing the productivity of capital cities is a critical element of the government's innovation strategy and congestion is seen as a major impediment. The Grattan Institute[17] has examined the issues influencing the productivity of cities, noting the particular importance of the rise of knowledge intensive activities. Their analysis concludes that "in significant parts of Australia's four biggest cities, shallow labour markets and increasingly congested transport systems are holding back productivity by making it harder to get the best match between the skills of a worker and the demands of a job."[18] In a similar vein, the Australian Infrastructure Plan recommends that "governments should upgrade legacy capital passenger transport infrastructure to deliver higher capacity, high frequency services across all modes"[19] and not to neglect the gaps in access to passenger transport on the outskirts of Australian cities. This process is already underway in Sydney where the North West rail link is an outstanding example of what can be achieved through determined action.

In regional areas, the main accessibility challenge relates to the poor standard of road networks acting as serious constraints to the movement of freight to market destinations. This has been a long standing problem that in 2010-11 was the subject of an ABS research paper reviewing Regional Development Australia Committee regional plans. The review included an assessment of regional transport infrastructure and 45 of 56 regional development associations identified freight constraints including roads unsuitable for heavy vehicles, narrow bridges with low weight limits and the lack of heavy vehicle by-pass routes as barriers to regional growth. When it comes to infrastructure planning and bidding for attention, regions typically fend for themselves. There are few good examples of regional plans but one is the Illawarra transport connectivity plan[20].

Present practice has been to allocate scarce infrastructure development funds on a squeaky wheels basis. Once again this familiar problem has been picked up in the National infrastructure Plan. Two recommendations in particular warrant mention. Infrastructure Australia recommends that State and Territory governments should deliver long term regional infrastructure plans and that the Australian Government should prioritise investment in regional infrastructure where the population is growing quickly and where the bulk of our regional economic growth can be found[21]. Not only does Engineers Australia strongly endorse these recommendations, we are astonished that they are necessary.

In short, our argument is that connectivity lies at the heart of effective and efficient transport infrastructure. Certainly some improvement is possible by continuing with the ad hoc infrastructure processes now common around Australia. However, the full potential of transport infrastructure will only be realised through an integrated, systematic approach as outlined by the National Infrastructure Plan.

This position does not negate the importance of value capture as another way to fund infrastructure developments irrespective of location. The issues associated with value capture mechanisms reviewed by the BITRE in the paper cited earlier can best be resolved systematically and through national leadership that ensures that issues such as population policy and location, responsibilities of the tiers of government and taxation arrangements are adequately addressed.

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[17] Grattan Institute, Productive Cities, Opportunities in a Changing Economy, May 2013, www.grattan.edu.au

[18] Grattan Institute, op cit, p44

[19] Infrastructure Australia, recommendations 3.2 and 3.3.

[20] Illawarra Business Chamber,Linking the Illawarra, Improving the Region's Transport Connectivity, www.illawarrabusiness.com.au

[21] Infrastructure Australia, recommendations 4.1 and 4.2.

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